Introduction

The purpose of this document is to provide stakeholders in the adoption of the ICC Building and Fire Safety Codes with resources to be successful in achieving the timely adoption and efficient implementation of the I-Codes.

To be successful, ICC members and stakeholders in the regulation of the built environment must influence decision makers. To achieve successful code adoptions, a coalition of stakeholders needs to be formed and organized. The coalition needs to use its resources to ensure that elected officials and decision makers think of ICC when issues of building and fire safety are raised. This requires the coalition to work at various levels of government (federal, state, and local) and all branches of government (executive, legislative, and judicial) depending on the scope of the code adoption objective. It also includes working with interested and affected parties (home builders, insurance interests, contractors, unions, manufacturers, architects, engineers, utilities, etc.) on an individual and collective basis. Capturing that leadership role will require a readily recognized ICC staff and effectively orchestrated members who have the necessary tools to address the needs of decision makers and influence those on whom the decision makers rely for advice.

You are receiving this Toolkit because you are an integral part of the ICC team. You are critical to the success of the ICC in helping protect the public safety and being recognized as the leading U.S., if not global, public safety organization. You will be relied on to help develop, carry and deploy the ICC message. You will also be expected to advise others in ICC of opportunities and to work with them to successfully capture those opportunities. This Toolkit provides you with the resources you will need to advocate for the ICC and be viewed as a resource on which others will rely.

Just as a mechanic's tool kit, this Toolkit has many tools that can be applied to almost any situation that arises. In some cases, those situations will focus on addressing an existing problem that is brought to the ICC for resolution. In other cases, the tools available can be applied to preventive maintenance activities the ICC deems appropriate to initiate. In others, new ground will be cultivated and the Toolkit will be available as a resource.

In using the Toolkit, first determine the issue or problem that must be addressed. Then identify, in the resources section of the Toolkit, the resources that are relevant to addressing the issue. Finally develop and implement a strategy that addresses the best way to deploy those resources.
Objectives

The objectives of the ICC public policy efforts are provided below. In meeting these objectives, the ICC will capture an increasing recognition as a leader in public safety and the reduction in burden on government.

- Adoption of and reliance on the I-Codes and support services
- Increased awareness and recognition of and reliance on ICC services, programs, publications, etc.
- Referral of others to the ICC on building safety issues
- Participation in or support for development of ICC support services
- Recognition of and participation in the ICC code change process
- Membership and participation in the ICC and its committees

Background

Compared to where the ICC public policy initiatives are now or will evolve to, the legacy model code organizations had less robust public policy initiatives. They commented on Federal legislation and regulations, assisted state government with adoption and implementation issues as requested by the state, and interacted with a number of private sector entities as contacted by them or where circumstances dictated. These activities occurred on an individual basis and were also coordinated through the Council of American Building Officials (CABO).

With the formation of the International Code Council in 1994, all activities of CABO were transferred to the ICC. Over the past few years, the ICC public policy efforts have grown and the model code organizations began to more fully integrate their efforts under the ICC. One example was the formation of an Industry Advisory Committee (IAC) of interested parties to make recommendations to ICC on its operations. Another was the addition of ICC staff to specifically handle government affairs.

When the consolidation of the model code groups took place in early 2003, a number of initiatives were undertaken to create a more proactive and robust public policy initiative. This included formation of a public policy committee and advisory committees comprised of labor interests and federal agency staff. It also included the development of a public policy plan.

Today the ICC is embarking on the implementation of a robust ICC public policy initiative. To achieve the above objectives across all governmental entities and with as many interested and affected parties, all ICC staff should be familiar with these efforts. In addition, ICC staff must be able to use and be empowered to deploy the materials in this Toolkit.
About the International Code Council

Vision
Protecting the health, safety, and welfare of people by creating better buildings and safer communities.

Mission
Providing the highest quality codes, standards, products, and services for all concerned with the safety and performance of the built environment

Origin of ICC

The International Code Council (ICC), established in 1994, is a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). Since the early 1900s, these nonprofit organizations developed three separate sets of model codes used throughout the United States. Although such regional code development was effective, at the time a global marketplace and technological advances in construction made a single set of codes a practical necessity. The nation’s three model code groups responded to this need by creating the International Code Council and by developing codes without regional limitations — the International Codes.

Purpose of the ICC

Code enforcement officials, architects, engineers, designers and contractors can now work with one consistent set of requirements throughout the United States. Manufacturers can put their efforts into research and development rather than designing to the specifications of three different sets of standards. They also can focus on being more competitive in worldwide markets. Coordinated education and certification programs can be used internationally. A single set of codes encourages states and localities that currently write their own codes to adopt the International Codes without local technical amendments. Such adoption will lead to consistent code enforcement and higher quality construction. With the publishing of the International Codes, the code organizations can now direct their collective energies toward wider code adoption, better code enforcement and enhanced membership services. All issues and concerns of a regulatory nature now have a single forum for discussion, consideration and resolution. Whether the concern is disaster mitigation, energy conservation, accessibility, innovative technology or fire protection, the ICC provides a single forum for national and international attention to address these concerns.
A Complete Building Safety System

INTERNATIONAL CODES
CODE RESOURCES
ICC MEMBERSHIP
PROFESSIONAL DEVELOPMENT SERVICES
CERTIFICATION
TECHNICAL SERVICES
ICC EVALUATION SERVICE
INTERNATIONAL ACCREDITATION SERVICE

www.iccsafe.org
888-ICC-SAFE (888-422-7233)
A Complete Building Safety System — Not Just Codes

Building safety depends on more than codes and standards. Building safety results from providing trained professionals with resources and ongoing support necessary to stay current with the latest advancements in the building safety field. More cities, counties and states in the United States have used ICC’s comprehensive package of building and fire safety services than any other.

ICC’s building safety system is well equipped to meet the needs of any jurisdiction with code interpretations, education, personnel certification, plan review, building product evaluations, code commentaries, handbooks and more. ICC offers targeted and customized services for the professional development of code enforcement officials, fire officials, architects, engineers, builders, plumbers, contractors and building owners and managers. The ICC building safety system is founded on the participation of building and fire safety officials, the building design and construction industry, and its members for code development and revisions.

International Codes™: Comprehensive, Coordinated and Contemporary

The International Codes (I-Codes™), ICC’s family of building and fire safety codes, provide safeguards for people at home, at school and in the workplace. The I-Codes are a complete set of coordinated, comprehensive and contemporary building and fire safety codes adopted by jurisdictions across America and used as the basis for other countries’ building codes.

The I-Code family includes the following:
- International Building Code®
- International Residential Code®
- International Plumbing Code®
- International Mechanical Code®
- International Fire Code®
- International Energy Conservation Code®
- International Property Maintenance Code®
- International Existing Building Code®
- International Fuel Gas Code®
- ICC Performance Code™ for Buildings and Facilities
- International Private Sewage Disposal Code®
- International Urban-Wildland Interface Code™
- International Zoning Code®

The I-Codes combine the strengths of the legacy codes without regional limitations. They are a single set of codes that are effective, efficient and meet government, industry and public needs.

The ICC governmental consensus development process allows input from all interested individuals and parties. The final determination of code provisions is left in the hands of public safety officials who, with no vested financial interest, can legitimately represent the public interest.
Code Resources
ICC invests considerable resources to support the I-Codes. ICC provides the end users the appropriate support services in order to implement and enforce the codes successfully.

Commentaries on the I-Codes assist in understanding the background and application of the codes to building design, construction and approval activities. For example, the two-volume commentary on the International Building Code® provides application examples, explanatory material, code development history, a comparison with the previous edition, illustrations and a bibliography of additional reference material.

Widespread Support
The following is a partial list of organizations that support the adoption of the ICC International Codes:

- American Gas Association (AGA)
- American Institute of Architects (AIA)
- American Institute of Building Design (AIBD)
- American Planning Association (APA)
- American Seniors Housing Association (ASHA)
- Building Owners and Managers Association (BOMA)
- Insurance Building Code Coalition (IBCC)
- Institute for Business & Home Safety (IBHS)
- International City/County Management Association (ICMA)
- National Council of Architectural Registration Boards (NCARB)
- National Apartment Association (NAA)
- National Association of Home Builders (NAHB)
- National Association of Industrial and Office Properties (NAIOP)
- National Multi Housing Council (NMHC)
- Northern California Drywall Contractors Association (NCDCA)
- Northwest Wall & Ceiling Bureau (NWCB)
- Responsible Energy Codes Alliance (RECA)
- U.S. Department of Defense (DOD)
- U.S. Department of Energy (DOE)
- U.S. Federal Emergency Management Agency (FEMA)
- U.S. Department of Housing and Urban Development (HUD)
- Western Contractors Association
- Western Wall & Ceiling Contractors Association (WWCCA)
- Window and Door Manufacturers Association (WDMA)

ICC Membership
Members are the greatest asset of ICC. Providing quality services to I-Code users is a high priority for ICC. The organization offers several membership categories and an extensive system of regional offices, chapters and key relationships with officials at the state and local levels of government. Code enforcement and fire officials, designers, architects, construction professionals, corporate representatives and others involved in the development and maintenance of our built environment are all valued members of ICC.

ICC members have a voice in code development and enforcement issues throughout the U.S. For instance, Governmental Member Units are given multiple votes (according to population) regarding code changes as well as election of council officials and other issues decided at ICC’s Annual Business Meeting. All members, regardless of membership category, receive valuable benefits. These benefits include toll-free numbers for access to service in ICC locations throughout the U.S., complimentary monographs...
and other publications regarding proposed revisions to ICC codes and unlimited use of all ICC administrative, computer, technical and educational support services. Members also receive valuable discounts on ICC publications, software, videos and related code support products and services. The ICC has 300 local chapters across North America and around the globe to help members stay up to date on both local and national building safety issues. ICC also offers free code training on an annual basis for chapter members.

**Professional Development Services**

ICC’s Professional Development Services (PDS) provides many services to assist cities, counties, states and the federal government in providing education and training programs for their employees and constituents.

The technical curriculum for the codes is comprehensive. More than 100 courses are available in various lengths and delivery modes; targeted to entry-level, intermediate-level and advanced-level code professionals.

PDS provides timely curriculum based on recent editions of each code. Transition programs are available which are designed to assist jurisdictions with the adoption of the I-Codes.

ICC Campus Online provides around-the-clock opportunity for the busy professional to obtain basic knowledge about codes and information to enhance knowledge and skills. ICC Campus Online currently offers more than 60 courses. Approximately 7,000 students have registered and more than 2,500 courses have been delivered in all 50 states and 22 foreign countries. ICC Campus Online can customize its curriculum for any governmental unit or discipline.

The 4-day-long ICC Code Official Institute addresses building department personnel management, financial management, public information, ethics, and legal aspects of code administration.

A video series teaching Residential Inspection is available to provide a visual and straightforward demonstration of residential inspection. This series is widely used by states and local jurisdictions to train new inspectors.

Code Officials have the opportunity to complete an academic degree program in a non-traditional delivery format. ICC partners with community colleges across the country such as Red Rocks Community College in offering an Associates of Applied Science Degree available via the Internet. This degree has a strong code enforcement component and is transferable toward a Bachelor Degree with the University of Phoenix online.
Virtual Seminars are also offered and are “attended” right from the office. The audio is delivered over the telephone. Using a speakerphone allows several individuals to participate and provides the feel of a talk-radio program.

Certification
Certification ensures that competent building and fire safety individuals are involved in the critical building approval process. It also ensures that a level of professionalism is available to attract a continually increasing level of competence and professionalism into the building code community. Over the past three decades, ICC has developed the nation’s most robust and recognized certification credential for code administration professionals. Through ICC, professional certifications are available which are specific to state, regional and national codes and standards throughout the U.S. Currently, over 163,000 certifications are held by 45,000 individuals in one or more of 70 areas of expertise, including approximately 800 Master Code Professionals, the highest technical designation recognized in this profession. Currently, 28 states recognize the benefits of such certifications and require or prefer them as a condition for service.

Technical Services
ICC staff provides code interpretations to facilitate the approval of building designs. More than 100,000 telephone interpretations are addressed each year. In addition, approximately 5,000 informal ICC staff opinions are issued each year with a one-week turnaround. Formal interpretations can be requested at any time and are processed through a committee primarily composed of code officials.

ICC provides comprehensive plan reviews for designers and code officials. ICC technical staff provides plan review worksheets and a comprehensive and professional report outlining any code deficiencies in the proposed plans. Plan reviews are typically completed within three weeks of submittal. On a more limited basis, ICC provides technical consulting for portions of projects where staff will meet face-to-face during the concept phase of the project and provide guidance on code compliance prior to formalization of the final plans and specifications.

ICC Evaluation Service
ICC Evaluation Service (ICC ES) provides assurance that building products and technology meet building code provisions. The activities of ICC ES are undertaken in a way that supports the exercise of the code official’s approval authority. This eliminates the time and effort associated with each state or local agency designing an evaluation method and then performing the evaluation independently. The ICC ES evaluation report provides a benchmark for all parties throughout the U.S. to rely upon when considering new and alternative building technology.

The introduction of new construction technology does not usually coincide with the publication of new building safety codes and standards. Consequently, ICC ES provides “alternative
materials, design and methods of construction” as the basis for acceptance of new building technology that is not specifically covered in the codes and standards.

An ICC ES evaluation report provides the supporting rationale for and a statement of compliance with the U.S. model building codes (2000 or 2003 International, 1999 BOCA National, 1999 Standard and 1997 Uniform) along with any special conditions of use or limitations. An ICC ES evaluation report provides documentation and assurance of the degree to which a product or building technology meets the model building codes. The report helps the code official consider approval of the technology in an informed and timely manner. As a result, it reduces the burden on the technology proponent and fosters the timely deployment of the technology.

ICC ES has issued over 1500 evaluations of new building technologies and software with respect to code compliance. These evaluations have been performed for many companies and facilitate the acceptance of new products by the building design, construction and code communities throughout the U.S. To facilitate international cooperation, ICC ES also participates as a member of the World Federation of Technical Assessment Organizations.

**International Accreditation Service**

The term “approved agency” is used throughout the model codes to refer to an agency “regularly engaged in conducting tests or furnishing inspection services” when “such agency has been approved by the Administrative Authority.” That administrative authority can be a Federal, state or local code official, fire marshal, mechanical inspector or a number of other entities. Implementation of this provision of the code requires each such authority to adjudge the capabilities of third-party testing, inspection and fabrication agencies. The efforts of those agencies are fundamental to the process of code compliance that the administrative authority is entrusted to ensure.

The International Accreditation Service (IAS) assesses and monitors the acceptability of testing laboratories, calibration laboratories, inspection and quality control agencies and fabricator inspection programs for manufacturers using specific materials (e.g., steel, concrete or wood) to certain standards contained in the model codes and international standards associated with conformity assessment. IAS eases the need for each authority to conduct ongoing investigations of these agencies.

IAS is fully accredited to carry out this function and can certify testing laboratories, quality assurance agencies, fabricators and others who are integral to the conformity assessment equation worldwide. That expertise can be brought to bear in deployment and enforcement of any federal, state or local code, and can bolster the level of conformity to the adopted codes and continued building safety. IAS provides the basis for seamless and transparent interaction among
state and local government and with foreign countries on the subject of testing, quality assurance and fabrication. Follow-up inspections, evaluations and re-assessments by IAS ensure that administrative authorities using the codes do not have to perform these functions nor burden the building design and construction community.

To facilitate trade with other countries and help ensure importation of safe products into the U.S. market, IAS has mutual recognition agreements with foreign organizations. IAS is a member of the International Laboratory Accreditation Cooperation, the Inter-American Accreditation Cooperation, the Asia Pacific Laboratory Accreditation Cooperation and the National Cooperation for Laboratory Accreditation in the U.S.

**International Involvement**

ICC is also involved in international laboratory certification and evaluation services. ICC has an international program that is intended to foster increased communication with other countries on building construction regulations. The international program assists other countries in the development, adoption and deployment of building regulations. It also educates them on how the “U.S. system” works. ICC occasionally hosts foreign delegations of building industry technologists or government officials. ICC facilitates foreign delegations’ review and understanding of the U.S. building regulatory system. ICC’s work addressing “inquiries to the U.S.” enables ICC to be the information resource for other countries on the U.S. building code system. This promotes good will and facilitates the acceptance and use of products, designs, personnel and other U.S. programs in those countries.

**Here to Help**

Building safety in a community begins with adopting a proven set of building safety codes. But, it takes much more than a set of codes to protect the public. It requires qualified professionals to implement the day-to-day application of the codes. It also requires proven infrastructure to provide the resources and training necessary to keep the building safety professionals up to date with the latest building safety requirements and enforcement practices. ICC provides these services to the code enforcement community. Call us today at 888-422-7233 for more information on how ICC can partner with you to help make your community a safer place to live, work and play.

**Web Site — www.iccsafe.org**

The ICC web site is an invaluable tool for code users. It provides the latest code news, offers an active selection of code-specific bulletin boards, a section for posting or finding jobs in the building safety field, and extensive information on code publications, products, seminars, certifications, membership and more.
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Falls Church, VA 22041-3405
703-931-4533

Birmingham Regional Office
900 Montclair Road
Birmingham, AL 35213-1206
800-877-2224

Chicago Regional Office
4051 West Flossmoor Road
Country Club Hills, IL 60478
800-214-4321

Los Angeles Regional Office
5360 Workman Mill Road
Whittier, CA 90601-2298
800-423-6587

For More Information visit
www.iccsafe.org
or call 888-ICC-SAFE (888-422-7233)
Purpose

The International Building Code and other International Codes can have a positive impact on property insurance. This paper will educate decision makers on how adopting the I-Codes can improve the cost and availability of property insurance for their communities.

Key Words

- Property loss reduction
- Reduced insurance costs
- Improved building safety
- Building code adoption, implementation and enforcement

Background

Natural disasters such as hurricanes, tornadoes, tropical storms, hail, earthquakes and wild fires can have a devastating effect on the built environment and the economy. Studies of various catastrophes graphically demonstrate that effective building code enforcement greatly reduces associated loss. According to Best’s Review, losses attributable to Hurricane Andrew would have been 30 to 40 percent lower if Florida communities had strictly enforced existing building codes. A study by Factory Mutual Insurance Group illustrates that effective enforcement of building codes in those affected Florida communities would have reduced damage to buildings by up to 55 percent.

Post-disaster assessments of many communities showed a direct relationship between building failures, the codes adopted, the resources directed toward implementation and enforcement, and the services available to support those codes. To reinforce this relationship between loss reduction and code adoption and enforcement, the Insurance Services Office, Inc. (ISO), working with the Insurance Institute for Property Loss Reduction (now the Institute for Business and Home Safety) and tapping the expertise of the three model code groups (now the ICC), developed the Building Code Effectiveness Grading Schedule (BCEGS) in 1995.

About the BCEGS

The purpose of the BCEGS is to review the available public building code enforcement agencies, and to develop a building code effectiveness classification for insurance information and rating purposes. ISO assesses building code adoption and enforcement activities in a particular community, with special emphasis on mitigation of losses from natural disasters. Communities
with well-enforced, up-to-date codes would be expected to experience a reduction in loss, and in return, receive better insurance rates. This “better building/less loss” relationship provides an incentive for communities to adopt contemporary codes and rigorously enforce them, especially as the codes relate to windstorm and earthquake damage. The end result is safer buildings, less damage and lower insured losses from catastrophes.

The BCEGS program assigns each municipality a grade or classification of 1 (exemplary commitment to building code enforcement) to 10 (essentially no adopted codes). ISO develops advisory rating credits that apply to ranges of BCEGS classifications (1-3, 4-7, 8-9, 10), and provides insurers BCEGS classifications, BCEGS advisory credits and related underwriting information. Insurers use these in assessing risk and applying rate credits. This program was phased in over a five-year period, from 1996 to 2001. At present, all communities have been graded. ISO has begun re-grading communities based on code adoption and implementation activities that have occurred since the initial grading period.

A summary of the ISO classification and grading process is as follows:

- Each community is evaluated based on how it administers codes, reviews plans and conducts field inspections. Administration includes, among other things, whether the code is up-to-date, resources devoted to training and certification of code officials, contractor licensing, and records of code official certifications and training.
- Relevant information is provided to ISO by the code official. ISO field representatives conduct an on-site evaluation and assign a classification of 1 to 10 to the community. If the community has different codes and programs for different building types, a separate classification can be issued for each building type.
- ISO files rate credits to be applied to loss costs for personal and commercial property coverage in each community. Once state regulators approve or acknowledge the filings and they become effective, insurers that have given ISO filing authorization can automatically apply the credits.
- A community is reevaluated in five years, or sooner if requested, due to an enhancement in their code program.

When ISO evaluates a community, the classification automatically applies to any building receiving a certificate of occupancy on or after the date of classification. That classification remains with the building regardless of what happens with any future re-classification.

### Issue Identification

Because the insurance industry, communities and their elected officials, the construction industry and the general public are all affected, the results of reclassification are critical. A community’s classification or grade can be downgraded due to lack of initiative in adopting more contemporary codes, the availability and use of comprehensive support services for those adopted codes, and how they implement and enforce those codes. For example, one California community has reported that lack of action regarding adoption of a new state building code was the key factor in their ISO classification being changed from 3 to 7 during a recent reclassification. Such a downgrade adversely affects construction, and in turn, the economy of
the community and its citizens. In a worst-case scenario, erosion in a community’s grade could shut down all new construction. In communities located in states with preemptive legislative authority to adopt building codes, the lack of action, or incorrect action, by the state affects each community on an individual basis, as well as the state at large.

The negative impacts of a higher (less exemplary) ISO grade or classification are:

- Increased risk of injuries and loss of life, property losses, and economic and social disruption from natural disasters.
- The loss of any possibility of insurance rate reduction on buildings constructed after the new classification.
- Loss of pride and decreased morale in the code enforcement department.
- Less support of state or local decision makers from the construction community and the public at large.

If a community or state has been enforcing an older model building code and has not yet adopted the International Building Code, it is at risk of receiving a higher grade or less desirable grade when reclassified.

Discussion

Clearly the insurance industry, construction community and state and local decision makers understand the link between loss of life and property, and the adoption, effective implementation and enforcement of construction codes. The BCEGS reinforces that link by rewarding communities that invest in a more robust building regulatory program, which is the focal point of this program and encompasses much more than the code that is adopted. It includes the entire program to support building safety – not on paper as evidenced by a code document but in practice as evidenced by safe, well-maintained buildings and the building department staff that enforce those codes on behalf of the elected officials and their constituents.

The importance of code provisions should not be minimized: codes must have sensible technical requirements, but also need to be usable, enforceable, cost effective, updated regularly, sensitive to acceptance of new technology, coordinated, reliable, trusted and based on a long history of success. The ISO process looks beyond the technical provisions of the adopted code to address all that takes place in the design, construction, inspection, approval and use of buildings. Given two scenarios – one with a code document that cannot be easily implemented and has no enforcement or support services, and another that can be easily implemented, has support services and is enforced; construction under the latter scenario is more likely to yield success. In short, the realization of safe buildings involves much more than simply looking at words in a code book and how they are developed.

For this reason the ISO process, and any other rational assessment of codes, is focused on the end result – safe buildings – and all code activities that can help achieve that end. This includes training and education for those in the related construction and code communities, certification of contractors and code officials, the level of plan review and construction inspection, the
availability of an evaluation program to facilitate the timely acceptance of new more effective building technology, a program to accredit testing laboratories and quality assurance agencies that play a vital role in code compliance, and all other activities conducted to ensure that code requirements are met at initial occupancy and throughout the life of the building.

All communities in the United States have been classified and rated by ISO and are now undergoing a re-classification process. As noted, a community’s grade is based not only on the code adopted, but on the many factors that influence building safety at occupancy and during its life. When considering updating existing codes, communities need to look not only at the code requirements but also the usability and coordinated nature of all the adopted codes. Communities also must consider the resources needed to implement and enforce the codes and the support services available to augment those local efforts. State agencies with preemptive authority to adopt codes need to consider these issues, actively consult with the communities in the state and adopt a code that will improve the classification of communities within the state.

Conclusions

• The Building Code Effectiveness Grading Schedule can influence adoption and implementation of building codes. It has a direct impact on new construction, as well as the potential loss of life, property and economic viability associated with natural disasters affecting the built environment of each community as well as each state and the nation.
• The grading or classification of a community is based on much more than the code adopted. To look only at technical requirements of existing codes and codes to be adopted excludes many other factors that will impact building safety and could adversely affect the grading of a community. Not upgrading to the latest codes has similar consequences.
• A community’s grading is also based on the usability of the code, the support services for the code and the ability of the community to enhance and maintain the professionalism and capabilities of those implementing and enforcing the code. The International Codes have an existing support structure, eliminating the need for each community or state to fund development and maintenance of that support structure.
• Building safety entails more than technical provisions in the code. The realization of a safe building is the result of a usable and understandable code, informed designers and builders, and capable and trained plan reviewers and effective field inspection by competent individuals supported by robust support services.
• Most communities in the United States that adopt codes use those developed and supported by the ICC. Those communities are more likely to retain or upgrade their existing classification by adopting the 2003 International Codes, with comprehensive support services to facilitate implementation and enforcement.
Questions and Answers about the International Code Council and the International Codes

When federal, state and local decision makers consider updating or adopting building safety codes questions arise about the provider’s ability, background and infrastructure. The question and answer format below will address many questions officials have asked ICC during past code adoption efforts. Topics include:

- Background on the ICC
- Membership
- Code Development
- Code Availability
- Commentaries and Handbooks
- Professional Development
- Personnel Certification and Licensure
- Technical Services
- Evaluation of Building Products
- Accreditation of Labs and Quality Assurance Agencies

Key Terms Defined

The following key terms are used in this document and are defined as follows:

- Accreditation – Verification that an entity has the necessary capabilities and resources to conduct a particular activity. This includes accreditation for standards development or programs associated with personnel qualifications and the ability of an entity to attest to the acceptance of a testing laboratory, quality assurance agency, or other third party with respect to their actions related to conformity assessment.
- Building Construction Regulation – The collective set of laws, rules and regulations that are adopted by federal, state or local agencies to regulate the design, construction, operation, maintenance and use of new and existing buildings to ensure public safety.
- Certification – Within the context of building construction regulations, certification refers to an act by an accredited third party entity that specific criteria in the regulations have been satisfied, and are satisfied on a continuing basis. As an example, a third party agency would certify that a particular piece of equipment had been constructed to satisfy the specific conditions of a standard referenced in the building construction regulations. The term certification is also used to validate the qualifications of personnel to perform particular functions.
- Conformity Assessment – A general term covering all activities associated with verifying compliance with building construction regulations. This includes testing, certification, evaluation, plan review and construction inspection.
- Model Codes – A complete set of documents that are written as a model for a building construction regulation and which can be readily adopted as law and implemented pursuant to such adoption.
• Standard – A set of criteria governing the testing, design, construction, installation or other matter associated with a particular issue, product, material or system.

Background on the ICC

Why was the ICC created?

Builders, designers, code officials, manufacturers and others involved in the design, construction and operation of buildings wanted one model code and one common code format in the U.S. instead of the three model codes and three different code formats that had been in use since the early part of the twentieth century. The construction community also wanted one organization to provide the support and services for the code.

When was the ICC created?

The International Code Council (ICC) was established in 1994 as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). Since the early part of the last century, these nonprofit organizations developed the three separate sets of model codes used throughout the United States. Although regional code development has been effective and responsive to our country’s needs, the time came for a single set of codes. The nation’s three model code groups responded by creating the International Code Council and by developing codes without regional limitations the International Codes. On February 1, 2003, The ICC became one consolidated organization, incorporating the staff and services of the three founding organizations.

What happened to the three model codes with the creation of the ICC Can I still purchase them?

Though the MCOs no longer exist separately, and the three model codes produced by them are no longer being developed, the codes are still published and available for purchase through the ICC. The I-Codes serve as the latest edition of the BOCA National Building Code, ICBO Uniform Building Code, and SBCCI Standard Building Code. The model codes can be purchased online at www.iccsafe.org or by calling 1 (888)699-0541.

Where is the ICC located?

The ICC is headquartered in Washington, D.C.. ICC has three regional offices: Birmingham, Chicago, and Los Angeles. There are 11 resource centers around the country in: New York, Texas, Ohio, South Carolina, Indiana, Missouri, Florida, Pennsylvania, Utah, Washington, and Oklahoma. ICC also has offices in Puerto Rico and Mendoza, Argentina.

How many employees work for ICC?

The ICC has 360 staff located in offices across the country (see locations above).
What are the public safety qualifications of ICC staff?

ICC employs highly qualified individuals with unrivaled technical and professional experience in public safety. Many of the ICC staff were part of the three model code organizations and bring decades of expertise in model code development to the consolidated organization. ICC has experts in civil, mechanical, structural and fire protection engineering, architecture, building design, building and fire code development, code administration and enforcement, and education and training.

In addition to the collective experience of ICC staff, thousands of volunteers serve on ICC committees from federal, state and local government, industry, academia, research facilities and the construction industry.

How has the ICC been recognized?

Aside from the record of adoption of its codes and use of its services, the ICC is recognized in various federal, state and local legislation and regulation. For example, the U.S. Congress recognized the consolidation of ICC and its mission: “Over the past few years, the International Code Council has unified the various regional American building codes into one comprehensive text that serves as the code of record for the United States.” (Senator Christopher Dodd, June 12, 2001). Senator Dodd introduced the Code and Safety for the Americas Act, a proposal submitted by ICC to provide cost effective humanitarian aid to Ecuador and El Salvador by providing a “train-the-trainer” program based on the model building codes. This Act passed into law at the end of 2002 and will be implemented by the U.S. Agency for International Development. Other examples include U.S. Department of Energy recognition of certain I-Codes to address energy conservation and the U.S. Department of Housing and Urban Development recognition of certain I-Codes to address safe harbor issues.

What codes make up the I-Code family?

<table>
<thead>
<tr>
<th>International Building Code</th>
<th>International Plumbing Code</th>
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<td>International Existing Building Code</td>
<td>International Property Maintenance Code</td>
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<td>International Fire Code</td>
<td>International Residential Code</td>
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<td>International Mechanical Code</td>
<td>International Zoning Code</td>
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<td>ICC Performance Code</td>
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Are the I-Codes being adopted?

Yes. As of September 2007, 50 states have adopted one or more of the International Codes at the state or jurisdictional level. The District of Columbia, Puerto Rico, and Federal agencies, including the Architect of the Capitol, Department of Defense, General Services Administration, National Park Service, U.S. Department of State, U.S. Forest Service, Veterans Administration and National Bureau of Prisons also are enforcing one or more of the International Codes.
Have any studies been done comparing the I-Codes with other codes?

Yes. Studies comparing the codes and their infrastructure have been done by the American Institute of Architects, Building Owners and Managers Association, International City Managers Association, National Association of Home Builders, National Multi-Housing Council, Portland Cement Association and the States of New York and Oregon. The ICC has published a summary of these studies.

What is the impact of the transition to the I-Codes on developers, the public, and other stakeholders?

The impact on adopting the I-Codes in place of one of the model codes previously published by the MCOs is nominal because the code development process, training, certification, and other activities related to the support system are basically the same. All the previous model codes and the I-Codes have a common code format. Code users and enforcers are already familiar with the ICC code development process as it is based on the processes used by ICC’s founders.

What are the views on the ICC by some of the parties impacted by the I-Codes?

The National Multi Housing Council (NMHC) and the National Apartment Association support the International Codes because “The new family of ICC codes brings consistency in code enforcement and economies in code enforcement and real estate development . . . These codes are the only set of model codes specifically written to work together, and as a separate package they are very responsive to the needs and concerns of the multifamily and seniors housing industries . . . These codes resolve the confusion associated with the federal accessibility provisions by being the only model codes designed to be in compliance with the Americans with Disabilities Act Accessibility Guidelines and the U.S. Department of Housing and Urban Development Fair Housing Accessibility Guidelines”. News release dated December 29, 1999.

The Building Owners and Managers Association (BOMA) “supports the adoption and implementation of the International Codes, the only set of coordinated and integrated set of model building codes for the built environment, as a means of achieving more consistent and more reasonable regulation of the commercial real estate industry.” News release dated June 24, 2002.

The National Association of Home Builders (NAHB) “supports the concept of a coordinated set of national model building codes developed for the consideration of state and local jurisdictions that provides for: Responsible code development procedures as reflected by the ICC . . .” News release dated July 13, 1999.

The International City Managers Association (ICMA) stated: “. . . Primarily the building officials and code enforcement officers employed by cities and counties developed ICC’s model building code . . . As public servants under the general direction of city/county managers, local building officials have as their primary concern the broad general interest of local governments and the citizens they serve.” ICMA website, posted May 2002.
The American Institute of Architects (AIA) “reaffirmed its support for a single set of comprehensive codes to be used throughout the United States . . . AIA continues to encourage the adoption of performance-based, prescriptive codes to serve the needs of the public. They recommend the uniform adoption of the following codes at all levels of state and local government: The International Building Code, the International Energy Conservation Code, the International Mechanical Code, the International Plumbing Code, the International Property Maintenance Code, the International Residential Code, The International Zoning Code, and the NEC.” Reaffirmation made August 2002.

A study conducted by a joint building code and fire service committee in the state of Oregon said that “…it is essential that the selected building and fire codes be from the same set of published codes. The Committee found that the ICC codes are more consistent with existing Oregon codes… The Committee found that transition to, and the long-term use of, the ICC codes would have less impact on state and local jurisdictions and on the private sectors of the building industry. Transition of the ICC codes would be comparatively smoother and would not require consideration of other existing codes adopted in Oregon. Finally, the Committee found that the national process for amending and maintaining the ICC codes is more accessible and more appropriate for the adoption of regulatory codes.” December, 2002 Committee Report.

**Membership**

*Who are the members of ICC?*

Members of ICC include Federal, state and local officials, officials from the building and fire service, engineers, architects, designers, construction professionals, manufacturers, contractors, builders, insurance interests, utilities and those who own and operate buildings.

*Can anyone become a member?*

Yes.

*What do members receive?*

ICC members have available toll-free numbers to services at all ICC locations and receive copies of the ICC magazine and ICC bulletins. Upon request they receive complimentary monographs of proposed changes to the codes and other publications related to revisions to the codes. They also receive unlimited use of ICC administrative, computer, technical and educational support services. The ICC provides appropriate state personnel access to an electronic version of all of the I-Codes, except for the ICC Electrical Code provisions contained in the National Electrical Code. The ICC will also provide technical assistance to states in preparing any amendments to the codes that the state has adopted. In short ICC members have available to them the resources they need to participate in the code development process and to adopt, implement, understand, enforce and comply with the codes.
**Code Development**

*How are the I-Codes developed?*

The I-Codes are developed through an open, inclusive and balanced consensus process with built-in safeguards to prevent domination by any single interest.

*Does the development process of the I-Codes represent sound public policy?*

Yes. The policy for developing the International Codes is based on a proven system of providing for public safety in the built environment by allowing all interested and affected parties to participate in the formulation of those codes and their support infrastructure as well as the policies that govern the operation of the ICC. The success of the I-Code process, known as a governmental consensus process, is based on a commitment to an open, balanced, and inclusive code development process. The ICC governmental consensus process meets the principles defined by the National Standards Strategy of 2000; the OMB Circular A-119, federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities (1998). It also complies with Public Law 104-113, the National Technology Transfer and Advancement Act of 1995. The process follows the principles of openness, transparency, balance of interest, due process, an appeals process, and consensus and is consistent with the manner in which federal, state and local laws are developed and finalized.

*What process is in place for all stakeholders to participate in the creation and maintenance of the code, while preventing abuse?*

The code development procedures of the ICC provide for creation and maintenance of the I-Codes and prevent abuse of the process. Anyone can submit a code change proposal, make a public comment and participate in the debate on any change. A Committee for each code, with a balance of members representing general interests, users of the code and producers, considers all views expressed at an initial public hearing and then votes to recommend the disposition of each code change at the hearing. Anyone at the hearing can challenge the Committee recommendation on any code change and secure a vote of the ICC members present from state and local government. Evidence of the committee vote on each change, with reason, is documented and published along with any challenges to each change. The results of this first hearing are then considered at a second hearing at which time anyone can testify and at which the voting members of ICC representing state and local government vote on the final disposition of each code change. The results of this second hearing decide what is included in the new edition of each I-Code (every three years) or the Supplement to an I-Code (in the middle of the three-year cycle).

*Can the results of the code change process be appealed?*

Yes. Anyone can appeal an action or inaction of a code committee. The ICC Board of Directors will hear the appeal and render its decision based on whether due process was served.
Is there a way for interested parties to influence the processes by which the I-Codes are developed?

Yes. The processes that govern code development are influenced by all interested and affected parties represented by an ICC Industry Advisory Committee (IAC). The IAC membership is comprised of over 80 industry organizations. Since its inception almost 10 years ago the IAC has made many recommendations that have enhanced the code development process.

What about activities beyond the code development process?

Beyond the development of the I-Codes, the ICC also provides opportunities for participation in the development and implementation of the I-Code support infrastructure (code commentaries, education and training, evaluation services, etc.) by all in the building community.

How many code development hearings occur annually?

There are two code hearings every 18 months, consistent with the 18-month cycle for the review and revision of the I-Codes.

How many code development hearings are held concurrent with one another?

None. Code hearings are held in one location and occur sequentially. There are two hearings during an 18-month code change cycle. The first hearing lasts about seven days and the second hearing lasts about four days. To fully participate, a participant in the ICC process need only travel to the location of each hearing.

What is the cost for code officials to participate on a code change committee?

None. The ICC fully funds the associated costs for the public safety officials who participate on code change committees. The employing jurisdiction contributes only the labor cost associated with participation.

What are the costs associated with participation in the code development process?

There is no charge to participate in the code development process. There are manpower and travel costs involved in participating in these hearings, but the support information, schedule, location, and other activities related to the process are executed to minimize expenditures of such resources. As noted above there are only two hearings every 18 months. Considering the costs for a federal, state or local agency to develop their own code, the investment to participate in this process is far more cost effective. Additionally, most code committee members utilize the benefit of free travel afforded by committee service to attend additional days of code hearings thereby representing their jurisdictions relatively inexpensively.
What process is in place for coordinating sections and resolving conflicts between the different I-Codes?

The ICC has a Code Correlation Committee to ensure certain sections that appear in more than one I-Code are coordinated. Each code change is assigned to a committee and staff member responsible for each particular code document. In most cases there is one committee per code, although some codes, such as the International Building Code and International Residential Code, have more than one committee and more than one staff support person; each responsible for certain technical areas in the code.

How are technical issues that cross multiple I-Codes addressed?

An ad hoc committee may be established by the ICC Board of Directors to address specific technical subject areas and to submit code changes to address them (e.g. enhanced treatment of hydrogen in the ICC codes). This process ensures that there is coordination on input to and action on the I-Codes where a particular issue needs to be addressed.

Are cost and affordability addressed in a review of changes to the I-Codes?

Yes. Proponents are required to identify the cost impact of any change they submit to the I-Codes and those participating in the code change process will address this issue as warranted during the debate and consideration of the disposition on each change. In addition the International Residential Code has affordability in its scope to address the importance of that issue with respect to home ownership and safety.

To what degree is performance based design addressed in the I-Codes?

The ICC publishes the ICC Performance Code for Building and Facilities. This document forms the basis for approval on the basis of performance. In addition all I-Codes have a section in Chapter 1 of the code that provides for the acceptance of any design, material, product, etc. as long as it can be shown on a performance basis to meet the intent of the code.

Can you demonstrate that the ICC codes meet minimum life safety needs consistent with accepted standards of engineering, fire, and life safety?

The term “minimum life safety needs” is difficult to define or quantify. Infrastructure and support of the Code are key to the administration of an effective building safety system.

Each jurisdiction must define those needs in terms of loss of life, property and economic impact that they are willing to accept due to a natural or man-made disaster. Any code developer, builder, architect, engineer, or other entity would have a difficult time quantifying how to approach and then address this question. In addition, the question focuses only on the code text itself. The degree to which any code is supported and capable of being implemented and enforced will also affect life-safety. The ICC prefers to focus not just on the code but also on an entire code program.
Consider a code with an extremely high “bar” for life safety that has no support infrastructure and cannot be readily understood, implemented and enforced compared with a code that has a robust support infrastructure and, while maybe having a slightly lower “bar,” can be readily understood, implemented and enforced. Given the same building project in two localities, each of which falls into the above scenarios, there is a greater probability that the latter building in actual practice provides a greater degree of life safety. For this reason the ICC considers the above question relevant but of greater depth than just the code itself – it must include consideration of an entire code program.

Given that preface, the ICC can use U.S. history and the current situation regarding code adoption to address this question. The United States has the highest standard of building safety in the world. ICC’s founders have a rich history of collective experience in developing model building codes and assisting with their deployment, implementation and enforcement. The ICC’s success in helping federal, state and local agencies protect the public is based on a proven system of code development that incorporates expertise and opinions from every arena, ensuring the very best in building safety regulations. The I-Codes are comprehensive, coordinated and contemporary. The I-Codes are also supported by an infrastructure that ensures they can be readily understood, applied and enforced.

The International Codes are proven codes. Based on the legacy codes developed by BOCA, ICBO and SBCCI, now ICC, these codes have a history of being the clear choice for the protection of property and lives. Virtually every state or local agency in the U.S. that has adopted building construction regulations has relied on the ICC and the codes of the above organizations. Since the publication of the 2000 I-Codes, many of those state and local agencies have adopted the I-Codes, and others are in the process of adopting them or are initiating the process of adoption. Virtually all those who have not adopted the ICC codes use one of the legacy codes of the above three organizations. If the bulk of the communities in the U.S. have adopted these codes, and the number of deaths per thousand population has decreased over the course of the 20th century, then it clearly supports the fact that the I-Codes meet minimum life safety needs consistent with accepted standards of engineering, fire, and life safety. The voluntary nature of code development and adoption in the U.S. suggests that the I-Codes, their predecessor codes and their support infrastructure have the unparalleled degree of adoption and use that they are the accepted standards of engineering, fire and life safety and meet minimum standards established by those adopting and using them.

What changes were made between the 2003 and 2006 editions of the I-Codes and why?

There were many changes made between the 2003 and 2006 edition of the I-Codes. The specific changes are covered in separate documents available from the ICC. The reasons for those changes are provided with each proposed code change but would generally include the following: acceptance of new building technology, enhancement of public safety, improvements in administration and enforcement of the code, elimination of requirements found to lead to problems in buildings or their systems, and furtherance of the goals and objectives stated in the codes.
**Code Availability**

*When were the I-Codes available?*

The 2006 I-Codes are available now. New editions of the codes are published every three years about five months after the second of the two hearings in which the provisions of the new code are finalized. In the middle of this three-year cycle a supplement to the then current edition of the I-Codes is published containing all the approved changes to that code during the first 18-month code change cycle.

*What other codes and standards are referenced in the I-Codes?*

A list of all codes and standards referenced in all ICC codes is provided within the code itself. These are referenced based on the need to provide a complete building regulatory program through the I-Codes. The I-Codes identify the scope of the reference and, where needed, integrate the extent to which the other document is referenced within the I-Code family.

*Of the standards referenced in the I-Codes, how many must be used to establish compliance with the code?*

All standards referenced in the I-Codes would be required. The scope of use and intended application of the standard is stated at the point in the code text where each standard is referenced.

*Do those adopting and using the I-Codes need to secure copies of all the reference standards?*

Technically yes because via their reference in the code they are a part of the code. In order to fully address public safety and implement and enforce the code the reference standards should be on hand.

*How much will it cost to secure copies of these standards and how does that compare to the cost of the I-Codes?*

The cost to secure copies of all the referenced standards is considerable and on the order of 25 times the cost of the codes. While some building departments may not feel it necessary to secure copies of all reference standards the ICC is working with standards developers to facilitate their availability. To reduce costs associated with securing reference standards the ICC has separate agreements with two of the standards organizations, UL and ASTM, that permit ICC to compile and publish each of these organization’s referenced standards as stand alone documents. These two documents cost on the order of $300 and compare with a cost of over $10,000 to purchase the standards separately.
Commentaries and Other Handbooks

What publications, handbooks, and manuals are readily available from the ICC and what are their costs?

The ICC has a wide range of publications, commentaries, handbooks, and other documents available in a wide range of media. A list of those is available on the ICC web site as well as being included in a Publications Catalogue.

Does the ICC publish comparisons of new and previous codes?

Yes. Soon after the publication of a new edition of the I-Codes manuals, presentations and other resources are made available that outline the differences between the earlier edition and the new edition of the I-Codes. These documents assist those who are familiar with the earlier edition to understand and implement the new edition using their current knowledge base as a foundation.

Does the ICC publish comparisons of the I-Codes and the model codes of the MCOs?

Yes. These assist with the transition from the previous legacy codes of the MCOs to the new I-Codes.

Does the ICC have commentaries to explain the code requirements?

Yes. The ICC provides commentaries that explain the requirements in the I-Codes, how to apply the code requirements and background information on the derivation of the code requirements needed to facilitate plan review and construction inspection and approval. As an example, the commentary on the International Building Code provides application examples, code development history, and explanatory material in two volumes of over 1700 pages.

Are staff available to augment the use of these documents?

Yes. As noted above staff are available to assist with the application and use of the I-Codes.

Professional Development

What “hands on” training courses are available and how often are they provided?

The ICC has more than 150 courses available covering a wide range of technical topics associated with the codes as well as topics associated with the legal and administrative nature of codes, information technology, code enforcement, etc. They are provided on a regular basis as requested by state and local government or ICC chapters and targeted to entry-level, intermediate-level and advanced levels. They are also offered in conjunction with the ICC Annual Business Meeting and an Educational Conference held each year by the ICC.
Where is there a list of the training courses available?

A list of available “off the shelf” training courses is available on the ICC web site. If there is a topic of interest that is not shown on that list the ICC should be contacted to discuss development of the needed training program.

What are the delivery mechanisms for ICC educational programs?

The ICC educational programs are offered in-person, on-line and via telephone.

Are there ways to secure training at no cost?

The ICC is committed to providing all of its members the high quality of services they have come to expect from the MCOs and will continue to provide free code update/transition training for state agencies and local officials through the ICC chapter program.

What is the ICC chapter program?

The ICC chapter program provides for free training in conjunction with ICC chapter program for building code officials as well as fire officials and professional organizations that are members of an ICC chapter.

Are training courses available through local Junior Colleges and/or third parties?

Yes. For instance, Red Rocks Community College in Colorado is a partner of ICC. This college provides a certificate program and/or associates degree online with an emphasis in code enforcement. An earned degree articulates to the University of Phoenix (Arizona) Online for a Bachelor of Science in Management. Many other community colleges throughout the country offer code specific academic and professional development courses. A list of those with which ICC is familiar is available at the ICC web site.

What training services are available on line and what do they cost?

The ICC features over 90 interactive and self-instructional online courses. These courses address code specific and non-technical subjects.

Many jurisdictions utilize the campus for in-house training purposes. ICC staff can tailor these materials to meet state and local needs, saving the agency time and money. The availability of on-line training services and their cost can be found at www.icccampus.org.
How are ICC training programs linked to ICC personnel certification programs?

Training and other professional development services are not directly linked to personnel certification (covered below). One should use the ICC training resources and then in seeking certification, as a building official would have to successfully complete a separate, objective examination.

ICC does not “teach to the test”. All the courses and seminars offered by the ICC are collectively excellent knowledge. ICC does, however, offer certification exam practice courses. These practice courses are primarily on the ICC on-line campus and include a timed simulated exam.

Are ICC trainers and staff qualified and how does the ICC ensure their continued qualification?

The ICC instructors have education and experience backgrounds that are appropriate for the training they provide and must team-teach before teaching alone. Instructors have professional certifications in the areas in which they teach (e.g. structural engineering, mechanical engineer, etc.) and all have experience in code enforcement. Many are P.E.s, architects and Certified Building Officials. ICC staff includes five curriculum developers who focus on development of educational materials. Similarly staffs that provide interpretations are those who work on code development and application and have professional expertise in those areas. If desired ICC can provide a copy of the resumes and professional affiliations and licenses for all ICC staff involved in training and technical support services. ICC can also provide a list of state and local agency references that have used these services and can attest to their qualifications.

Personnel Certification and Licensure

What types of certifications do you offer (e.g. building, mechanical, electrical, etc.)?

ICC offers national certification in 54 categories, which include all of the principal code administration professions. This includes certifications for: Residential Inspection, Commercial Inspection, General Plans Examiner, Energy Inspection/Plans Examiner, Fire Inspection, Code Enforcement, Special Inspector, General Inspection, Code Official and Building Official and Master Code Professional.

ICC also offers a comprehensive national contractor testing service which is recognized by state licensure agencies throughout the country for regulation of building contractors and various construction trades. This includes a nationally-recognized series of examinations which are used for regulating the installation, maintenance and decommissioning of underground petroleum storage tanks.

What is the length of validity of a certification?

The ICC certificates are valid for three years and must be renewed through providing evidence of participation in relevant Professional Development activities. After three years they become inactive and then after six years from issuance they would be dropped if not renewed. For
renewal of ICC certificates, ICC recognizes the professional development training provided by any accredited college, or by any nationally-recognized codes or standards agency.

**What is the cost to keep an ICC certification current?**

Certification fees may change periodically. Please visit [www.iccsafe.org](http://www.iccsafe.org) for a current certification fee schedule.

**How does the length of certificate validity coincide with the code development cycle?**

As the code development cycle results in a new code being published every three years, anyone participating in the certification renewal program may show their proficiency with the new edition of a code as an element of renewal.

**How would states use this program to address any personnel certification rules or regulations they have?**

State and local agencies that are required to develop and implement certification or licensure programs must establish local criteria for certification, re-certification, and licensure. The ICC certification and licensure programs are intended to serve these needs where appropriate. The ICC provides additional state-specific examination services for many state agencies that are used to augment state recognition of ICC’s nationally-standardized examinations.

**How many certifications have been issued?**

Since 1973, the ICC and its statutory members (BOCA, ICBO and SBCCI) have administered over 500,000 licensure examinations and professional certifications. Approximately 60,000 individuals maintain one or more ICC professional certificates.

**How will the ICC provide reciprocity with respect to certifications previously issued by the statutory members of the ICC?**

The certifications of code officials issued by BOCA, ICBO, and SBCCI were transitioned into ICC in February 2003. Individuals who were not current with their previous certifications have up to six years to become current under ICC’s certificate renewal requirements. Currently-certified individuals receive new ICC certificates on their next (triennial) renewal date, and are included in ICC’s National Registry.

**When certified how does the ICC disseminate the results of successful candidates?**

The ICC has the only comprehensive National Certification Program and National Registry for code officials. Individuals who maintain their ICC professional certifications may be verified on ICC’s website. This program helps to assure ongoing knowledge, proficiency and professionalism of construction personnel.
How does the ICC provide testing for certification and recertification with respect to local testing centers, mail or on-line testing, and other options if available?

Paper-pencil testing is available on request on six national testing dates per year that are set up throughout the U.S. Computer-Based testing is available daily (6 days/week) at professionally-staffed testing facilities located in over 300 cities throughout the U.S. The ICC will also assist with the special needs of any state or locality to address any further needs they may have that are not currently addressed.

Can localities and others purchase ICC certification exams for their own administration?

No. ICC exams are only administered by professional testing staff who are directly employed and supervised by ICC or its agents. To ensure the ongoing integrity and security of its programs, ICC’s certification and contractor examinations are not available for purchase for separate administration by other agencies.

Should there be any concern that ICC publishes the I-Codes and also implements a contractor certification program?

No. ICC’s contractor exams are designed on unbiased, objective job analyses research focused on the knowledge, skills and abilities required for competent professional practice. The ICC contractor certification exams test on professional competence, and as such include content on a wide variety of codes and standards – including those that are not published by ICC. ICC’s examinations are developed and validated to nationally-recognized professional and legal standards using representative Subject Matter Experts of practitioners.

Who develops the ICC contractor certification exams?

Every question on every ICC contractor/trade exam is objectively validated by representative Subject Matter Experts of practicing contractors. Building officials and code inspectors also participate in this test validation process, but hold a minority voting interest in determining the technical content of these examinations.

Technical Services

How does the ICC provide same-day technical service?

Anyone can call in and talk with technical staff between 8:00 a.m. (EST) to 4:30 p.m. (PST) or send an e-mail to request assistance.

What are the procedures for interpretations to the I-Codes?

The ICC offers three types of interpretations: telephone, written staff and formal published interpretations. Over 100,000 telephone interpretations are provided each year. Approximately 5,000 informal written staff interpretations that go through an internal peer review before being sent to the requesting party are developed each year. Approximately 100 written interpretations
are issued each year that are a formal, published position of the ICC that would be developed with staff support through an ICC interpretation committee.

**How long does it take to get a code interpretation?**

Turnaround for a phone-in opinion or interpretation from ICC staff is typically within an hour of receipt but can take longer or even occur the next day depending upon the time it was received and staff availability. A request for a written interpretation from ICC staff receives a response in five days where a single response is appropriate. More complicated responses will undoubtedly take more time and the customer is notified of such. A request for a formal published position must go through balloting process involving appropriate ICC committees and takes about a month.

**Does ICC provide programs to assist users of the codes with review of building plans and specifications?**

Yes. The ICC provides a comprehensive fee-based program for review of plans and specifications for building departments, architects, engineers and designers. Such services are also available in the conceptual stages of project development to help identify code-compliance issues early on.

**Evaluation of Building Products**

**Why is evaluation relevant?**

If all building construction regulations could anticipate new building products, designs, technologies, etc., then they would contain specific and explicit provisions for their acceptance. Because codes and standards tend to lag technology development (e.g. they are developed after the technology matures), the acceptance of new technology must be based on equivalent performance with the intent of the adopted codes. Evaluation is relevant because it provides a way to accept new technology that is not specifically provided for in the codes.

**What is the basis for evaluation of building products?**

The provisions of the I-Codes form the basis for an evaluation along with referenced standards and other criteria available upon which to address the relative safety and performance of the subject product. Chapter 1 of each I-Code provides that any method of construction or material can be approved by the code official when it can be shown that what is proposed is no more hazardous nor less safe than that specifically provided for in the code.

**Who is involved in an evaluation?**

The entity wanting to use the alternative material or design, such as a designer, builder or manufacturer, must show that what they propose meets the code as outlined above (e.g. is equivalent to that which is specifically allowed by the code). The code official, through their approval authority, would have to develop the method by which they would adjudge equivalency
and then would have to review and assess the documentation provided by the proponent of the alternative. If found acceptable then the alternative could be approved.

**Does the ICC have a service to facilitate this process?**

Yes. The ICC Evaluation Service (ICC-ES), on behalf of proponents of building products, materials and designs and in support of those enforcing building construction regulations, issues evaluation reports covering the conditions by which those products, materials or designs can be approved.

**How does the ICC-ES function?**

The proponent of a building technology (product, material or design) provides ICC-ES with all the documentation that they feel documents code compliance for what is proposed. The ICC-ES staff, with assistance from a committee of code officials, reviews the documentation and issues a report that outlines the basis upon which the subject technology can be considered as meeting the code.

**What are the benefits of this ICC-ES program?**

In using the ICC-ES evaluation reports, the building department does not have to determine how it will evaluate the subject technology. In addition they can rely on the evaluation report rather than conduct the detailed analysis of all the test data, calculations and substantiating information that otherwise would be necessary as a function of the approval process. This allows the building department to do more with fewer resources, greatly enhance the public safety while concurrently facilitating the acceptance of new building technology and the resultant benefits associated with the technology.

**How many evaluation reports are available and where are they available and for how much?**

The ICC-ES currently supports over 1,500 evaluation reports. Published reports are available free and can be downloaded from the ICC-ES web site.

**Accreditation of Labs and Quality Assurance Agencies**

**What is testing laboratory and inspection agency accreditation and who provides it?**

Accreditation is a determination of the competence of laboratories and inspection agencies to perform specific tests and inspections. The International Accreditation Service (IAS), a subsidiary corporation of the ICC, provides accreditation of testing and calibration laboratories and inspection agencies. The accreditation criteria that are used by IAS are based on international standards that enable the test and inspection reports of its accredited entities to be accepted worldwide.
Why is accreditation of laboratories and inspection agencies important for code compliance?

Compliance with building construction regulations is based on approval by those administering and enforcing building codes. Such regulations frequently refer to test standards and require independent verification that products manufactured off-site meet certain requirements. Manufacturers cannot self-certify compliance and must therefore hire third-party testing laboratories and inspection agencies to perform these functions. Since approval of these test and inspection functions ultimately rests with those enforcing the code, having access to accreditation information on laboratories and inspection agencies on which regulatory authorities rely through IAS provides another tool to the building official on which to base enforcement decisions.

What does IAS do?

The IAS assesses and monitors testing laboratories to determine if they are competent to produce reliable and reproducible test data. The IAS also assesses inspection agencies to determine the effectiveness of each agency’s internal quality system and if the agency is competent to examine products, installations, plants, processes and services for conformance with requirements.

What are the qualifications of the IAS?

The IAS maintains a documented quality system conforming to ISO/IEC Guide 58, “Calibration and Testing Laboratory Accreditation Systems – General Requirements for Operation and Recognition.” The IAS is also addressing the transfer to IAS from its predecessor organization (ICBO ES) recognition by the International Laboratory Accreditation Cooperation (ILAC), the Asia Pacific Laboratory Accreditation Cooperation (APLAC), and the National Cooperation for Laboratory Accreditation (NACLA). These respective accreditation cooperations will fully endorse IAS programs.

Does IAS provide advantages to federal, state or local government agencies?

Yes. Governmental agencies do not have to develop, implement or maintain similar programs to identify competent laboratories and inspection agencies. Nor do these agencies have to subject themselves to the considerable cost and effort involved in establishing credentials for their own accreditation programs. The efforts of IAS on their behalf provides a common link between all federal, state and local agencies on this issue that, in the absence of IAS, they would have to build themselves, on an agency-by-agency basis.

Is there any trade impact attributable to IAS programs?

Yes. Through mutual recognition agreements and relationships with accreditation bodies and regulators in other countries, IAS makes sure that reports prepared by testing laboratories and inspection agencies accredited by IAS can be accepted in other countries. This facilitates acceptance of U.S. products in other countries, which affects the U.S. economy and the locations where the subject products are manufactured.
“The governmental consensus process has been used to develop building safety codes for decades. Local and state governments use this process to develop their own laws. It protects against the influence of special interests, ensures fairness, and makes the issue of public safety the final deciding factor. That’s why it works so well.”

Lynn Underwood, C.B.O.
Chief Building Official,
Arlington, County, VA

“The ICC process is a much more open process and allows for more public input than any other current process. That’s why I like it, because it’s easier to go to the ICC hearings and, as an individual code enforcer, make a significant impact on the codes.”

Jackie Gibbs
Chief, Marietta Fire Department, Marietta, GA

“BOMA members will be best served by a proven set of codes that are ready for adoption across the country: The International Codes.”

2002 BOMA Annual Convention

“The strength of New York State’s building, fire prevention and energy codes are a direct result of the active participation of our building and fire officials. By adopting the International Codes and the ICC governmental consensus process, we are assuring that the knowledge and experience of our building and fire officials will continue to benefit the ongoing development of our code.”

Dottie Harris
Assistant Secretary of State,
State of New York

“When I propose a code change at an ICC forum, I know what the results will be shortly after I have spoken. With the other code processes, I can be led to believe that I know the results, only to have those results later changed by another committee.”

Jim. W. Sealy, FAIA
Architect, Dallas, TX

“ICC follows a straight forward approach in the development and maintenance of their codes. The process is clear, consistent and conducted in an open forum that assures equal access for all interests.”

Jeffrey T. Inks
ASVP, Codes and Standards,
National Association of Home Builders

“…ICC’s model building code was developed primarily by the building officials and code enforcement officers employed by cities and counties. . . As public servants under the general direction of city/county managers, local building officials have as their primary concern the broad general interest of local governments and the citizens they serve.”

ICMA web site, posted May 2002
In response to America’s need for a single set of consistent construction regulations, the International Code Council® (ICC®) developed, through the governmental consensus process, the first set of coordinated and comprehensive construction and fire codes for use nationwide. Municipalities and states across America adopt and enforce the International Codes™.

ICC develops construction and public safety codes through the governmental consensus process. This system of code development has provided the citizens of the U.S. the highest level of safety in the world for more than 80 years.


The following principles govern ICC’s governmental consensus process:

OPENNESS:
- Participation in the development of the codes, including code hearings, is open to all at no cost.
- Anyone can submit a code change proposal or make a public comment.
- Code committees must consider all views before voting.

TRANSPARENCY:
- Final decisions are made in an open hearing by public safety officials.
- Evidence of committee vote, with reason, must be documented.

BALANCE OF INTEREST:
- Committee members represent general interests, user interests, producer interests, or multiple interests. One-third of the committee’s members must be public safety officials.
- Committee members can not vote on issues that are a conflict of interest.
- Membership on a committee is not conditional on membership in ICC.

DUE PROCESS:
- A code change proponent has the opportunity to rebut opponents.
- Anyone who attends the hearing can testify.
- Committees are required to consider all views, objections and the cost impact of all code change proposals.

AN APPEALS PROCESS:
- Anyone can appeal an action or inaction of the code committee.
- ICC renders its decision on the appeal based on whether due process was served.

CONSENSUS:
- Committee members vote to approve the code change, make modifications to it, or vote against it.
- A simple majority from the committee decides the action of the proposed code change.

THE INTERNATIONAL CODES:
- are innovative and coordinated.
- cannot be influenced by vested financial interests.
- are efficient and effective.
- are developed through the efforts of public safety officials.
- are up-to-date and state of the art.
- are revised every 18 months and new editions published every three years.
- are economically viable and practical.

GOVERNMENTAL CONSENSUS PROCESS:
- leaves the final determination of code provisions in the hands of public safety officials who, with no vested financial interest, can legitimately represent the public interest.
Introduction to Model Codes

Concern for safety in buildings has been recorded in the laws of some of the most ancient civilizations. The regulation of building construction in the United States dates from the early settlement of North America. Construction laws developed and became more complex as the surrounding cities grew and experienced the threats and consequences of disease, fire and structural collapse.

In the early 1900s, special interest groups, such as the insurance industry (which was concerned with the mounting losses of life and property due to fire), joined others with similar concerns to develop a model law, or guide document, that could be adopted by a legislative body to reduce those losses. The result was the development and production of a model code that was offered to states and local governments for their voluntary enactment as law. The model code was promulgated by the National Board of Fire Underwriters, later to become the American Insurance Association, and was intended to be a foundation on which the legislative body could create its own regulations. The document, or any portion thereof, could be adopted by a specific reference to it in the legislation based on the perceived needs of that legislative body. Similarly, the legislative body could, in the preparation of the law, designate the application of the code to a certain class or classes of structures or to certain building uses. The model code was simply a document that a legislative body could utilize to the extent that they found necessary or desirable.

This first model code gained widespread popularity among legislative authorities by providing an accessible source of comprehensive, contemporary and respected technical requirements without the difficulties and expense of investigation, research, drafting and promulgation of individual local codes. Additionally, at approximately 10-year intervals, a new edition of the model code was produced. This allowed governments to reflect current construction technology and keep their building code requirements up to date.

Beginning in 1915, code enforcement officials, or those municipal officials charged with the responsibility of enforcing building code laws, began regular regional and national meetings to discuss their common problems and concerns. From these meetings came the formation of three organizations of code enforcement officials: Building Officials Conference of America, now known as Building Officials and Code Administrators (BOCA) International, Inc.; International Conference of Building Officials (ICBO); and Southern Building Code Congress International, Inc. (SBCCI). These three organizations created the International Code Council (ICC).

While legislative bodies are not obligated to adopt a model code and may write their own code or portion of a code, studies conducted by the federal government have indicated that more than 97% of U.S. cities, counties and states that adopt codes choose building and fire codes created by the three building safety groups that make up the ICC. BOCA, ICBO and SBCCI have more than 190 years of collective experience developing codes. ICC Codes are used across America and around the world. A code has no legal standing until it is adopted as law by a legislative body. When it is adopted as law, the code’s original formal status is restricted to the geographic boundaries of that legislative body’s political jurisdiction. All owners of property within the boundaries of the jurisdiction are required to comply with the enacted building code.

In cases where a code has not been adopted in a jurisdiction, the codes have assumed an authoritative status for building designers. Engineers and architects are licensed by the state to practice their profession and have a duty to be aware of the building features and elements that are a threat to the public and to the building user. The codes, then, are utilized by design professionals for their design in such geographical areas, even though the codes may not be universally adopted as law.

Building Codes

The regulation of building construction in the United States is accomplished through a document known as a building code. This document is adopted by a state or local government’s legislative body, then
enacted to regulate building construction within a particular jurisdiction. A building code is a collection of laws regulations, ordinances or other statutory requirements adopted by a government legislative authority involved with the physical structure and healthful conditions for occupants of buildings. The purpose of a building code is to establish the minimum acceptable requirements necessary for protecting the public health, safety and welfare in the built environment. These minimum requirements are based on natural laws, on properties of materials, and on the inherent hazards of climate, geology and the intended use of a structure (or its “occupancy”).

The primary application of a building code is to regulate new or proposed construction. Building codes only apply to an existing building if the building undergoes reconstruction, rehabilitation or alteration, or if the occupancy of the existing building changes to a new occupancy as defined by the building code.

The term “building code” is frequently used to refer to a family of codes, such as the International Codes, that are coordinated with each other to address specific scopes of technical application. This set of codes generally consists of four documents: a building code, a plumbing code, a mechanical code and an electrical code.

**Why Have a Building Code?**

**Codes protect public health, safety and welfare**
- Building codes provide protection from tragedy caused by fire, structural collapse and general deterioration in our homes, schools, stores and manufacturing facilities.
- Safe buildings are achieved through proper design and construction practices and a code administration program that ensures compliance. Home and business owners have a substantial investment that is protected through complete code enforcement.

**Codes keep construction costs down**
- The International Codes provide uniformity in the construction industry. This uniformity permits building and materials manufacturers to do business on a larger scale — statewide, regionally, nationally or internationally. Larger scale allows cost savings to be passed on to the consumer.

**Codes provide consistent minimum standards in construction**
- Codes establish predictable and consistent minimum standards, that are applied to the quality and durability of construction materials, a practical balance between reasonable safety, and cost to protect life and property. The term “minimum requirements” means that construction meets the criteria of being both practical and adequate for protecting the life, safety and welfare of the public.
- Inspection during construction is the only way to independently verify that code compliance has been achieved. An average of 10 inspections are conducted to homes, offices or factories to verify conformity to minimum standards.

**Codes contribute to the well-being of the community**
- The preservation of life and safety, as well as the maintenance of property values over time, are a direct result of the application and enforcement of model building codes.
- The conservation of energy contributes to intelligent use of resources and provides the consumer with cost savings.

**Local and State Codes**

Development of local and state codes varies considerably in degree and procedures. Almost all local and state codes in America are based on the International Codes or model codes, particularly for engineering provisions.
State codes can be developed in a variety of ways. Some states adopt a particular edition of a model code, leaving administrative matters to local jurisdictions. Others start with a model code and revise and administer a separate code only for state-funded buildings. Still others may require a special code for certain occupancies, such as schools and assembly buildings.

Local codes also are diverse in the extent to which the base model code is amended. Most local amendments are limited to administrative provisions, which are subject to change to meet other local regulations regarding implementation of ordinances. Engineering provisions are among the least amended, with a common reason for amendments related to unique site conditions that affect foundation design or applied wind and snow loads.

There are still large cities that have had the advantage of a large professional population willing and able to provide advice on customizing nationally recognized codes and standards for local use. The list of these cities shrinks each year as the International Codes and national standards become more detailed in scope.

Local and state amendments to technical provisions in International Codes and national standards should be avoided and opposed in every case. A concern with a provision thought to be incomplete or improper should be addressed through the code development process and procedure made available to all by the International Code Council.

**Involvement by Technical Organizations**

Many representatives of professional organizations participate in codes and standards activities at local, state and national levels. Most of them will have members that also hold national membership, which presents an opportunity to promote the support of model codes and national technical standards.

Trade associations that represent suppliers of construction materials are another type of organization most likely to have significant participation in all codes and standards activities.

**Standards**

A standard is “a prescribed set of rules, conditions or requirements concerned with the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, design or operations; descriptions of fit and measurement of size; or measurement of quality and quantity in describing materials, products, systems, services or practices.” There are thousands of standards in existence, dealing with an endless array of consumer products, manufacturing methods, quality of materials and procedures for various operations and processes. Of concern to the model code process are those standards that play a key role in institutionalizing construction practices and procedures across the United States. A standard, in conjunction with a criterion that is the quality or quantity required by the building code as measured by that standard, can simplify the model code text and utilize the considerable expertise of those participating in specialized standards-writing activities.

Any group of manufacturers, associations, consumers, users or agencies can cooperatively develop a standard for its own purposes and reasons. Only when the standard is developed in accordance with definitive rules of procedure and consensus does the standard obtain the stature appropriate and necessary for regulatory use in model codes. Additionally, a standard to be utilized by a model code must measure quantity or quality appropriate for regulation by the code.

For various reasons, an owner may utilize a standard and specify a criterion for performance of a building element over and above that which the applicable code requires. This is common and reflects a key fundamental aspect of a model code—a statement of minimum performance requirements and characteristics, with the protection of the public health, safety and welfare as its primary intent.
**Referenced Standards**

Since not all standards are intended to be utilized by a model code, a model code must state the standards which are applicable and also when they are applicable. This is accomplished through a specific reference in the code to a given standard which clearly identifies when and how the standard is to be utilized. For example, a code will require that a building element be able to perform to a certain criterion and then reference a standard for use in measuring the performance of any proposed system intended to accomplish that performance.

The International Code Council has established a policy governing referenced standards that requires such standards to comply with the following requirements:

1. The need for the standard to be referenced shall be established.
2. A standard or portions of a standard intended to be enforced shall be written in mandatory language.
3. The standard shall be appropriate for the subject covered.
4. All terms shall be defined when they deviate from an ordinarily accepted meaning or a dictionary definition.
5. The scope or application of a standard shall be clearly described.
6. The standard shall not have the effect of requiring proprietary materials.
7. The standard shall not prescribe a proprietary agency for quality control or testing.
8. The test standard shall describe, in detail, preparation of the test sample, sample selection or both.
9. The test standard shall prescribe the reporting format for the test results. The format shall identify the key performance critical for the element(s) tested.
10. The measure of performance for which the test is conducted shall be clearly defined in either the test standard or in code text.
11. The standard shall not state that its provisions shall govern whenever the referenced standard is in conflict with the requirements of the referencing code.
12. The preface to the standard shall announce that the standard is promulgated according to a consensus procedure.
13. The standard shall be readily available.
14. The standard shall be developed and maintained through a consensus process such as ASTM or ANSI.

The model codes place great reliance on the use of standards produced in the private sector. Each standard is specifically identified in the code text with the manner and scope of required conformity to the standard. Assume, for example, that the code requires a reinforced concrete structural element to be designed in accordance with the ACI 318 uniquely identifies the standard *Building Code Requirements for Reinforced Concrete*, which is published by the American Concrete Institute (ACI). This standard is also listed in the code as one of the referenced standards.
A code-referenced standard may, and frequently does, reference other standards which are intended to be used in conjunction with the primary standard. References to a secondary standard by another standard are acceptable, provided that all such references are unambiguous and clearly reflect the requirements for code compliance. Similarly, the secondary standard may contain a reference to another standard. This tiered system of standards usage has proven very effective in accomplishing the use of relevant standards while minimizing confusion and the need to duplicate the effort expended by participants in the voluntary standards-writing processes.

Standards referenced in this tiered manner are regulations which are as binding as if all of the standards’ test were to appear word-for-word in the code text itself. If all of the standards that are referenced in the code and applicable through standards references were to be reprinted and appear in the code, the code would be several thousand pages in length. The advantage of this manner of utilizing referenced standards is that the code is kept to a volume that is manageable, concise and up-to-date.

In summary, a code will specify the use of a standard to define the measurement of a performance feature of a building element or system. A specified and referenced standard, in conjunction with a code-established criterion, defines the performance level required by the code as measured by the standard.

**American National Standards Institute (ANSI)**

ANSI is a private, not for profit membership organization founded in 1918 to coordinate the development of voluntary standards in the United States. It was founded by five professional and technical societies and three agencies of the federal government.

The role of ANSI is to encourage development of standards and develop procedures that provide criteria, requirements and guidelines for coordinating and developing consensus for American National Standards. The goal is the development of a single, consistent set of national voluntary standards by a variety of technical groups, trade associations and professional societies. ANSI does not develop the standards it accepts, however. The writing of the standards is done by accredited standards developers, such as American Society of Civil Engineers (ASCE), American Society for Testing and Materials (ASTM), American Welding Society (AWS), American Society of Mechanical Engineers (ASME), National Fire Protection Association (NSPA) and Underwriters Laboratories Inc. (UL).

Many of these standards are referenced in building codes. The private-sector standards system, however, is much father reaching than building codes. ANSI lists more than 10,000 approved standards promulgated by more than 260 accredited standards developers. Such standards are used extensively for design, manufacture, application and procurement.

**Conclusion**

The construction code system in the United States relies on the voluntary cooperative efforts of those persons and organizations within the private sector of the construction community. All of the organizations have developed a model comprehensive regulatory system that is legally responsive to both public needs and technological developments. The standards system in the United States and the use of standards in model codes places the cumulative scientific, engineering and industrial knowledge of the United States at the fingertips of participants in the construction community. The code enforcement official accepts with confidence the measurement methods and practices dictated by these standards. Code enforcement officials can then direct their attention to the criteria for application of these standards to accomplish the objectives of the code to enhance and preserve the public health, safety and welfare in the built environment of the United States.
who needs building codes?

We all do — whether in our homes, offices, schools, stores, factories, or places of entertainment. We rely on the safety of structures that surround us in our everyday living. The public need for protection from disaster due to fire, structural collapse, and general deterioration underscores the need for modern codes and their administration.

HOW RELIABLE ARE THEY?

Most aspects of building construction — electrical wiring, heating, sanitary facilities — represent a potential hazard to building occupants and users. Building codes provide safeguards. Although no code can eliminate all risks, reducing risks to an acceptable level helps.

WHAT IS A BUILDING CODE?

Practically, it is the government’s official statement on building safety. Technically, it is a compendium of minimum safety standards arranged in a systematic manner (codified) for easy reference. It embraces all aspects of building construction — fire, structural, plumbing, electrical, and mechanical.

WHAT IF I WANT TO DO A BUILDING PROJECT MYSELF?

Building departments have pamphlets and brochures explaining, in detail, how to obtain permits and design and construct a safe building. Inquire within your local community.

WHY SHOULD CODES APPLY TO MY OWN HOUSE?

For several reasons:
- For your personal safety, and that of your family, and the guests invited into your home.
- To ensure the economic well-being of the community by reducing potential spread of fire and disease.
- For the conservation of energy.
- To protect future home purchasers who deserve reasonable assurance that the home they buy will be safe.

Local building departments provide a wide range of services beyond the usual plan review and building inspection process. These range from the administration of planning or zoning laws to housing maintenance inspection, nuisance abatement, and a number of other related or ancillary duties. Visit your local building department and get acquainted with the people who make it work.

For more information about building codes and local requirements, contact your local building department below:

REF 11-05-141
The regulation of building construction is not a recent phenomenon. It can be traced through recorded history for more than 4,000 years. Through time, people have become increasingly aware of their ability to avoid the catastrophic consequences of building construction failures.

In early America, George Washington and Thomas Jefferson encouraged the development of building regulations to provide for minimum standards that would ensure health and safety. Today, most of the United States is covered by a network of modern building regulations ranging in coverage from fire and structural safety to health, security, and conservation of energy.

Public safety is not the only byproduct afforded by modern codes. Architects, engineers, contractors, and others in the building community can take advantage of the latest technological advances accommodated by these codes with viable savings to the consumer.

For codes to be effective, an understanding and cooperative relationship must exist between building officials and the groups they serve — homeowners, developers, urban planners and designers, and others in the construction industry. Codes must therefore be responsive to the government's need to protect the public. They must provide due process for all affected and keep pace with rapidly changing technology. These communities can work together to develop and maintain codes.

During the early 1900s, model building codes were authored by the code enforcement officials of various communities with key assistance from all segments of the building industry. Now, model codes are the central regulatory basis for the administration of programs in cities, counties, and states throughout the United States. They simply represent a collective undertaking, which shares the cost of code development and maintenance while ensuring uniformity of regulations so that the advantages of technology can be optimized.

Building safety code enforcement has historically been accomplished by defraying the costs of administration through a system of fees relating to a specific project — a system that is self-supporting. These fees are generally less than one percent of the overall cost of the building project. Public protection is thus obtained in a cost-effective manner with the entire process, from plan review to field inspection, carried out in a professional manner. The system is so well developed that the true complexity of the process is obscure to many. It is for the purpose of creating awareness of this important public service that this pamphlet is provided.

For further information, contact your local building department.
**The Simple Permit Process**

**Talk to Your Local Code Official**

Your code official wants your project to be a success and will help you avoid potential problems that could cost you time and money. You will be asked some basic questions: What are you planning to do? Where? Are you aware of any requirements, and, if necessary, referred to other departments for their approval. The code official will provide you with the resources and information needed for compliance with the applicable building codes. You will then receive an application for a building permit.

**Submit Application**

At this stage you will document the “Who, What, When, Where, and How” of the job, along with any sketches or plans of the proposed work.

**Review Process**

In a brief amount of time, the code official will review your plans and determine if your project is in compliance with local requirements. If your plans meet these requirements, a permit is issued. If not, the code official may suggest solutions to help correct the problem.

**Receive Permit**

Now that you have been approved for a permit, you have legal permission to start construction. A fee, based on the size of the job, is collected to cover the cost of the application, the review, and the inspection process. An experienced code official is available to you should you have any questions concerning your project. You should consider your code official as an ally who will help you make your project a success. Separate permits are typically required for electrical, plumbing, and heating or air-conditioning work.

**Job-Site Visits**

On-site inspections will be required to make certain the work conforms to the permit, local codes, and plans. Again, you will have access to the expertise of the code official to help you with questions or concerns regarding the project and to minimize potentially costly mistakes. The code official will let you know approximately how many inspections may be needed for your project. Usually, a one- or two-day notice is needed when requesting visits.

**Final Approval**

The code official will provide documentation when construction is complete and code compliance is determined. You will then have the personal satisfaction of a job done right. Enjoy your new surroundings with the peace of mind and the knowledge that they meet the safety standards in your community.

It takes everyone in a community to keep our homes, schools, offices, stores, and other buildings safe for public use. Your safe construction practices help protect you, your family, your friends, and your investment. Be sure to get your local code official involved with your project, because the building department is an important ally, from start to finish.

For more information about building codes and local requirements, contact your local building department below:

[For contact information, please refer to the original document.]
By reading this brochure you’ve already taken the first step toward protecting the outcome and investment value of your construction project and guarding against a lawsuit or injury. The following information describes simple steps you can take to obtain a building permit and how permits can work for you. You’ll be surprised at how easy the whole process is.

The truth is, building permits are very beneficial to you and your community. By working with expert code officials, you will benefit from their knowledge of building codes to ensure your construction project is built right, will be safe, and will last. Read on to discover the “Benefits of Building Permits.”

WHAT'S A BUILDING PERMIT?

A building permit gives you legal permission to start construction of a building project in accordance with approved drawings and specifications.

WHEN DO YOU NEED A PERMIT?

The best way to find out if you need a permit is to call your local building department. Discuss your plans with the code official before beginning construction to determine whether you need a permit. Even if a permit is not needed, the code official will answer construction questions and may provide valuable advice.

PERMITS ARE USUALLY REQUIRED FOR THE FOLLOWING:

- New buildings
- Additions (bedrooms, bathrooms, family rooms, etc.)
- Residential work (decks, garages, fences, fireplaces, pools, water heaters, etc.)
- Renovations (garage conversions, basement furnishings, kitchen expansions, reroofing, etc.)
- Electrical systems
- Plumbing systems
- HVAC (heating, ventilating, and air-conditioning) systems

Your home or business is an investment. If your construction project does not comply with the codes adopted by your community, the value of your investment could be reduced. Property insurers may not cover work done without permits and inspections. If you decide to sell a home or building that has had modifications without a permit, you may be required to tear down the addition, leave it unoccupied, or make costly repairs.

A property owner who can show that code requirements were strictly and consistently met—as demonstrated by a code official’s carefully maintained records—has a strong ally if something happens to trigger a potentially destructive lawsuit.

Your permit also allows the code official to protect the public by reducing the potential hazards of unsafe construction and ensuring public health, safety, and welfare. By following code guidelines, the completed project will meet minimum standards of safety and will be less likely to cause injury to you, your family, your friends, or future owners.
The Impact of Building Codes on Property Insurance

Purpose

The International Building Code and other International Codes can have a positive impact on property insurance. This paper will educate decision makers on how adopting the I-Codes can improve the cost and availability of property insurance for their communities.

Key Words

- Property loss reduction
- Reduced insurance costs
- Improved building safety
- Building code adoption, implementation and enforcement

Background

Natural disasters such as hurricanes, tornadoes, tropical storms, hail, earthquakes and wild fires can have a devastating effect on the built environment and the economy. Studies of various catastrophes graphically demonstrate that effective building code enforcement greatly reduces associated loss. According to Best’s Review, losses attributable to Hurricane Andrew would have been 30 to 40 percent lower if Florida communities had strictly enforced existing building codes. A study by Factory Mutual Insurance Group illustrates that effective enforcement of building codes in those affected Florida communities would have reduced damage to buildings by up to 55 percent.

Post-disaster assessments of many communities showed a direct relationship between building failures, the codes adopted, the resources directed toward implementation and enforcement, and the services available to support those codes. To reinforce this relationship between loss reduction and code adoption and enforcement, the Insurance Services Office, Inc. (ISO), working with the Insurance Institute for Property Loss Reduction (now the Institute for Business and Home Safety) and tapping the expertise of the three model code groups (now the ICC), developed the Building Code Effectiveness Grading Schedule (BCEGS) in 1995.

About the BCEGS

The purpose of the BCEGS is to review the available public building code enforcement agencies, and to develop a building code effectiveness classification for insurance information and rating purposes. ISO assesses building code adoption and enforcement activities in a particular community, with special emphasis on mitigation of losses from natural disasters. Communities
with well-enforced, up-to-date codes would be expected to experience a reduction in loss, and in
return, receive better insurance rates. This “better building/less loss” relationship provides an
incentive for communities to adopt contemporary codes and rigorously enforce them, especially as
the codes relate to windstorm and earthquake damage. The end result is safer buildings, less damage
and lower insured losses from catastrophes.

The BCEGS program assigns each municipality a grade or classification of 1 (exemplary
commitment to building code enforcement) to 10 (essentially no adopted codes). ISO develops
advisory rating credits that apply to ranges of BCEGS classifications (1-3, 4-7, 8-9, 10), and
provides insurers BCEGS classifications, BCEGS advisory credits and related underwriting
information. Insurers use these in assessing risk and applying rate credits. This program was
phased in over a five-year period, from 1996 to 2001. At present, all communities have been
graded. ISO has begun re-grading communities based on code adoption and implementation
activities that have occurred since the initial grading period.

A summary of the ISO classification and grading process is as follows:

• Each community is evaluated based on how it administers codes, reviews plans and
cconducts field inspections. Administration includes, among other things, whether the code is up-
to-date, resources devoted to training and certification of code officials, contractor licensing, and
records of code official certifications and training.
• Relevant information is provided to ISO by the code official. ISO field representatives
conduct an on-site evaluation and assign a classification of 1 to 10 to the community. If the
community has different codes and programs for different building types, a separate
classification can be issued for each building type.
• ISO files rate credits to be applied to loss costs for personal and commercial property
coverage in each community. Once state regulators approve or acknowledge the filings and they
become effective, insurers that have given ISO filing authorization can automatically apply the
credits.
• A community is reevaluated in five years, or sooner if requested, due to an enhancement
in their code program.

When ISO evaluates a community, the classification automatically applies to any building
receiving a certificate of occupancy on or after the date of classification. That classification
remains with the building regardless of what happens with any future re-classification.

Issue Identification

Because the insurance industry, communities and their elected officials, the construction industry and
the general public are all affected, the results of reclassification are critical. A community’s
classification or grade can be downgraded due to lack of initiative in adopting more contemporary
codes, the availability and use of comprehensive support services for those adopted codes, and how
they implement and enforce those codes. For example, one California community has reported that
lack of action regarding adoption of a new state building code was the key factor in their ISO
classification being changed from 3 to 7 during a recent reclassification. Such a downgrade adversely
affects construction, and in turn, the economy of
the community and its citizens. In a worst-case scenario, erosion in a community’s grade could shut down all new construction. In communities located in states with preemptive legislative authority to adopt building codes, the lack of action, or incorrect action, by the state affects each community on an individual basis, as well as the state at large.

The negative impacts of a higher (less exemplary) ISO grade or classification are:

- Increased risk of injuries and loss of life, property losses, and economic and social disruption from natural disasters.
- The loss of any possibility of insurance rate reduction on buildings constructed after the new classification.
- Loss of pride and decreased morale in the code enforcement department.
- Less support of state or local decision makers from the construction community and the public at large.

If a community or state has been enforcing an older model building code and has not yet adopted the International Building Code, it is at risk of receiving a higher grade or less desirable grade when reclassified.

Discussion

Clearly the insurance industry, construction community and state and local decision makers understand the link between loss of life and property, and the adoption, effective implementation and enforcement of construction codes. The BCEGS reinforces that link by rewarding communities that invest in a more robust building regulatory program, which is the focal point of this program and encompasses much more than the code that is adopted. It includes the entire program to support building safety – not on paper as evidenced by a code document but in practice as evidenced by safe, well-maintained buildings and the building department staff that enforce those codes on behalf of the elected officials and their constituents.

The importance of code provisions should not be minimized: codes must have sensible technical requirements, but also need to be usable, enforceable, cost effective, updated regularly, sensitive to acceptance of new technology, coordinated, reliable, trusted and based on a long history of success. The ISO process looks beyond the technical provisions of the adopted code to address all that takes place in the design, construction, inspection, approval and use of buildings. Given two scenarios – one with a code document that cannot be easily implemented and has no enforcement or support services, and another that can be easily implemented, has support services and is enforced; construction under the latter scenario is more likely to yield success. In short, the realization of safe buildings involves much more than simply looking at words in a code book and how they are developed.

For this reason the ISO process, and any other rational assessment of codes, is focused on the end result – safe buildings – and all code activities that can help achieve that end. This includes training and education for those in the related construction and code communities, certification of contractors and code officials, the level of plan review and construction inspection, the
availability of an evaluation program to facilitate the timely acceptance of new more effective building technology, a program to accredit testing laboratories and quality assurance agencies that play a vital role in code compliance, and all other activities conducted to ensure that code requirements are met at initial occupancy and throughout the life of the building.

All communities in the United States have been classified and rated by ISO and are now undergoing a re-classification process. As noted, a community’s grade is based not only on the code adopted, but on the many factors that influence building safety at occupancy and during its life. When considering updating existing codes, communities need to look not only at the code requirements but also the usability and coordinated nature of all the adopted codes. Communities also must consider the resources needed to implement and enforce the codes and the support services available to augment those local efforts. State agencies with preemptive authority to adopt codes need to consider these issues, actively consult with the communities in the state and adopt a code that will improve the classification of communities within the state.

Conclusions

• The Building Code Effectiveness Grading Schedule can influence adoption and implementation of building codes. It has a direct impact on new construction, as well as the potential loss of life, property and economic viability associated with natural disasters affecting the built environment of each community as well as each state and the nation.
• The grading or classification of a community is based on much more than the code adopted. To look only at technical requirements of existing codes and codes to be adopted excludes many other factors that will impact building safety and could adversely affect the grading of a community. Not upgrading to the latest codes has similar consequences.
• A community’s grading is also based on the usability of the code, the support services for the code and the ability of the community to enhance and maintain the professionalism and capabilities of those implementing and enforcing the code. The International Codes have an existing support structure, eliminating the need for each community or state to fund development and maintenance of that support structure.
• Building safety entails more than technical provisions in the code. The realization of a safe building is the result of a usable and understandable code, informed designers and builders, and capable and trained plan reviewers and effective field inspection by competent individuals supported by robust support services.
• Most communities in the United States that adopt codes use those developed and supported by the ICC. Those communities are more likely to retain or upgrade their existing classification by adopting the 2003 International Codes, with comprehensive support services to facilitate implementation and enforcement.
Consensus Codes—Does It Matter?

By Ron Nickson

Does the process an organization uses to develop its model building code matter? Is one method really superior to another? Should an apartment owner/developer care whether the codes being adopted are developed by government consensus, true consensus or an ANSI-approved process?

The short answer is yes. The method does matter, as much as the outcome. The entire issue centers on who gets to vote. To understand why, you need to understand the difference between the ICC’s “government consensus” method and the National Fire Protection Association’s (NFPA) process, which it calls “true consensus.”

Understanding the key differences between these code development methods is the first step to understanding why National Association of Homebuilders (NAHB), Homebuilders have chosen to support the ICC codes over the NFPA.

The Long Answer

In the ICC’s government consensus process, the final vote is controlled by public building and fire officials from local communities across the country. As impartial officials, they have no vested interest in any specific building product. Their primary concern is to identify the minimum standards necessary to safeguard the public’s health, safety and general welfare. Their day-to-day experiences provide them with first-hand knowledge of what is important and provides them with a better understanding of the true impact the building codes will have on their local community.

While the ICC relies on the code officials for the final vote, its two-step open hearing procedure allows anyone to speak for or against a proposal. In the first step, the ICC benefits from the collective expertise of code officials, industry representatives, and technical experts sitting on committees listening to testimony at hearings. In the second step, the committee recommendations are sent to the ICC code officials for ratifications and a final vote. This final vote serves as an unbiased filter for processing code changes. The committee recommendations can be challenged by anyone present for a floor vote. In a floor vote, every member, including the industry representatives present, is allowed to vote. A successful floor vote on a challenge to a committee recommendation creates, in effect, an automatic challenge to the try representatives present, is allowed to vote. A successful floor vote on a challenge to a committee recommendation at the final hearings.

Additionally, anyone can challenge a committee recommendation at the final hearings. Continued on page 6.

IAFF Members Pass Historic NFPA Standard

By George Burke

Less than a day after the overwhelming passage of the NFPA 1710 standard, International Association of Fire Fighters (IAFF) General President Harold Schaitberger buddled with the IAFF Executive Board and his senior staff to develop the union’s strategy for implementing the comprehensive standard on fire department deployment and operations.

More than 2,600 members of the IAFF voted in unison after the two-hour debate on 1710 at the NFPA annual meeting on May 16 in Anaheim, providing the votes needed to pass the standard by a decisive 10-to-1 margin. The last two speakers in the two-hour debate on NFPA 1710 were International Association of Fire Chiefs (ICHEFS) President Mike Brown and, finally, Schaitberger. It was Brown who made an impassioned call for passage and made the motion that triggered the immediate vote on final passage of the standard.

"On Wednesday, we passed a standard of historic proportions that will change the face of the fire service for decades to come. It leaves a legacy for current and future fire fighters. It makes our job safer, our fire departments better, and it will save lives of fire fighters and citizens we protect," Schaitberger told the IAFF Executive Board the day after the vote.

*Now, we must move forward to implement the standard in communities across North America.”

Schaitberger says implementation would be a multi-year process and he made it clear that the IAFF was prepared to work with fire chiefs, city managers, mayors, and other elected officials to achieve it. “It is time to forge ahead and work with everyone who will work with us to implement 1710,” he says.

Understanding 1710

The 1710 Standard for the Organization and Deployment of Fire Suppression, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments is a comprehensive guideline for the organization, operation, deployment, and evaluation of public fire protection and emergency medical services. The lengthy and comprehensive standard includes requirements for minimum four-person staffing, with five and six in high-density areas, four-minute response times for first due companies and eight-minute responses for full alarms, and two paramedics on all Advanced Life Support EMS calls.

In his final remarks at the NFPA meeting before closing, Schaitberger said, “We cannot wait for the 1710 standard to pass to get it in place. We must act now to ensure that our fire departments are prepared to meet the demands of the 21st century.”

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Consensus Codes continued from page 4

The final vote, however, is conducted only by the building and fire officials present. Items that are not challenged are voted as a block by the code officials at the final hearing. Items that are challenged are discussed at the final meeting and then voted on by the code officials. This system provides for participation by the apartment owners and developers, with multiple opportunities to challenge provisions and present data in support of their positions, with the final decision being made by impartial code officials.

Another View

In contrast, the NFPA’s true consensus is based on the American National Standards Institute (ANSI) procedure, which requires balanced committees with representation from the various interests. Though one doesn’t have to be a member to serve on a committee, the balanced committees require all dues-paying members to vote on issues, including members who have a vested interest in specific products. The NFPA process lacks the third-party building code filter of the ICC process. In addition, the NFPA procedures permit “instructed” votes, which means members can arrive at meetings with instructions on how to vote on issues without any consideration of the technical merit or discussion at the meeting.

With the exception of the committee responsible for developing the new NFPA building code, discussion at NFPA committee deliberations is controlled, and non-committee members are required to seek permission in advance to speak at a meeting. The chairman of the committee can, and in many cases does, use this rule to limit outside participation. In contrast to the ICC two-step process, in the NFPA process all proposals go first to the committee, and in many cases offset the installation cost of the sprinkler system. The ICC accessibility provisions have also been harmonized to comply with the ADAAG provisions.

The ICC codes include many provisions important to apartment construction. The most important are the sprinkler design options, including extra heights and areas, permitted with the installation of an NFPA 13R sprinkler system. They are very extensive and in many cases offset the installation cost of the sprinkler system. This is especially true in areas in which the ICC and ICBO building codes are now being used. The only design options permitted under these codes required the installation of an NFPA 13R sprinkler system, which costs about double that of an NFPA 13R sprinkler system. Many of the design options apply to small and large buildings and they will become increasingly important in the 2003 edition of the IBC where sprinklers will be required in almost all occupancy including all apartments.

The IBC provisions for open-end corridors resolve code issues concerning corridors designed with open exits continued on page 8

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The IBC provisions for open-end corridors resolve code issues concerning corridors designed with open exits continued on page 8
The IAFF dominated the meeting. IAFF District vice presidents, state presidents, and senior staff operated as whips on the floor, in a sophisticated operation that won praise even from the IAFF’s harshest critics. On every vote to amend or defeat 1710 and on the final passage vote, thousands of IAFF hands rose in the air in unison to stake out—and win—the IAFF’s position.

Following the vote on 1710, in an address to the IAFF members who came from every corner of the U.S. and Canada to support the standard, Schaitberger recalls, “I have never been so proud of this union and our members. We operated as a team. We called, you came, and because we are right on this issue, we were victorious.” The gathering of IAFF members in Anaheim set a record for the largest meeting of IAFF members at any event in the 84-year history of the union.

On the final day before the NFPA vote, Schaitberger, accompanied by ICHIEFs President Brown, took his tireless campaign for 1710 into the heart of the opposition, when he spoke with the Western Fire Chiefs, who were among the last holdouts against 1710. They also spoke at the meetings of many NFPA interest sections, laying out the IAFF’s reasons for promoting the breakthrough guidelines.

**Topic on Tour**

Well before arriving in California, the IAFF played a key role in the campaign for the new standard. The Anaheim vote was the culmination of more than six years of determined work by the International, hundreds of local affiliates, and thousands of rank-and-file members, to pass a comprehensive standard governing professional fire departments.

It was also the end stage of an IAFF strategy that was formulated last September to make sure that 1710 made it to the floor for a vote, and that the International mobilized as many votes as possible. With the full support of the entire executive board, the International dedicated significant resources to its multi-level campaign, and worked tirelessly to build internal support for 1710.

Last October, Schaitberger and General Secretary-Treasurer Vinnie Bollon hit the road for a six-city, five-state tour to promote 1710. In the wake of that tour, unprecedented numbers of fire fighters joined NFPA and made plans to attend the voting session. The IAFF’s strategy delivered more than 2,600 IAFF members as voting NFPA members.

The fight for 1710 also reflected an unprecedented level of unity among fire service organizations. Major fire service groups decided to join the IAFF in promoting 1710, including the ICHIEFs and the National Association of State Fire Marshals. The ICHIEFs’ Brown was a particularly strong voice in support of the standard and he won the approval of both the career and volunteer sections of the association that represents fire department management.

Unity was important because opposition to the standard came from organizations with deep pockets and anti-fire fighter agendas. A number of municipal government and other management organizations worked hard to kill 1710. They pulled out all the stops, including putting pressure on fire department managers to keep IAFF members from attending the NFPA meeting unless they pledged to oppose the standard. They also flooded the microphones of the non-voting section of the NFPA floor in a vain effort to delay the standard’s passage.

The IAFF strategy paid off. Schaitberger explained, “We have never been so proud of this union and our members. We operated as a team. We called, you came, and because we are right on this issue, we were victorious.” The gathering of IAFF members in Anaheim set a record for the largest meeting of IAFF members at any event in the 84-year history of the union.

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Natural Disaster Mitigation
By Cheryl Runyon, Senior Fellow

Natural disasters cannot be prevented but casualties and damage can be minimized through sustained and managed disaster mitigation. Mitigation—an ongoing effort to reduce the effect that disasters have on people and property—can take the form of keeping homes away from floodplains, engineering bridges and buildings to withstand earthquakes, including the latest wind safety provisions in building codes, and enforcing building codes to protect property from hurricanes and high winds. The implementation of a disaster mitigation program and the adoption of the most current comprehensive and coordinated International Building Codes developed by the International Code Council (ICC) are policy decisions that state and local governments must address to protect public health and safety. This report addresses protecting public health and welfare through a combination of strong building codes and active enforcement as a means of disaster mitigation.

The Federal Emergency Management Agency (FEMA) found that approximately 75 percent of U.S. communities are not participating in disaster mitigation activities; in fact, nearly half the U.S. communities in high-risk coastal areas have done nothing to mitigate a potential disaster. Although some locations naturally are more prone to natural disasters—such as California (earthquakes) and south Texas and south Florida (hurricanes)—fires, floods and tornadoes can hit anywhere. Every local government can (and should) take proactive disaster mitigation measures as several states and communities learned in 1999, when the rains resulting from Hurricane Floyd caused severe flooding, even in inland towns and communities.

A Decade of Expensive Natural Disasters

The 1990s produced several costly natural disasters that harmed local scenery, economies and housing. During the past 10 years, FEMA alone has spent $25 billion to help people repair and rebuild their...
communities after natural disasters. This figure does not include the billions of dollars in insurance claim payments, lost revenues from businesses, lost employee wages, and the millions of dollars spent by other federal agencies to assist victims of natural disasters.

After Hurricane Hugo struck South Carolina in 1989, a post-hurricane survey of damages indicated that many roofing materials were poorly attached, resulting in flattened buildings (see sidebar). Hurricane Andrew then led off a decade of disasters, causing $25 billion to $30 billion in damages and leading to the deaths of 28 people in Florida and Louisiana in 1992. The insurance industry estimated that 25 percent to 40 percent of insurance claims for Andrew-based losses were due to slipshod construction practices. After hurricanes Fran and Bertha slammed North Carolina with a one-two punch in 1996, structural engineers found widespread cases of shoddy workmanship in construction.

The 1999 hurricane season brought a bumper crop of disasters that led to 17 federal disaster declarations, surpassing the 1985 record. Hurricane Floyd caused 13 of the 17 major disaster declarations; 220 counties in 13 states were designated to receive federal assistance. In all, 42,973 homes sustained some degree of damage from Floyd, and 11,779 homes were destroyed or heavily damaged. Five injuries and 79 deaths were attributed to Floyd, and 4 million people were evacuated in Florida, Georgia, North Carolina and South Carolina.

Hurricane forecasters at Colorado State University predict the increase in storm activity seen during the past five years (the five most intense consecutive storm seasons on record), will perhaps continue for the next 20 years. In July 2001, the National Ocean and Atmospheric Administration’s Hurricane Research Division reported that the increase in the number of hurricanes seen in recent years is likely to continue, possibly for decades.
Strong Codes Mean Smarter Buildings

Whether or not the increase in disasters is a lasting natural phenomenon, one thing is clear—more people are moving into harm’s way and then expecting state, local and federal assistance when their homes and businesses are damaged or destroyed at the whim of Mother Nature. “People just like to live along the water’s edge,” says former Woods Hole (Mass.) Oceanographic Institution scientist Graham Giese.

As more homes and businesses are constructed in high-hazard areas and as demands for frills—such as complicated roofs with numerous angles and pieces—increase, stronger building codes and enforcement of those codes are required to reduce the overall financial burden after a natural disaster. Although people are aware that they are at risk from recurrent hurricanes, floods or other events, they often do not truly understand the magnitude of their risk.

How can state legislators and local officials act to protect citizens and their investments in the community? Most important, perhaps, is the fact that policymakers no longer can afford to be complacent. Simply because a hurricane or other natural disaster has not hit a state or a certain part of the state for a number of years does not mean that it will not happen eventually. For example, a major hurricane did not strike south Florida for more than 20 years, until 1992’s Hurricane Andrew; builders who moved to south Florida from other parts of the country often were constructing buildings in climatic conditions they did not understand. As a result, the area’s construction quality declined, and building code enforcement was lax. The insurance industry estimated that 25 percent to 40 percent of insurance claims for Andrew-based losses were due to slipshod construction practices.
Some states have strengthened their building codes to prepare for future natural disasters.

With hindsight, some policy actions may result in negative repercussions during the next major event. After Hurricane Andrew, then-Governor Lawton Chiles (Fla.) suspended contractor licensing requirements for 120 days; this allowed unlicensed contractors to operate scams and cheat homeowners. A significant percentage of homes in the Miami-Dade area were rebuilt or repaired by unlicensed contractors under minimal oversight by government inspectors. If another major hurricane hits the area, homes may not fare well.

**State and Local Policy Responses**

Because the public memory is short, the wake of a natural disaster provides a brief political opportunity to implement new standards. “After a storm is the only time that John Q. Public says, 'I don't want this kind of destruction to happen again,'” reminds Jeff Robinson, a Florida shutter manufacturer.

After helping to pay part of the $16 billion repair bill from Hurricane Andrew, the Florida Legislature directed state officials to survey public facilities in 1993 to determine which could withstand an intense tropic cyclone or a hurricane. In 11 counties, only 2 percent of facilities had adequate structural safety for a hurricane-prone area. State law now requires new schools to construct storm-resistant “pods” that meet tougher guidelines. Construction of these pods could take many years, however; school districts now are resisting the directive as an “unfunded mandate.”

*Florida’s Statewide Building Code*

The Florida Legislature adopted The Statewide Unified Building Code (HB 219) during its 2000 legislative session. According to Paul Rodriguez, chairman of the Florida Building Commission, “This is the toughest building code in the country. It is only appropriate that the state most vulnerable to hurricanes takes the boldest step to make our homes less susceptible to the damage caused by high winds.”

The legislation, effective July 1, 2001, establishes a statewide minimum standard for new construction and replaces 450 local codes. The Florida Building Code was produced by a coalition of building code experts, including the Florida Building Commission, the Southern Building Code Congress International and building code professionals who volunteered their time. The new regulations blend several codes—the International Fuel Gas; Mechanical and Plumbing; Standard Building; and International Building codes—to meet...
the state’s need to face its environmental challenges. The parent codes are the result of efforts by the International Code Council (ICC) to develop a single national building code with the goal to improve public safety in the built environment.

The bill’s sponsor, Representative Lee Constantine, admits, “No one got everything they wanted.” As the sponsor, he found himself refereeing and reconciling the concerns of almost 80 special interests to achieve passage of the legislation. Homebuilders think the code is too restrictive, while insurance companies want it strengthened even more. Construction manufacturers want to be assured that their products will meet code guidelines. Some local building code officials in Miami-Dade and Broward counties are unhappy that a state code will preempt their local codes.

Rick Dixon, executive director of the Florida Building Commission, voiced his support for the final product. “Florida can now move forward with a single minimum code that unifies all building design and construction regulations into a single code and provides expanded authorities and enforcement tools for local governments. We look forward to the improved effectiveness these reforms will provide in our rapid growth environment.”

When Governor Jeb Bush signed the bill, he brought into focus the reason for the legislation. “This new law improves the safety of Floridians during hurricanes. The construction of better-built homes will ensure Florida is a better prepared state.” Constantine is proud of what the Legislature approved—“... a single educational system, a single accountability system and a single interpretation.”

Texas Approves Statewide Residential Code

The Texas Legislature approved the adoption of the ICC International Residential Code as the municipal resident building code for one- and two-family dwellings in the state. The bill became effective Sept. 1, 2001; cities will have until Jan. 1, 2002, to make the transition and begin enforcing the new code. Senator Ken Armbrister and Representative Allan Ritter sponsored SB 365. Says Representative Ritter, “I believe that the adoption of the
International Residential Code will improve the homebuilding industry in Texas. The use of a single code throughout the state will lead to consistent code enforcement, higher quality construction, and less confusion in the construction process. I believe this bill will result in more affordable and safer homes." The bill had the support of the Texas Association of Builders, the state Municipal League, the Texas Society of Architects, the Hispanic Contractors' Association, the National Association of Home Builders, and members of the insurance and building officials associations.

Other State Action

Other states also are examining their building codes. The South Carolina Code Council adopted the 2000 International Codes as construction guidelines in May 2000. Utah's Uniform Building Code Commission approved the adoption of the ICC International Building Code, the International Residential Code and the International Energy Conservation Code; implementation is scheduled for Jan. 1, 2002. The adoption of the ICC codes was supported by a coalition of public officials and industry organizations, including homebuilders, architectural and engineering groups, utilities, building owners and managers, and public safety officials. Utah previously adopted the International Plumbing Code, the International Mechanical Code and the International Fuel Gas Code. The state Fire Prevention Board is considering adoption of the International Fire Code. The Georgia Board of Community Affairs adopted the International Building Code, the International Residential Code and the International Fire Code on Sept. 12, 2001; the International Codes will update the state standard codes effective Jan. 1, 2002. The New York and North Carolina building code councils are considering the adoption of the ICC's family of codes for their states, and Virginia also has expressed an interest in adopting the International Codes.

Pennsylvania approved legislation in November 1999 (after six years of negotiations) to create the state's first state building code. In addition to the previous lack of a statewide code, about half of Pennsylvania's 2,600 communities had no local building codes. The state law supersedes any existing municipal codes that were less stringent; more stringent codes will remain in effect.

Other states also are addressing disaster mitigation to reduce the effects of future natural disasters to homes and businesses. Maine is moving toward local beach management plans to prevent erosion during development. Connecticut is promoting public education—through municipal officers and real estate agents—to homeowners who are new to the area.
Other states—California, Florida, North Carolina and Rhode Island—have laws that require natural hazards be taken into account when developing or revising a comprehensive local zoning and development plan.

States that are regularly affected by tornadoes and high winds are offering incentives to homeowners, local governments and schools to create “safe rooms” to withstand strong winds. (A safe room is a concrete and steel reinforced room—approximately 8 feet by 6.5 feet with 6-inch-thick walls and a steel door—built in a new or existing above-ground structure that provides greater protection from severe storms and tornadoes.) A 1999 Iowa law allows counties and cities to determine whether shelters are needed for mobile home parks. Iowa also offers grants to homeowners and local governments as part of its Tornado Shelter-Safe Room Initiative to develop underground or in-ground tornado shelters. The program, developed to limit the injuries and deaths from severe weather events, offers safe room construction and installation grants to residents ($3,500) and to local governments ($5,000) in one-third of its counties that have been affected by recent tornadoes and severe wind storms. Arkansas also reimburses homeowners up to $1,000 for construction of safe rooms in underground shelters.

In many states, critical local community structures—hospitals, fire and police stations, government buildings and schools—are being built to tougher standards to ensure they can function after a disaster.

Local governments also are responding to the need for building codes.

• In Freeport, N.Y., building codes now require hurricane straps to make houses more hurricane resistant.

• In New Hanover County, N.C., residential building codes now require new construction to be built several feet above the 100-year flood elevation.

• Salt Lake City, Utah, passed a bond measure to allow schools to be built to a higher seismic standard than currently is required to withstand a potential earthquake.

• Seattle, Wash., has developed an expedited process to grant a building permit to retrofit homes that could be destroyed during an earthquake.
On New York's Long Island, where coastal erosion or flooding threatens $3 billion to $10 billion worth of property and infrastructure damage, the government is assessing the area's vulnerability to natural hazards. New York is developing a geographic information system (GIS) database of historical and current coastal events. The database will provide town planners with area profiles to better plan for hazard mitigation.

Additional mitigation policy measures are discussed in the sidebar on this page.

**The Need for Active Code Enforcement**

In response to natural disasters, state and local governments are beginning not only to adopt stronger building codes, but also to provide requirements for the necessary training of inspectors and to increase the penalties for code violations.

By establishing training requirements and testing for government inspectors (and a funding mechanism to allow hiring enough inspectors), state and local policymakers will ensure that the building codes they adopt will be applied and enforced. “In many coastal areas, the housing industry is almost unregulated, either because the counties don't have codes or they lack enforcement,” according to Tim Reinhold of South Carolina's Clemson University.

Part of the problem that faces inspectors is that major changes have occurred in the homebuilding industry. Contractors who once built one house at a time now have become schedulers for 25 to 30 subcontractors who work independently; gaps may be left in structures where there should be overlaps and seals. Inspectors who visit a site on a particular day may miss an important construction component because the subcontractor responsible for that piece of the work has not yet been to the job site.
Conclusion

State legislators will want to be aware of state, federal and local emergency response plans in order to communicate recent developments to their constituents. Policymakers also will want to seek input from their constituents regarding 1) methods to strengthen homes, businesses and public buildings to withstand natural disasters and 2) how taxpayers will pay for these additional measures. In return, state legislators can explain to their constituents that protecting their homes and businesses against natural disasters must begin as a personal responsibility. The following checklist outlines initial steps that policymakers might want to consider as they develop their responses to mitigate natural disasters.

<table>
<thead>
<tr>
<th>Basic Community Preparedness Disaster Mitigation Checklist</th>
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<tbody>
<tr>
<td><strong>Some Steps Public Officials Can Take</strong></td>
</tr>
<tr>
<td>• Meet with your local emergency manager and review your community's contingency and emergency plans.</td>
</tr>
<tr>
<td>• Review the insurance coverage on all public buildings.</td>
</tr>
<tr>
<td>• Schedule an informal “tabletop” exercise with state and local emergency management staff to simulate an emergency.</td>
</tr>
<tr>
<td>• Review your community's school disaster preparedness plan.</td>
</tr>
<tr>
<td>• Work with communities and other officials to develop protocols for mutual aid arrangements, joint response and community education. Encourage participation in the development of the International Codes.</td>
</tr>
<tr>
<td><strong>Some Key Messages from Public Officials to Constituents</strong></td>
</tr>
<tr>
<td>• Make Homes Disaster Resistant: Install hurricane shutters on windows, put straps and reinforced bracing on roofs, reinforce garage doors, raise electrical appliances and outlets, install sewage backflow valves, and trim dead or weak branches from around the house to reduce damage caused by hurricanes, high winds and flooding.</td>
</tr>
<tr>
<td>• Purchase Flood Insurance: Many policies have a 30-day activation period before they take effect. Flood insurance is the only form of assistance that can reimburse homeowners for their losses from floods that result from hurricanes. Many homeowners do not realize that floods are not covered in their existing insurance policies.</td>
</tr>
<tr>
<td>• Develop Family Disaster Plans and Keep a Disaster Supply Kit: Every community should have a disaster plan, and every family should have an emergency supply kit and a personal disaster plan. The plans should give particular attention to relatives with special needs, small children and pets.</td>
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</tbody>
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State Legislative Reports

"The Link Between Energy Efficiency and Air Quality"

"State Crime Legislation in 2000"

"Juvenile Justice State Legislation in 2000"

"State Incentives for Energy Efficiency"

"Postsecondary Enrollment Options Programs"
(Vol. 26, No. 4) (ISBN 1-58024-158-1) April 2001

"Child and Family Service Reviews: Implications for State Oversight of Local Child Care Welfare Agencies"

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What can a Jurisdiction expect from the adoption of the I-Codes?

General Expectations

- As a stakeholder in the ICC, a jurisdiction can exercise its right to vote on ICC code development matters and organizational policy as well as actively participate in the process through its appointed delegates within the building safety department, fire department, and other departments which exercise construction, health and energy code enforcement regulatory activities.
- Parochial modifications to the I-codes can be brought before all other ICC member delegates to be considered for national adoption, reflecting the jurisdiction’s contribution to fire and life safety wherever the I-codes are adopted.
- Eligibility for membership in a not-for-profit, public benefit organization of professional fire and construction code enforcement officials, owned and controlled by its member jurisdictions.
- A comprehensive, coordinated and contemporary set of codes. Adoption of the I-Codes eases the administrative burden on the building department’s code development and maintenance functions while enhancing consistent code enforcement, public safety and affordability.
- The I-Code system provides for the preservation of current code provisions which are unique to the jurisdiction and which have a proven record of public fire and life safety. The city has sole administrative authority to adopt and amend its codes, preserving local control of code content.

Economic Expectations

- The I-Codes help create a more attractive development climate for businesses location since I-Code design/build requirements are familiar to out of state developers. Streamlined Building Safety Department operations would eliminate unnecessary delays in the construction timetable.
- Adoption of the I-Codes is the first step toward achieving a more favorable ISO rating. Beyond code adoption, ISO looks deeper into a jurisdiction’s use and administration of the code. ICC has over 30 years of experience with training code officials and municipal personnel who work with inspectors. ICC can help your jurisdiction manage a vigorous implementation of the codes to further improve the ISO rating.
- I-Code adoption provides greater economic opportunity for resident designers, manufacturers, developers and the building trades when competing for business in surrounding communities. Knowledge of the I-Codes can be utilized in 50 states, Washington, D.C., Puerto Rico, the Architect of the U.S. Capitol, Department of Defense, General Services Administration, National Park Service, U.S. Department of State, U.S. Forest Service, Veterans Administration, National Bureau of Prisons and thousands of local jurisdictions throughout the U.S.
Building Safety Department

- The I-codes will streamline the fire and life safety and building regulatory system by bringing consistency, compatibility and uniform codes enforcement applications through common interpretation, education and code information services.
- By relying on the 200 years of accumulated code development experience that ICC brings to its model codes, your jurisdiction can divert valuable staff resources from major code development activities. Building safety and fire department staff can submit code changes to the ICC code development process as do other members and interested parties, thus sharing the experience and wisdom the jurisdiction has accumulated over the years with other cities, states and local jurisdictions and vice-versa. Member building and fire safety code officials can participate in the final vote in the code development cycle.
- The resources of the ICC staff can, in essence, expand the staff of the building safety department. An ICC staff of more than 350 professionals dedicated to maintaining and enhancing the most exhaustive and technologically sophisticated construction codes in the world will be an available resource to fire and building code officials and to its code users. In addition, plan review services are available through ICC which can assist during periods of peak demand.
- Uniform education and certification programs can be utilized nationally, providing a pool of trained professionals who have demonstrated their competency in code knowledge and application. The City can draw from this pool to meet staffing demands.
- Certification also provides an advantage to current staff through the mobility needed to be employable should they desire to continue in some code enforcement capacity upon retirement. This mobility aids in staff retention and morale by providing a mechanism for long-term career planning.

Services

- Utilize the resources of a staff of more than 350 professionals dedicated to the highest levels of member service.
- The resources of over 50,000 members are available for operational and administrative assistance.
- Plan review services can be provided when needed.
- A vast array of code support publications and architectural and engineering references, many of which are in electronic format for cutting and pasting into reports. The ASTM and UL Standards found in the IBC are published in single documents to eliminate the need for small design shops to purchase and maintain costly standards documents.
- For products, methods and technologies not fully addressed by the codes, any jurisdiction can rely on International Evaluation Service (IES) which will assure design professionals and code enforcement officials that products being specified meet the intent of the code for their application in building systems.
- ICC will bring professional development services to the community for initial and ongoing training to facilitate the transition. Code users will be able to quickly become familiar with code updates once the initial differences in format are learned.
- Your jurisdiction can use ICC certification services to demonstrate professional competency in code knowledge and application without the burden of utilizing inhouse staff.
- ICC can develop and administer contractor licensing exams, releasing valuable local resources to be utilized in other areas of department operations.
Building Codes and the Americans with Disabilities Act

The International Building Code can help state and local governments comply with the Americans with Disability Act Accessibility Guidelines (ADAAG).

Background

The Americans with Disability Act (ADA) of 1990 recognizes and protects the civil rights of people with disabilities. The law was modeled after earlier landmark laws prohibiting discrimination on the basis of race and gender. It covers a wide range of disabilities, from physical conditions affecting mobility, stamina, sight, hearing and speech, to conditions such as emotional illness and learning disorders. The ADA addresses access to the workplace (Title I), state and local government services (Title II), and places of public accommodation and commercial facilities (Title III). It also addresses telecommunications services for people with hearing and speech impairments (Title IV) and provides instructions to federal agencies that enforce the law (Title V). Regulations issued under the different titles by federal agencies, including the U.S. Department of Justice (DOJ) and the U.S. Department of Transportation (DOT), set requirements and establish enforcement procedures.

What Federal Law Requires

Under Titles II and III of the ADA, the U.S. Architectural and Transportation Barriers Compliance Board (ATBCB or Access Board) develops and maintains accessibility guidelines for buildings, facilities and transit vehicles. The Access Board also provides technical assistance and training on the guidelines. ADAAG is the basis of standards issued by DOJ and DOT to enforce the law. The building guidelines cover places of public accommodation, commercial, state and local government facilities. Regulations issued by DOJ and DOT contain standards based on ADAAG and also provide important information on which buildings and facilities are subject to the standards. It is important that the regulations be used along with the design standards they contain or reference.

Coordinating with the Accessibility Guidelines

The Access Board follows a common federal regulatory development process that includes public comment. ATBCB established advisory committees to help update its accessibility guidelines and routinely coordinates with private sector standards organizations. Coordination enhances accessibility coverage and improves harmonization between ADAAG and industry standards.
The Access Board has been an active participant on the committee that develops the ICC/American National Standards Institute (ANSI) A117.1 Standard, "Accessible and Usable Buildings and Facilities." A major objective of the Access Board and the ICC/ANSI A117 Committee is to harmonize ADAAG and the Standard. The ICC committee will incorporate the revised ADAAG changes into the Standard when it is published.

The Access Board also participates in I-Code and ICC Standards development activities, including the development of the IBC. The IBC includes provisions affecting accessibility such as: mainstreamed accessible elements, accessible means of egress and scoping provisions for the ICC/ANSI A117.1 Standard. When the revised ADAAG is published and adopted by DOJ, adopting the IBC will provide a unique opportunity for states to have accessibility standardized and integrated into the building code.

**Satisfying the Law through the International Building Code**

Title III of the ADA authorizes DOJ to certify that state laws, local building codes, or similar ordinances meet or exceed ADAAG. Title III applies to public accommodations and commercial facilities, including most private businesses and non-profit service providers.

Examples of covered businesses are:

- restaurants
- stadiums
- health care facilities
- banks
- grocery stores
- medical offices
- movie theaters
- convenience stores

In many cases, these facilities are also subject to accessibility requirements established under state or local building codes. To facilitate compliance with federal, state and local laws, the ADA authorizes DOJ, upon request from state or local officials, to certify that state or local accessibility laws meet or exceed the requirements of the ADA. To comply with the federal law, each state can individually develop, adopt and implement its own accessibility requirements and apply to the DOJ for acceptance.

Soon, state-wide adoption of the IBC will greatly simplify compliance with ADAAG. ICC will seek a determination from DOJ that the IBC satisfies federal law. With DOJ’s determination, states adopting the IBC will automatically be in compliance.

**Advantages of State Certification via the IBC:**

1. Compliance is easier. All the federal, state and local requirements are covered by a single, readily available document. Rather than searching state and/or local codes and the federal regulations for the requirements, architects and builders only have to refer to a single certified code;

2. Accessible design is part of each floor plan -- not an afterthought. Architects and builders can provide accessibility in the most cost-efficient manner. The cost of compliance in the early stages of design and construction is minimal. However, the cost of providing
accessibility after construction is completed can be significant;

3. Conflicts are resolved. By resolving conflicts between state and/or local and federal laws, certification lets builders and architects focus on building; and

4. Legal challenges are minimized. In a legal challenge brought under the ADA, facilities that comply with the certified code will constitute as rebuttal evidence of compliance with Title III of the ADA.

Conclusion

The IBC is the only model building code available that can help state and local governments comply with the ADA. Adopting the IBC will simplify the burden of complying with the federal law.
NEW YORK STATE: BUILDING A CASE FOR STANDARDS
by Robert C. Thompson, R.A., A.I.A.

A new era for New York State began on July 3rd, 2002. Overshadowed by media coverage being given to the decline in the stock market and the cry to industry leaders to follow standard accounting procedures [amidst the Enron, Arthur Anderson, and WorldCom collapses], New York State adopted a new generation of standards for the built environment. The purpose of this paper is to address the how the new standards for New York are expected to result in a healthier economy and safer environment.

The standards I am referring to in the broad sense include the International Code Council’s (ICC) International Family of Codes that New York State used as the base document for its new generation of building standards. These base documents include almost 1,200 individual reference standards promulgated by 88 reference standards organizations of private industry and governmental agencies.

The argument for standardization is compelling. The history of the benefits of standardization is irrefutable. Order and prosperity in a civilized society has a strong correlation with a system of standards and predictable expectations. Whether we look at fire protection systems standards for a building, or the accessibility standards for persons with disabilities, the message is clear. Standards do foster a healthier and more prosperous society. The message of this paper is not to convince the reader of the importance of building standards in a general manner, but rather I am presenting the messages of industry leaders who make the case that future building development in New York State looks very promising due to the adoption of a new generation of codes and standards. Furthermore, since building codes represent given expectations for performance, as do individual private industry or governmental standards, I will be referring to codes and standards simply by using the term standards.

This paper gives you a glance at a milestone achieved by New York State. As a society we cry out for adherence to standards since we believe they will improve our quality of life and economic security. In New York, tools for measuring the future performance of building systems take the form of national and international compliance standards.

Several years ago you may remember the commercial whose catch phrase was “Where’s the Beef? Well, the beef, or maybe better said in New York’s case is, what was the motivation for making a change? The answer in New York State to that question was supported by private industry and government agencies. It had as much to do with life-safety as it did with economic benefits. This paper takes a glance at a sampling of the information gathered that supports the assertion that Standards Do Mean Business.

COSTS & BENEFITS

The actions of adopting a new generation of standards bring New York into closer alignment with those standards used by surrounding states. For nearly 50 years New York State maintained its own code. This resulted in New York State being isolation from the rest of the nation and international body of thought. New York was out of the mainstream of national thought expressed by other regional building codes and standards. This became particularly evident when researching the thoughts of national developers.

Based upon data gathered, it is anticipated that regulated parties will recognize building development savings in the range of 5% to 15%. This is the result of performance requirements that provide regulated parties more alternatives to arrive at the most cost-effective solution while, at the same time, protecting the occupants and users of the building.

The new generation of codes and standards significantly reduces residential and commercial construction costs in New York State. Many corporations that build across the United States, most notably the May Company, Ace Hardware, Georgia Pacific, McDonald’s, Target, and State Farm, were contacted to
compare construction costs in New York to states that use a model building code. While the range of savings varies (in buildings that are used by more people, multi-storied, etc., the savings are greater), we chose for our rough analysis an unweighted average savings of 10%. Based on the dollar volume of construction that would be affected, it was projected that New Yorkers could save approximately $350 million of commercial construction each year.

There is also a considerable amount of savings to be realized in residential construction (single family and multi-family). The Builder’s Association estimates that there is approximately $3 billion in annual residential construction. Depending on the type of single family home built, industry estimates the average savings will be approximately 13%. Multi-family housing construction stands to save approximately 6%.

The following information reflects conversations and correspondence with nationally recognized developers and code consultants. This information is presented to illustrate how the design and construction industry will be impacted by the recent adoption of new standards.

A. Statement of a Large Developer of Department Stores

A representative of a large developer of department stores states that the median cost to build a department store under the a model code [the current New York State Uniform Fire Prevention and Building Code adopted July 3rd, 2002 reflects the performance requirements of a model code] will be approximately $1,750,000 less than if the same building were built under the former New York State Uniform Fire Prevention & Building Code. This representative further commented that antiquated requirements imposed by the former code did not provide an additional level of safety.

B. Statement of the U.S. Department of Energy

New York remains at the forefront of energy-efficient construction practices by adopting one of the most progressive state energy codes.

The New York Energy Conservation Construction Code (ECCC) capitalizes on recent advances in energy efficient technologies and building practices. With the adoption of these standards, it is expected that New Yorkers will save up to $80 million per year in energy costs. It will protect New York’s air quality by reducing carbon dioxide emissions by 517,000 tons per year and acid rain-causing sulfur dioxide by 493 tons per year.

Under the direction of the New York State Department of State, the agency responsible for reviewing and adopting state building codes, the ECCC was developed under an extensive multi-group partnership. The collaborative process involved the New York State Department of State (DOS), the New York State Energy Research and Development Authority (NYSERDA), the New York Energy Code Technical Subcommittee, the U.S. Department of Energy (DOE), Pacific Northwest National Laboratory (PNNL), the Building Codes Assistance Project (BCAP), design and building professionals, and other stakeholders. This group crafted a code that will benefit taxpayers, businesses, building owners, and renters for years to come. The ECCC requires minimum standards of energy efficiency in new residential and commercial buildings. And, as outlined by New York law, the incremental cost of the ECCC demonstrates a 10-year simple payback when compared to the previous energy code that was adopted in 1979 and last updated in 1992.

C. Statement of a National Chain of Retail Outlet Stores

The head of the Design and Construction group of a national chain of retail outlet stores based in Minneapolis stated that the former requirements of the New York Code [prior to July 3, 2002] resulted in additional costs of $319,000 to $355,000 per outlet store built in New York. These costs are eliminated as a result of the New York’s new standards. These costs occurred because of the former requirements for:
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(1) 3 hour rated walls between sales floor and storage rooms depending upon the storage occupancy classification, (2) vestibules or corridors to be the means of accessing a stair, (3) taking all stairs to the roof, (4) draft barriers above all ceilings, (5) 2 hour walls between parking ramps and stores and signs requiring restricted use of elevators. The head of this Design and Construction group recommended that New York adopt nationally accepted standards in order to remain competitive at the national level.

D. Statement of a National Code Consulting Firm

A principal for a national Code consulting firm stated that he was not aware of any cost analysis that had been done that compared the cost of doing work in New York to the cost of doing work in other states. Based on his experience in working with the New York building standards, he said he would expect cost savings if a building code based on a model code were adopted in New York, since this would create a more predictable environment for construction development and lessen regional barriers (state to state) as well as barriers within the state.

E. Statement From a National Fire Protection and Engineering Firm

The president of a national fire protection and engineering firm compared construction costs under the former New York State Uniform Fire Prevention & Building Code to costs under model building codes. This firm has served on dozens of projects involving the construction of retail department stores in New York State. These types of buildings are commonly two or three levels in height and approximately 150,000-250,000 square feet in gross floor area. The following code issues are among the many issues which must be addressed in constructing these buildings: degree of fireproofing of structural members, protection of escalator openings, construction of separation wall between department store and adjacent mall, protection of openings in firewalls, communication to parking levels, ventilation of stairs and shafts, construction of stock room and receiving area walls, fire stopping of noncombustible plenum spaces, and need for standpipes. It is very common for a project of two or three stories in height equaling approximately 200,000 square foot in area to have to deal with 60-80% of the listed items. Based on the construction cost for a department store ranging from $45 to $60 per square foot, the cost related to the listed items will be in a range of $4 to $12 per square foot. When utilizing a 200,000 square foot building, this range represents a cost to the project of $800,000 to over $2,400,000. Therefore, assuming a medium range for these numbers, for a 200,000 square foot building that would normally cost $11,000,000 to construct, the construction penalty to build under the New York State Uniform Fire Protection and Building Code equates to $1,600,000. The president of this national fire protection and engineering firm further stated that in his opinion, complying with the former New York State Uniform Fire Prevention & Building Code does not provide an additional level of safety. He further stated that many of the requirements contained in this code have long been removed from model Codes as well as other nationally recognized standards because they are unnecessary and their removal does not result in increased fire losses. In addition, these requirements are not deemed necessary by major insurers that pay for fire losses. The President of this firm further stated that the current technologies provided in the model codes do ensure an amount of safety equal to the New York’s former code. However, the model code methods are now recognized as “state of the art” and are much more compatible with the construction techniques utilized today as well as more respectful of operational aspects of these types of buildings. He concludes that although his analysis only concerned one type of building, similar type of savings are achievable for many types of buildings.

F. Statement of a Subsidiary Company of a National Real Estate Development Firm

The president of a subsidiary company of a national real estate development firm, which has been developing rental apartment communities across the country for over twenty years, supports adoption of a new standards based on the International Family of Building Codes. This company develops an average of 8,000 apartment units each year under the various building code jurisdictions in America. It has previously developed 494 apartment units in the state of New York, and has begun construction of 549
apartment units in Brookhaven, NY.

The president of this company states that the former New York State Uniform Fire Prevention & Building Code is a prescriptive code that prevents the flexibility found in performance based codes, such as the International Codes. He states that performance based codes allow the use of modern materials and assemblies that perform in a manner that protects the general health, safety, and welfare of the population while at the same time providing economic feasibility for development. The President stated that the former New York State Uniform Fire Prevention & Building Code provides less public protection and negatively affects the economic feasibility of development. He further stated that his company has passed on many development opportunities in New York State because complying with the former New York State Uniform Fire Prevention & Building Code is cost prohibitive.

The president then summarized what he viewed as the three most onerous requirements related to residential, multi-family construction found in the Uniform Code. These are issues relate to wood frame construction, plumbing materials, and fire limits.

Wood frame construction is not allowed over two stories under the former New York State Uniform Fire Prevention & Building Code. The International Building Code (IBC) allows wood frame construction up to four stories. Residential buildings in New York over two stories must be constructed of masonry or other non-combustible construction. This adds $8.00 to $10.00 per square foot to the cost of an apartment. The average size of a modern apartment is 1,000 square feet and the minimum number of apartments in a typical development is 200. The extra cost to build a typical development under the Uniform Code is therefore from $1.6 to $2.0 million.

The president stated that the former New York State Uniform Fire Prevention & Building Code prescribes the type of pipe for plumbing materials in contrast to the IBC, which would allow plastic pipe for water, sewer and drainage so long as it meets certain performance requirements. The President states that metal water piping and metal sewers from buildings to the main sewer can add $200 to $400 to the cost of an apartment, and that multiplied by the number of apartments in a community could result in a large sum. He further stated that plastic pipe performs better than metal or iron piping, and that the smooth, non-porous bore, plastic composition and chemically welded joints significantly reduce clogged lines and sediment buildup, as well as preventing bacteria buildup, oxidation, rusting and leaks. He believes that plastic piping is a better material than metal and costs less to install.

Wood frame construction is not permitted within fire limits under the provisions of the former New York State Uniform Fire Prevention & Building Code. Within fire limits, all buildings must be of masonry or non-combustible construction. Fire limits go back to the days when fire sprinklers were in their infancy and only firemen and their equipment controlled fires. Fire limits were established when firehouses were remotely located or poor planning had resulted in inadequate access to the fire sites. Modern building and zoning codes have provisions that make the restrictions related to new construction and fire limits obsolete. Model codes do not recognize the concept of fire limits.

The President of this company concluded that its market studies indicated that there is pent up demand for new rental housing in the State of New York, but the former New York State Uniform Fire Prevention and Building Code in conjunction with restrictive local laws makes the development of new rental housing in New York unfeasible in many cases.

G. Statement of Senior Vice President of a Publicly Traded Real Estate Company

The senior vice president of a publicly traded real estate company stated that the cost added (no value added) in designing and constructing under the former New York State Uniform Fire Prevention & Building Code is real and definable. Of the nearly 4,000 apartment homes his company has completed in New York, the cost of construction in New York State is higher by $9.00 per square foot or 16% on the average. He believes that the safety of structures constructed under model codes is uncompromised.
Records of his company indicate that it has experienced only three fires in its apartment houses in the past three years, all of which were resident induced and accidental. No loss of life or injury resulted from these fires. The vast majority of his company’s apartment homes have been constructed under the umbrella of model codes. The senior vice president concluded that New York State should adopt a building code which is model code based. He stated that the record shows that doing so would not result in degradation of quality or life safety and that the benefits of doing so would be many, including reduced cost, timely and concise decisions regarding Code questions, and an excellent safety record already proven.

H. Statement of the Regional Vice President of the Third Largest Multi-Family Builder in the United States

The regional vice president of the third largest multi-family builder in the United States states that the former New York State Uniform Fire Prevention & Building Code adds cost without benefit of value. He believes that the most restrictive requirements in the Code are: (1) the two story height limitation on type 5a (wood frame) construction, (2) the prohibition of CPVC and PVC water and sanitary drainage piping, and (3) the ½” drywall overlay on corewall required to meet the NY State “hose stream test”. He notes that these requirements do not relate to nationally accepted model building codes and therefore multiply the costs associated with construction. He calculated increased costs on a typical 20 million-dollar project to be in the neighborhood of 8-10%, which would add approximately $6,000 to $8,000 per apartment unit depending on the community’s size. He notes that over the course of the last 5 years, his company has only developed one community in the state of New York, due, in large part, to the economic burden of the former New York State Uniform Fire Prevention & Building Code. He stated that the adoption of a building code based on a model building code would lower the cost burden of multi-family construction, resulting in increased feasibility to build within the state of New York.

Renovation of Downtown Properties for Villages, Towns, and Cities

There is overwhelming support for these standards from village, town and city development corporations, all of whom have hundreds of thousands of undeveloped square feet space in their downtown business districts. For example, the city of Syracuse has reported 674,720 square feet of space in 42 downtown buildings that cannot be utilized due to older standards. Buffalo reports that 40%, approximately 214,698 square feet, of their downtown upper story space suitable for residential development cannot be used because of the standards. White Plains has approximately 2 million square feet currently undeveloped, the highest amount in the country. While a number of factors influence the ability to use this space, the most frequently cited obstacle to redevelopment is the older standards. The adoption of new standards on July 3rd is expected to encourage development of vacant space.

Reduction in New Homeowner and Business Owner Insurance Premiums

In addition to reduced construction costs, there are also significant reductions that will be seen in insurance premium costs. The insurance industry had completed a preliminary analysis of the former New York State Uniform Fire Prevention & Building Code and found it is not comparable to many areas of the various national model codes. The industry informed New York that unless it adopted new standards, it is likely that no New York municipality will receive a rating better than an 8 or 9 (on a scale of 1-10, with 10 representing no recognized protection). However, if New York were to adopt a model code, its rating would be significantly lower, resulting in lower new homeowner and business owner insurance premiums. Using similar states premium reduction as models, the Insurance Department estimates new homeowner and business owner premiums could be reduced by as much as 10%. This savings represents a total statewide savings of approximately $3.5 million per year.

Summary:

Governmental and industry leaders throughout the nation provided information that supports the
expectation that the standards New York State adopted on July 3, 2002 will lead to a healthier economy and more vibrant business environment throughout the state. Speaking of the former New York State Uniform Fire Prevention & Building Code, New York State’s Governor George Pataki said: “Our current building code has become outdated, holding back development and construction throughout the State and placing New York at a competitive disadvantage with neighboring states. A model building code and energy code will bolster construction and create new jobs across the state while ensuring our homes and workplaces are safe.” New York State’s Secretary of State Randy A. Daniels, added that the adoption of the new standards for New York “reflects current technology, products and safety standards. The code will encourage both new development and rehabilitation of existing buildings, which is key to revitalizing our downtowns.”

Standards are living documents that change as advances in technology proceed. New York State is committed to the continued progress and development of standards. New York [The Empire State] recognizes that progressive standards promote at the local, regional, national, and global levels a more vibrant economy. But most importantly, for the built environment, progressive standards safeguard the health safety and welfare of occupants and users of structures.
New York City Code Adoption Website

The New York City Code Adoption website contains links information that can be helpful in many code adoption situations.

Click Here
A Complete Building Safety System – Not Just Codes

Building safety depends on more than codes and standards. Building safety results from providing trained professionals with resources and ongoing support necessary to stay current with the latest advancements in the building safety field. More cities, counties and states in the United States have used ICC’s comprehensive package of building and fire safety services than any other.

ICC’s building safety system is well equipped to meet the needs of any jurisdiction with code interpretations, education, personnel certification, plan review, building product evaluations, code commentaries, handbooks and more. ICC offers targeted and customized services for the professional development of code enforcement officials, fire officials, architects, engineers, builders, plumbers, contractors and building owners and managers. The ICC building safety system is founded on the participation of building and fire safety officials, the building design and construction industry, and its members for code development and revisions.

International Codes™: Comprehensive, Coordinated and Contemporary

The International Codes (I-Codes)™, ICC’s family of building and fire safety codes, provide safeguards for people at home, at school and in the workplace. The I-Codes are a complete set of coordinated, comprehensive and contemporary building and fire safety codes adopted by jurisdictions across America and used as the basis for other countries’ building codes.

The I-Code family includes the following:

- International Building Code®
- International Residential Code®
- International Plumbing Code®
- International Mechanical Code®
- International Fire Code®
- International Energy Conservation Code®
- International Property Maintenance Code®
- International Existing Building Code®
- International Fuel Gas Code®
- ICC Performance Code for Buildings and Facilities®
- International Private Sewage Disposal Code®
- International Urban-Wildland Interface Code®
- International Zoning Code®
The I-Codes combine the strengths of the legacy codes without regional limitations. They are a single set of codes that are effective, efficient and meet government, industry and public needs.

The ICC governmental consensus development process allows input from all interested individuals and parties. The final determination of code provisions is left in the hands of public safety officials who, with no vested financial interest, can legitimately represent the public interest.

**Code Resources**

ICC invests considerable resources to support the I-Codes. ICC provides the end users the appropriate support services in order to successfully implement and enforce the codes.

Commentaries on the I-Codes assist the users of the codes in understanding the background and application of the codes to building design, construction and approval activities. For example, the commentary on the *International Building Code®* provides application examples, explanatory material, code development history, a comparison with the previous edition, illustrations and a bibliography of additional reference material in two volumes of over 1700 pages.

**Supporters / Widespread Support**

The following is a partial list of national organizations that support the adoption of the ICC International codes:

- U.S. Department of Energy (DOE)
- U.S. Federal Emergency Management Agency (FEMA)
- U.S. Department of Housing and Urban Development (HUD)
- American Gas Association (AGA)
- American Institute of Architects (AIA)
- American Institute of Building Design (AIBD)
- American Planning Association (APA)
- American Seniors Housing Association (ASHA)
- Building Owners and Managers Association (BOMA)
- Institute for Business & Home Safety (IBHS)
- Insurance Building Code Coalition (IBCC)
- National Apartment Association (NAA)
- National Association of Home Builders (NAHB)
- National Multi Housing Council (NMHC)
- Northwest Wall & Ceiling Bureau (NWCB)
- Northern California Drywall Contractors Association (NCDCA)
- Technical Services Information Bureau (TSIB)
- Western Wall & Ceiling Contractors Association (WWCCA).
ICC Membership

Members are the greatest asset of ICC. Providing quality services to I-Code users is a high priority for ICC. The organization offers several membership categories and an extensive system of regional offices, chapters and key relationships with officials at the state and local levels of government. Code enforcement and fire officials, designers, architects, construction professionals, corporate representatives and others involved in the development and maintenance of our built environment are all valued members of ICC.

ICC members have a voice in code development and enforcement issues throughout the U.S. For instance, Governmental Member Units are given multiple votes (according to population) regarding code changes as well as election of council officials and other issues decided at ICC’s Annual Business Meeting. All members, regardless of membership category, receive valuable benefits. These benefits include toll-free numbers for access to service in ICC locations throughout the U.S., complimentary monographs and other publications regarding proposed revisions to ICC codes and unlimited use of all ICC administrative, computer, technical and educational support services. Members also receive valuable discounts on ICC publications, software, videos and related code support products and service. The ICC has over 300 local chapters across North America and around the globe to help members stay up-to-date on both local and national building safety issues. The ICC also offers free code training on an annual basis for chapter members.

Professional Development Services

ICC’s Professional Development Services (PDS) provides many services to assist cities, counties, states and the federal government in providing education and training programs for their employees and constituents.

The technical curriculum for the codes is comprehensive. More than 150 courses are available in various lengths and delivery modes; targeted to entry-level, intermediate-level and advanced-level code professionals. The Professional Development Department provides timely curriculum based on recent editions of each code. Transition programs are available which are designed to assist jurisdictions with the adoption of the I-Codes.

ICC offers symposiums on contemporary issues in the code enforcement workplace. These symposiums allow participants to interact, discuss issues important to their jurisdictions, learn strategies for effective program implementation and exchange up-to-the-minute information on current techniques and trends.

ICC Campus On-Line provides a continuous opportunity for the busy professional to obtain basic knowledge about codes and information to enhance knowledge and skills. ICC Campus On Line currently offers over 60 courses. Approximately 7,000 students have registered and more than 2,500 courses have been delivered in all 50 states and 22 foreign countries. ICC Campus On-Line can customize its curriculum for any governmental unit or discipline.
The ICC Building Official Institute consists of four days of training which addresses building department personnel management, financial management, new technologies, media policy and public information and legal aspects of code administration.

A video series teaching Residential Inspection is available to provide a visual and straightforward demonstration of residential inspection. This series is widely used by states and local jurisdictions to train new inspectors.

Code Officials have the opportunity to complete an academic degree program in a nontraditional delivery format. ICC partners with community colleges across the country such as Red Rocks Community College in offering an Associates of Applied Science Degree available via the Internet. This degree has a strong code enforcement component and is transferable toward a Bachelor Degree with the University of Phoenix.

Virtual Seminars are also offered and are “attended” right from the office. The audio is delivered over the telephone. Using a speakerphone allows several individuals to participate and provides the feel of a talk-radio program.

Certification

Certification ensures that competent building and fire safety individuals are involved in the critical building approval process. It also ensures that a level of professionalism is available to attract a continually increasing level of competence and professionalism into the building code community. Over the past three decades, ICC has developed the nation's most robust and recognized certification credential for code administration professionals. Through ICC, professional certifications are available which are specific to state, regional and national codes and standards throughout the U.S. Currently, over 163,000 certifications are held by 45,000 individuals in one or more of 70 areas of expertise, including approximately 800 Master Code Professionals, the highest technical designation recognized in this profession. Currently, 28 states recognize the benefits of such certifications and require or prefer them as a condition for service.

Technical Services

ICC staff provide code interpretations to facilitate the approval of building designs. Over 100,000 telephone interpretations are addressed each year. In addition, approximately 5,000 informal ICC staff opinions are issued each year with a one-week turnaround. Formal interpretations can be requested at any time and are processed through a committee primarily composed of code officials.

ICC provides comprehensive plan reviews for designers and code officials. ICC technical staff provides plan review worksheets and a comprehensive and professional report outlining any code deficiencies in the proposed plans. Plan reviews are typically completed within three weeks of submittal. On a more limited basis, ICC provides technical consulting for portions of projects where staff will meet face-to-face during the concept phase of the project and provide guidance on code compliance prior to formalization of the final plans and specifications.
ICC Evaluation Service

ICC Evaluation Service (ICC ES) provides assurance that building products and technology meet building code provisions. The activities of ICC ES are undertaken in a way that supports the exercise of the code official’s approval authority. This eliminates the time and effort associated with each state or local agency designing an evaluation method and then performing the evaluation independently. The ICC ES evaluation report provides a benchmark for all parties throughout the U.S. to rely upon when considering new and alternative building technology.

The introduction of new construction technology does not usually coincide with the publication of new building safety codes and standards. Consequently, ICC ES provides an “alternative materials, design and methods of construction” as basis for acceptance of new building technology that is not specifically covered in the codes and standards.

An ICC ES evaluation report provides the supporting rationale for and a statement of compliance with the U.S. model building codes (2000 or 2003 International, 1999 BOCA National, 1999 Standard and 1997 Uniform) along with any special conditions of use or limitations. An ICC ES evaluation report provides documentation and assurance of the degree to which a product or building technology meets the model building codes. The report helps the code official consider approval of the technology in an informed and timely manner. As a result, it reduces the burden on the technology proponent and fosters the timely deployment of the technology.

ICC ES has issued over 1500 evaluations of new building technologies and software with respect to code compliance. These evaluations have been performed for many companies and facilitate the acceptance of new products by the building design, construction and code communities throughout the U.S. To facilitate international cooperation, ICC ES also participates as a member of the World Federation of Technical Assessment Organizations.

International Accreditation Service

The term “approved agency” is used throughout the model codes to refer to an agency “regularly engaged in conducting tests or furnishing inspection services” when “such agency has been approved by the Administrative Authority”. That administrative authority can be a Federal, state or local code official, fire marshal, mechanical inspector or a number of other entities. Implementation of this provision of the code requires each such authority to adjudge the capabilities of third party testing, inspection and fabrication agencies. The efforts of those agencies are fundamental to the process of code compliance that the administrative authority is entrusted to ensure.

The International Accreditation Service (IAS) assesses and monitors the acceptability of testing laboratories, calibration laboratories, inspection and quality control agencies and fabricator inspection programs for manufacturers using specific materials (e.g. steel, concrete, wood) to certain standards contained in the model codes and international
standards associated with conformity assessment. IAS eases the need for each authority to conduct ongoing investigations on these agencies.

The IAS is fully accredited to carry out this function and can certify testing laboratories, quality assurance agencies, fabricators and others who are integral to the conformity assessment equation worldwide. That expertise can be brought to bear in deployment and enforcement of any Federal, state or local code and can bolster the level of conformity to the adopted codes and continued building safety. IAS provides the basis for seamless and transparent interaction among state and local government and with foreign countries on the subject of testing, quality assurance and fabrication. Follow up inspections, evaluations and re-assessments by IAS ensure that administrative authorities using the codes do not have to perform these functions nor burden the building design and construction community.

To facilitate trade with other countries and help ensure importation of safe products into the U.S. market, IAS has mutual recognition agreements with foreign organizations. IAS is a member of the International Laboratory Accreditation Cooperation, Inter-American Accreditation Cooperation the Asia Pacific Laboratory Accreditation Cooperation and the National Cooperation for Laboratory Accreditation in the U.S.

**International Involvement**

ICC is also involved in international laboratory certification and evaluation services. ICC has an international program that is intended to foster increased communication with other countries on building construction regulations. The international program assists other countries in the development, adoption and deployment of building regulations. It also educates them on how the “U.S. system” works. ICC occasionally hosts foreign delegations of building industry technologists or government officials. ICC facilitates foreign delegations’ review and understanding of the U.S. building regulatory system. ICC’s work addressing “inquiries to the U.S.” enables ICC to be the information resource for other countries on the U.S. building code system. This promotes good will and facilitates the acceptance and use of products, designs, personnel and other U.S. programs in those countries.

**Here to Help**

Building safety in a community begins with adopting a proven set of building safety codes. But, it takes much more than a set of codes to protect the public. It requires qualified professionals to implement the day-to-day application of the codes. It also requires proven infrastructure to provide the resources and training necessary to keep the building safety professionals up-to-date with the latest building safety requirements and enforcement practices. ICC provides these services to the code enforcement community. Call us today for more information on how the ICC can partner with you to help make your community a safer place to live, work and play.
Web Site – www.iccsafe.org

The ICC web site is an invaluable tool for code users. It provides the latest code news, offers an active selection of code specific bulletin boards, a section for posting or finding jobs in the building safety field and extensive information on code publications, products, seminars, certifications, membership, and more.

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For More Information visit
www.iccsafe.org
or call 888-ICC-SAFE (888-422-7233)
ONE CODE ... a concept whose time has come.

By: David S. Collins, FAIA

Architects are often critical of regulations that affect buildings. It seems to be almost universally accepted that regulations restrict design, even though fundamentally they are just another aspect of the design process that must be considered and incorporated to make a project successful.

After many years of effort, the 2000 edition of the *International Building Code* (IBC) is currently the only model code from which to choose if a community wishes to adopt the most contemporary model building code.

Though the National Fire Protection Association (NFPA) is in the process of developing a model building code, it will not be available to consider for adoption until late in 2002. The dilemma facing many organizations and jurisdictions, including the American Institute of Architects (AIA), at this time is that they are being asked to make a tough choice, to support adoption of the IBC or wait for the new NFPA building code. In response to this, the American Institute of Architects (AIA) has recently moved forward with a program to support adoption of the ICC International Code Series, which includes the IBC and its companion codes, as they most closely follow AIA’s policies and provide a better environment for safety in buildings today.

**HISTORY**

Building regulations originated almost 4,000 years ago in the Babylonian Code of Hammurabi. That code decreed death for a builder if a house he constructed collapsed and killed the owner. Since that time almost all civilizations have developed some form of construction regulations or codes. The origins of the codes we use today can be traced to the great fires that swept large American cities in the 1800’s. Cities, in attempts to abate such large tragedies developed their own building or municipal codes. Over the ensuing years, municipal codes were refined and enforcement officials joined together in private organizations to create what we now know as “model codes.”

By depending on these privately developed codes, the United States is unique; code writing is a governmental function in most countries. Because the US Constitution grants police powers to the states, and some states allow local jurisdictions to write their own codes, multiple codes and standards has evolved addressing the broadest range and narrowest details of construction. As early as 1973, AIA began suggesting the concept of “one code,” at a time when various states and local communities developed their own codes although adoption of model codes was increasing throughout the country.

Through the 1970’s, ‘80’s and ‘90’s, the US saw a significant increase in national and multi-national and international architectural and business interests. Materials suppliers increasingly became nationwide operations; the business climate was no longer local. Interest within the industry for a single model code increased in response to these trends. The AIA and construction industry groups began to lobby more strongly for a single unified family of codes. It was during this period that the Building Officials and Code Administrators, International (BOCA), International Council of Building Officials (ICBO), Southern Building Code Congress International (SBCCI), and the National Fire Protection Association (NFPA) also began work to harmonize their codes. Some success was achieved through such cooperative ventures as the Council of American Building Officials (CABO) Board for the Coordination of the Model Codes (BCMC). Reports by BCMC
were developed on numerous topics, such as means of egress, high hazard occupancies, etc., and gained wide acceptance in some of the codes.

In the early 1990s there were several changes that occurred that significantly strengthened the concept of a single unified set of codes; one was a political change in the climate of code development with the adoption of the Americans with Disabilities Act as federal legislation, others were the North American Free Trade Agreement, and the creation of the “common code format.” AIA was instrumental in the development of the new format; which was adopted by the three model codes aligning the technical sections of the model codes, the first major step toward a single code. While some detailed technical requirements continued to vary from code to code, the new format went a long way toward allowing the code user to better understand where to find requirements on a particular subject.

Three of the model code groups (BOCA, ICBO and SBCCI) agreed to create the International Code Council (ICC) with the ultimate goal of jointly developing the ”international” family of codes. As part of the process, they agreed to cease publication of their individual codes (National, Uniform and Standard). NFPA was also invited to become an active participant in ICC, but discussions to formally involve them were not successful then, and appears impossible even now.

In September of 1999, final changes for the first edition of the *International Building Code* (IBC) were voted upon by the members of BOCA, ICBO and SBCCI. This historic event saw record attendance at the first joint conference for all three groups and drew accolades from FEMA and AIA for bringing our long hoped for goal of “one code” to fruition.

**NOT ONE CODE?**

On August 31, 1999, NFPA and the International Association of Plumbing and Mechanical Officials (IAPMO) announced plans to develop a “comprehensive set of consensus codes and standards,” including a building code.

Numerous organizations under the leadership of AIA, and the Building Owners and Managers Association (BOMA), joined together to establish the “get-it-TOGETHER” coalition, whose sole objective was to persuade ICC and NFPA to cooperate rather than compete in developing codes. Several overtures were made though ultimately, to no avail. The ICC continues with development of the “I” codes (as they are commonly referred to), and NFPA/IAPMO are continuing work on their own to develop building, mechanical and plumbing codes (NFPA 5000 and IAPMO’s *Uniform Mechanical and Plumbing Codes*).

Inevitably disagreements between ICC and NFPA arise in communities that are considering adoption of the set of “I” codes, and just as inevitably the decision is made in the political arena. However, there are technical safety issues that should be explored prior to making any decision between the two rival code development groups. This is made more complicated and difficult to comprehend because NFPA has yet to publish a building code. Although NFPA does publish several codes and standards that are widely accepted and used as references in the "I" codes.

NFPA-101, *Code for Safety to Life from Fire in Buildings and Structures* (Life Safety Code) published by NFPA has been a significant part of the regulatory environment for many years. The NFPA also publishes other design and construction standards which are referenced in the IBC. Primary examples are NFPA-13, which governs the design and installation of fire sprinklers, and NFPA-70, the *National Electric Code*. 
WHAT CAN HAPPEN

California is a good case study of the vagaries that can occur as part of the state and local code adoption process. Many California agencies proposed adoption of the 2000 IBC as the new state building code. Other agencies proposed adoption of the 2000 Uniform Plumbing and Mechanical Codes published by IAPMO. A third state agency wanted the 2000 Uniform Fire Code published by The Western Fire Chiefs Association. Because these codes are independently developed the state recognized that there is an overwhelming need to coordinate the codes. Complicating matters is the fact that California has traditionally made substantial local amendments, in such areas as access for persons with disabilities, hospital regulations and seismic design, requiring additional coordination.

The recent decision in California to keep the 1997 edition of the Uniform Building Code and delay adoption of more current codes was based on the relative strengths of the constituent groups from each publisher. Taking the worst political stance, each agency chose to stay with the codes with which it was most familiar rather than base its decision on the merits of each to protect public safety. The relative merits of these codes have been the subject of unproductive partisan debates.

WHICH ONE?

So, if a strictly political decision on which code to use in each jurisdiction is to be avoided, how should the decision be made? How do design professionals and public bodies determine which is the best code to adopt? In the fall of 1999, AIA established a Codes Task Group to examine AIA’s policies and determine what, if anything, should be changed in the policies because of the entry of NFPA/IAPMO into the building code market. The Task Group’s report, endorsed by the AIA Board, indicated that it is still in the best interest of this country to have a single set of codes that are “comprehensive, contemporary and coordinated,” and developed following a consensus process. In addition, the Task Group included a list of endorsed codes that fit within the parameters of AIA policies.

COMPREHENSIVE

The three model codes organizations (BOCA, ICBO AND SBCCI), and now ICC publish documents which are specifically targeted at all issues of physical construction. The comprehensive nature of these codes requires them to include various standards and testing methodologies that are established elsewhere. NFPA’s standards for the design and installation of various fire safety systems, and the ASTM standards for manufacture or production and testing of materials and their performance are perhaps the most widely referenced, but others such as ASCE structural standards are also widely referenced. NFPA will likely have similar references in their codes.

In addition to the IBC, the ICC’s “I” codes include the International Mechanical, Plumbing, Residential, Energy Conservation, Property Maintenance and other codes. ICC is also in the process of developing the International Performance Code and an International Existing Structures Code. NFPA predominately publishes the standards for various fire-related systems (such as NFPA 13, the standard for the installation of automatic sprinkler systems) and some occupancy criteria in the Life Safety Code. None of NFPA’s current standards comprehensively regulate building code issues. NFPA’s documents currently do not include criteria for building materials, nor structural standards.
COORDINATED

In order to have a workable set of comprehensive codes, they must also be technically coordinated. California is suffering from its decision to use codes from different publishers because of the difficulty coordinating these codes. Varying definitions of terms alone can create an administrative nightmare. One major exception is NFPA’s *National Electrical Code*, which because it is nearly universally adopted and used can be readily integrated into virtually any code adoption. Similarly, NFPA 13 is widely adopted and referenced in all of the codes.

By contrast to NFPA’s proposed building code and IAPMO’s mechanical and plumbing codes, the *International Building Code* is fully correlated with the other “I” codes and the referenced standards, including the *National Electrical Code* (NFPA 70). It also relies upon the common code format, which allows anyone familiar with the content of the current codes such as architects and engineers to instantly be familiar with its organization and logic. NFPA has deliberately chosen to not use the common code format, preferring to develop their code and then format it as the Standards Council dictates, adding to the confusion for those who are attempting to follow its development.

CONTEMPORARY

Technological changes and creative new solutions to design problems are constantly being addressed by regulatory agencies. Advances in standards and testing methodologies and engineering procedures also are part of changes and updates to codes. Natural and man-made disasters also cause codes to change. Major jurisdictions typically adopt the most contemporary codes to allow the use of the technological advances. AIA’s policy calls for use of these latest standards in order to reflect the most accurate and effective means of determining appropriate levels of public safety in construction.

CONSENSUS

NFPA touts its “true consensus” process based on their acceptance as an accredited standards writing organization by American National Standards Institute (ANSI). Consensus in this context refers to a method of decision making involving participation, testimony and voting by concerned parties. The ICC process allows broad participation in code writing and in testimony regarding code revisions, but it restricts the final vote to those who are public enforcement officials. Conceivably these public servants have the least potential conflict of interest when voting for code provisions. ICC’s Board of Directors also reviews appeals from final action prior to publication of their codes. The NFPA process allows all members to participate in an advisory vote, but reserves the final decision to a very limited number of individuals on its Standards Council.

AIA policy describes a consensus organization as:
- groups representing broad experience and balanced viewpoints;
- includes periodic reviews;
- allows challenge procedures for all who may dissent;
- provides opportunities for all affected parties to participate; and
- pays careful attention to opinions, including minority opinions.

There are clearly flaws and weaknesses in both ICC and NFPA systems, but their similarities seem to far outweigh their differences. The pool of experts participating in the development of both codes is nearly identical. The nature of the physical phenomena and human activities they regulate...
are identical. There is an overwhelming desire within the industry to not have two parallel code
development processes.

AIA’s POSITION

The AIA Board of Directors charged their Codes and Standards Task Group with examining the
impact the two codes have on AIA’s policies. The recommendations of the Task Group in
December of 1999, and reaffirmed in February of 2001, were to support the ICC International
Code Series because they provide the single family of codes that are comprehensive, coordinated
and contemporary and are developed following a consensus process. NFPA and IAPMO’s
documents do not meet the tests of these criteria. In addition to meeting these criteria, AIA policy
calls for adoption of the most current and up-to-date codes. AIA chapters across the United States
have taken active roles in the review and adoption of the ICC International Codes. Efforts by the
fire service in many communities have opposed the adoption of the more modern code; simply
calling for a delay until the NFPA building code is finished, without regard to the impact delay may
have on their communities.

Both the ICC and NFPA processes involve most, if not all, the parties at interest; those having
technical expertise, design experience and regulatory experience, to help develop the model codes.
Either code will likely establish standards that can be judged as equally safe. The minute
differences between codes may generate heated debates, but the actual differences lie in how
different people view risk, not an effort to create weak codes or merely to promote one product or
construction process over another.

Given the fact that the processes and the goals and criteria are so similar why are two sets of codes
being developed? Why is each code organization trying so hard to portray its code development
process as distinctively different and better than the other? An obvious conclusion is that the two
primary organizations involved in code development are publication houses, which are supported
principally by the sale of documents. The advantages to be gained by successfully promoting the
adoption of one code versus another are enormous for the successful publisher.

CONCLUSION

The adoption of the 2000 ICC International Codes, with 2001 amendments is being actively
considered by many states. AIA and its chapters as well as other organizations are active in support
of this effort. In the next year or two will see enforcement of these codes in several states. Some
have already taken steps in that direction with the inclusion of the International Mechanical and
Plumbing Codes, which were developed as part of the mid 90s editions of the three model codes.
How the regulatory climate in the United States evolves over the next three to five years may be
controlled by politics or a logical examination of the merits of the codes. AIA continues to provide
information to local officials regarding the appropriateness of regulations to protect the public and
the furtherance of a single code for the United States.

David S. Collins, FAIA is a practicing architect in Cincinnati, Ohio, with more than 25 years of
experience in design issues relating to codes, code development and code application. He is active
in both the ICC and NFPA code development process, serving on ICC’s International Existing
Building Code Development Committee and NFPA’s Technical Coordinating Committee for
NFPA’s Building Code. Dave currently manages AIA’s Codes Advocacy Program.
Importance of Energy Codes

The International Code Council® (ICC) fully supports legislation that promotes energy efficiency in the built environment. Energy-efficient buildings have far-reaching benefits for consumers, the environment, and the economy. According to the U.S. Department of Energy (DOE), energy-efficient buildings improve the lives of Americans by saving consumers money, lessening the demand on fossil fuels, decreasing the need to build new power generation capacity, and reducing pollution. Energy codes are broadly recognized as a cost-effective means of achieving energy efficiency in new and existing buildings. States can ensure that minimum levels of energy efficiency are met in buildings by adopting and effectively implementing national model building energy codes. ICC has been a leader for over 25 years in the development of model energy codes that provide a viable alternative to each state and local agency developing and adopting its own unique energy code.

Development of the International Energy Conservation Code® (IECC)

In response to the Energy Crisis of 1973, model energy codes were developed to help the U.S. achieve more effective utilization of energy. Model energy codes were developed to address the design of energy-efficient buildings and the installation of energy efficient mechanical, lighting, and power systems. In 1976, ICC’s legacy organizations developed the Model Code for Energy Conservation in New Building Construction (MCEC). In 1983, the MCEC was renamed and revised as the Model Energy Code (MEC). Using the MEC as its foundation, ICC developed the IECC in 1998. The IECC meets U.S. energy and environmental needs by fostering improved utilization of fossil fuel and nondepletable resources in new buildings. As an alternative for one and two family dwellings, the International Residential Code® provides prescriptive energy provisions that can be easily implemented and are consistent with IECC provisions.

DOE Support

The IECC is certified by DOE under Federal law and is the most up-to-date fully supported nationwide model building energy efficiency code. In 2001, DOE made a formal determination that the 2000 edition of the IECC would improve energy efficiency in residential buildings. DOE actively participates in ICC’s code development process and has been involved in developing proposals for all editions of the IECC and its predecessor the MEC. The National Energy Policy Act, signed into law by President Bush in 1992, determined that the 1992 MEC was cost effective for residential construction and required states to determine if it was appropriate to revise their energy codes to meet or exceed the standard. Subsequently, DOE determined that the 1993 MEC, 1995 MEC, 1998 MEC, and the 2000 IECC provide the most cost-effective residential standards.

Referencing the IECC and IRC

ICC is committed to providing an open and inclusive process for the development of building codes that promote energy efficiency through affordability. Approximately 97% of cities, counties, and states that adopt building and safety codes are using documents published by ICC. Energy provisions incorporated into a comprehensive and compatible family of building codes increase energy efficiency and provide cost savings in residential and commercial buildings. The IECC has residential and commercial building property provisions and can be referenced as a benchmark for performance evaluation for both types of building properties. To ensure that the latest technology is incorporated into the International Codes® (I-Codes), ICC’s code development process is on an 18-month cycle. For that reason, ICC strongly recommends that references to the IECC and IRC should pertain to the most recent editions.
Experiences with the Adoption and Implementation of the I-Codes
(conover 08-18-03 draft 4)

Purpose

The purpose of this document is to present experiences that state and local officials have had with the adoption and implementation of the 2000 edition of the International Codes of the International Code Council (ICC).

Background

When the U.S. was initially settled, local government developed their own building codes to protect the public health and life safety. As the country grew, more cities found they needed codes and each had to develop their own provisions. About 100 years ago national organizations, such as the American Insurance Association and American Society of Mechanical Engineers, began to develop model documents that could be used to regulate the design, construction, and use of buildings and their systems. Model codes to cover building construction were an integral part of the move to develop model building regulatory documents; eliminating the need for each state or local agency to develop and maintain their own. These model codes were developed and maintained by the Building Officials and Code Administrators International (BOCA), International Conference of Building Officials (BOCA), and Southern Building Code Congress (SBCC) and have been available for adoption by state and local government for many years. During the 20th Century many state and local agencies passed legislation and ordinances covering building design, construction and use and as a result adopted one of these model codes.

According to a 1988 study by the Federal Trade Commission, approximately 97% of the U.S. cities, counties and states that adopt building codes had adopted one of the model codes published by these organizations. As the model codes were updated state and local government would adopt later editions of the model codes. In addition those adopting and implementing the model codes continued to rely on the robust support infrastructure available from the model code organization that published the model code. Builders, designers, code officials, manufacturers and others involved in the design, construction and operation of buildings have wanted one model code in the U.S. instead of three. They have also wanted one organization to develop and implement the service and support programs that the users of a singular code would need.

In 1994 the three model code organizations formed the ICC with one goal: to publish one complete package of model codes by 2000 to replace the three model codes and provide a robust infrastructure of programs to support that code. This goal has been realized and on February 1, 2003 the three model code organizations fully consolidated as the ICC. Now, for the first time, the U.S. has one complete family of model codes that are coordinated under one open process by a singular organization augmented with a well-established and robust infrastructure.

Had the ICC not achieved the above goal and the three model codes continued to be updated, state and local government would have simply updated to the new edition of the codes as they had for many years. With the formation of the ICC and replacement of the three model codes with the ICC International Codes (I-Codes) state and local government considering adoption of the I-Codes have asked for information on the experiences of those who have already adopted the I-Codes. That information is presented below.

Approach

The ICC contacted state and local agencies that have adopted and implemented the I-Codes and asked them to provide their experiences with changing from their current model code to the I-Codes and the application and use of the support infrastructure for the I-Codes. The ICC also asked for any formal studies or analyses that were done to facilitate their adoption of the I-Codes. Responses were received from a number of state and local agencies and are summarized below. Appendix A contains the actual responses.
Summary of Experiences

Based on the responses from state and local government the following summary statements can be made.

- States with direction or authority to adopt a statewide preemptive code (e.g. one that is applicable throughout the state) want a single set of codes from one organization. This had been the case with the three model code groups. This continues to be the case with the ICC and as such facilitates the adoption of the I-Codes by states that have adopted one of the three model codes in the past.
- Just as state and local laws and rules referenced one of the model code organizations, these state and local laws recognize the ICC as the successor organization to the three model code groups. This facilitates an easy transition from one of the three model codes to the I-Codes with a minimum of legislative activity and confusion.
- A state code may have had limited preemptive authority with local government free to adopt other codes and/or amend the state code. This has created a lack of uniformity and lead to inconsistent interpretation. These were cited as key reasons for the use of a single set of code documents statewide and the ICC addressed with the I-Codes.
- Adoption of the I-Codes has occurred with little need to address localized conditions through code amendments. Where a state has unique and localized climatic or geographic conditions the I-Codes provide the format and guidance for addressing those unique state and local conditions directly in the codes.
- Publications available from the ICC have made it easy to compare the prior adopted model code to the new I-Codes; easing the transition to the new I-Codes.
- Resources provided by the ICC in support of training for local code officials has been instrumental in the distribution of technical information and providing a seamless transition from the existing codes to the I-Codes. State and local government and those impacted by the codes are accustomed to training from the model code groups and continuation of those efforts by the ICC has a positive impact on successful implementation of the I-Codes.
- Other entities involved in building design and construction, such as home builder associations, are supportive of the I-Codes and as such are available to provide training and support on their implementation. Such groups are also more informed about the I-Codes and make it easier to implement and enforce them.
- Economic impact statements prepared as part of state adoption processes supported the adoption of the I-Codes.
- Ad hoc committees with representatives of many interests including local communities, builders, design professionals, material suppliers and building owners have rigorously assessed how to update their codes and supported the adoption of the I-Codes.
- The need for interpretive bulletins by state agencies adopting the I-Codes has been remarkably low. One state who adopted the I-Codes in 2001 as its first statewide preemptive code has only needed to issue three interpretive bulletins on the I-Codes.
- State amendments have been incorporated into the I-Codes with the assistance of the ICC, resulting in one complete code document for an adopting state. Having all the state requirements in one book has lessened the burden on code users.
- Where states have proposed adoption of the I-Codes no adverse comment from the public was received concerning their adoption.
- Many interested and affected parties participated in the development of the I-Codes so when they are proposed for state or local adoption there is little concern about or action to amend the provisions in the codes.
- Representatives of state and local government are very active in the development of the I-Codes; participating heavily at the code hearings. This makes it easier for state and local government to accept, adopt and enforce the I-Codes.
Appendix A

Arkansas

The Arkansas Fire Code includes the 2000 editions of the IBC, IFC, and IRC. When the state started the State Fire Code revision process the NFPA 5000 was far from being ready. There were some in the fire service that made some comments about waiting on the NFPA 5000. The code officials expressed concern about not knowing what that code would be when it was finished and it would take longer to review and compare the codes. Additionally, code officials expressed concerns about getting an updated code as soon as possible. As most of the local agency ISO ratings under the building code effectiveness grading system (see related ICC paper on ISO BCEGS) were coming due it was imperative that localities maintain the most up to date code possible for that review. The local homebuilders were a big help in securing adoption of the I-Codes and arranged for staff from their national association to assist with the adoption process before the applicable state committees. The American Institute of Architects support of the I-codes also helped to secure support for the I-Codes by the architects in the State.

ICC staff were a big help during the adoption process and did a lot to work with the State Fire Marshal. They also helped in communications with others in State Government. There were no formal studies conducted to assess the new codes compared to the previous codes that were based on the Standard Codes of SBCCI, although the document from SBCCI that compared the 1999 SBC to the 2000 IBC was used extensively and was quite helpful.

The Arkansas Department of Health has started working on IMC and the IPC. Representatives from IAPMO worked with the state to secure adoption of the UMC and the IPC. Staff of the state HVACR Division has been active on committees through SBCCI and ICC and being familiar with the I-Codes as well as the U-Codes could address any differences in the codes and support system for those codes.

Michigan


Prior to this change in law, the state codes were based on the BOCA National Codes. Local units of government were permitted to adopt nationally recognized model codes and were additionally permitted to amend these codes within certain parameters. These adoptions led to a variety of editions and combinations of codes being administered in and about the state, including various editions of the Uniform Building, Mechanical and Plumbing Codes and the BOCA National Building, Mechanical and Plumbing Codes. The lack of uniformity and consistent interpretation were cited as key reason for the use of a single set of code documents statewide.

Throughout the adoption process, the focus was upon adoption of the I-codes with a minimum number of amendments to address specific state legislative mandates and unique climatic and geological conditions that exist in Michigan. These included enhancements of the snow load maps along Lakes Michigan and Superior to address the lake effect snowfall and to respond to the frost depth conditions in Michigan.

To facilitate the uniqueness of adoption of the first statewide code, the state prepared Code Matrices to assist code officials, building owners, contractors and design professionals in the transition from the previous state code to the new I-codes. Publications such as the “Overview of the International Building Code” provided additional assistance in the transition.
The level of training offered to local code officials through statewide and local inspector organizations was instrumental in the distribution of technical information and providing an understanding of the differences in the existing codes and the I-codes. The use of educational tools and the ability to follow the code adoption process has been extremely valuable to local code officials in understanding the codes. Recognizing the need to partner with other interested and affected parties Michigan Home Builders Association provided training on the Residential Code to its members following the adoption of the codes.

With respect to the process used to update the codes in Michigan, ad hoc committees are appointed by the Director to review the codes and make recommendations on adoption. These committees include representatives of local communities, builders, design professionals, material suppliers and building owners. Each committee reviews in depth the code and any proposed amendments. Upon completion of the ad hoc committee work, public hearings are held to offer the public an opportunity to comment on the committee proposals. Following the public hearing, formal rules are submitted for legislative review and formal adoption. An Economic Impact statement is developed for each code, to assess the impact on the public and government.

Throughout the course of the adoption process and during the time the code is in effect, we track areas that pose difficulty in application and enforcement. For each issue, a technical bulletin is written where appropriate to address the specific issue and provide a resolution. These bulletins are reviewed upon updating of the codes to assure we have provided clear and concise guidance in the next edition of the codes. It is interesting to note that to date only 3 technical bulletins have been issued since the implementation of the codes in 2001. These include: Residential Attic Loads on Roof Trusses, Residential Shower Floor Liner Pitch, Basement Emergency Escape and Rescue Opening. In each case the bulletin was provided to offer clarification of unique issues.

It is important to note that we are currently in the process of updating the codes to the 2003 edition of the I-codes, Including, Building, Residential, Mechanical, Plumbing and Existing Building Codes. These codes include references to the International Property Maintenance and Fire Codes.

The Michigan versions of the codes were published in a joint venture with ICC to incorporate the text of the codes and the Michigan amendments into one document. This has lessened the burden on code users by having one document to work from.

**New Jersey**

New Jersey is in the final stages of the adoption process of the IBC/IRC. For the most part the adoption has been uneventful. The public comment period expired on February 16, 2003 and all of the comments received were in reference to code sections that the state proposed to amend. No comments were made in opposition to the code adoption in general.

**New York**

The state of New York adopted all of the I-Codes effective July 2002 and is already looking at adopting the 2003 editions of the I-Codes in 2004. The State as well as the Code Council charged with making changes to the code is very supportive of ensuring that the state building construction standards are maintained and remain current. The City of New York, which has developed and implemented its own code is also considering use of the I-Codes.

Mr. Joseph F. Sauerwein, Chief Fire Marshal, Town of Brookhaven, NY provided the following experiences. He had extensive involvement in two of the Technical Sub-committees that were formed to assist in the transition process to the new codes. This included development of certain enhancements to the code that were felt absolutely necessary for the state. As a code-user/enforcer, he is very pleased with how the transition has gone from the "home-grown" NYS codes to the ICC-based codes. The original statewide code was initiated after a tragic multiple loss of life fire in/about 1981. While that code had the
greatest of intentions and did, in fact, serve the state reasonably well for some years, it became outdated, difficult to use, illogically arranged and far less than efficient, with more than it's fair share of confusion.

When those in the building code community, particularly on Long Island, first started discussing the proposed switch to a model code-based fire & building code, there was a significant amount of discussion, generally among Fire Marshals. It quickly became clear that the only sensible route would be to move toward a model code that encompassed, integrated and coordinated its building & fire codes.

Mr. Sauerwein has an NFPA member since 1985 and still believes that NFPA has an invaluable role to play with many of the complex, technical aspects of the built environment, including, to a great degree the subjects covered in NFPA 1 and NFPA 101. The Town of Brookhaven continues to use many of their Standards. He points out that three and one-half years after NYS first decided to adopt the ICC family of codes the NFPA still had not finalized their building code. He believes that the opportunity presented by NYS was responsible for NFPA even venturing as far as it has with development of a building code.

Going beyond the code text, he indicated that technical support by the model code organization is very important to facilitating its adoption and implementation. He reported that the level of support we have received from various individuals in ICBO & BOCA (two of the members of the ICC and now through consolidation fully a part of the ICC) was absolutely delightful! He reported he generally gets a reply from any of them within 1 or 2 business days, sometimes taking as "long" as 4 days! Conversely he reports on another organization who never returns phone calls and never has anyone available from their support staff on the first call. He reports that they have had him hanging in mid-stream for over two years on an issue with one of their standards because they are not able to get a consensus from their committee. Their response at this time is "they have no idea what they're going to do to answer the question". He feels that is simply not acceptable.

He feels the transition from the former code to the ICC-based codes, with NYS enhancements, has gone as well as it could. Perhaps the biggest difficulty was and remains, the slow response of the design community. While there was more than adequate notice to all users and potential users in NYS, it appears that more than a few design professionals have been slow to obtain the new codes and avail themselves of the numerous training opportunities that have been offered by not only the ICC, but by their own professional organizations! He has received frantic calls from code users such as a principal of a design firm, asking where they could get the "new code books" and were they going to be available in electronic format.

The code enforcers, while truly acknowledging that there are significant differences with the new code, also have mentioned that there are far fewer inconsistencies, contradictions and, very importantly, fewer "gaps" ie: areas not addressed. Some find the new code "difficult" to work with, but much of that is likely based upon the fact that there are substantial changes and less gray areas, open to individual interpretation, coupled with new technology and methodology that was previously merely "not permitted".

Notwithstanding the foregoing, virtually all the enforcement personnel in the Town of Brookhaven have completed the state-mandated training and many have participated in additional training sponsored by various groups and all with staff from ICC.

He concludes by saying that while the "new" ICC-based codes now in use in New York State may not be perfect, they clearly are coordinated and comprehensive, supplemented with professional training assistance and technical support, and are improving efficiency by allowing newer design methodology at lower cost, yet still insuring the high level of life safety our residents and fire fighters need and deserve.

Ohio

The transition to the ICC Codes was made easier because the Board of Building Standards (the Board) had adopted the Ohio Mechanical Code and the Ohio Plumbing Code based upon the International Mechanical Code and the International Plumbing Code, respectively, in a previous update cycle. Effective 1 March 1998, the Board used the 1996 BOCA National Building Code, the 1996 IMC, and the
state felt like a new edition of the old codes was not reviewed as much as it should have been). The state feels that states that have yet to update their codes will benefit as industry buys into the ICC as the national code.

Tennessee

The City of Murfreesboro adopted the 2000 IBC and IFC (along with the whole family of I-Codes) in January 2002, with an effective date of March 1, 2002. These codes replaced the 1994 Standard Codes of SBCCI. While a bigger change than from the 1999 Standard Codes to the 2000 I-Codes it was still surprisingly easy.

The SBCCI has a number of comparisons that compare different editions of the SBC/SFC to the 2000 IBC/IFC. They used these as a starting point to help understand the differences between their existing code and the codes under consideration. The city formed a task force of building department representatives from the county and from each city in the county. We divided up sections of the code to study and settled on common amendments we would all make. This process took about three months. The bulk of the discussion and amendments were administrative in nature, with the exception of the stair riser heights in the IFC. Then the task force met with the homebuilders association and got their support through participation at one of their general membership meetings. The building official of the county and the building official from Murfreesboro are both board members of the county homebuilders association, and maintain a good relationship with them on a regular basis. This cooperative relationship was very helpful.

The thing that helped the city most in making the transition was to set the effective date out in the future, so that the designers knew in plenty of time about the new code and could avoid redesigns and the city had adequate time to train its staff on the new codes.

Texas

In 1997 Fort Worth started working on the adoption of the IPC. There was much opposition by local groups loyal to another code. While all opposition was documented as coming from local groups, it was quite clear that the arguments against the IPC and perhaps funding for the opposition was coming from another source. The city received support documents from the ICBO staff, as well as some private documents from another consultant who provided some of their unpublished reports for use by the city.

It took a year to complete the IPC adoption process. After that, the IMC was adopted with little resistance. The adoption of the International Building and Fire codes was simplified due to committee experience with ICBO and attendance to the IBC and IFC drafting conferences by city building department staff. Obtaining copies and the usage of the SBCCI 96 Commentary, BOCA 96 Commentary and the ICBO 97 Handbook provided useful insight as to the thought process of each code group which made the understanding of the IBC much easier. It also helped in creating local amendments to those codes. This process consumed a lot of city staff time attending meetings and personal time, weekends and nights, doing research and getting prepared. Where staff of other cities are not able to participate and absorb the information during the drafting process of the codes, the city suggests getting the latest three Commentaries on each of the model codes (National, Standard and Uniform) and keep them as a reference document.

From the standpoint of having enforced the Uniform Building Code of ICBO, the IBC addressed some issues like occupancy separation between a gas station canopy and the retail space that made it easier to apply the code. Expanding the old B-2 uses into many different Use Groups, which actually occurred during the Common Format process the three model code groups implemented, broadened the Change of Use provisions. What use to be a change from a B-2 warehouse to a B-2 factory, takes on a new emphasis as an S warehouse to an F factory.

However, understanding that bringing the uses back together into a mixed non-separated use building, actually broadened the concept of grouping uses together while appropriately addressing the hazards of
each use. In addition the sprinkler provisions have certainly been enhanced in the IBC. The city believes that the IBC provides a different approach to the life safety issue than the UBC. After gaining an understanding of the IBC the city believes it provides a clearer aspect to the safety concept associated with each use.

After adoption the city presented many classes with their local design professionals at no charge. This has helped in the rollover process from the old to the new codes. Having presentations made by staff or experienced Building Officials of the same code group who have experienced the adoption process associated with the I-Codes and who can provide a short technical explanation of different ideas meshed into a single code document is also recommended. Fort Worth has been in such a boom mode with respect to development that changing codes has not slowed it down. The new code has not affected development other than having to explain to the design community how to adjust their designs to the new requirements.

Carrolton Texas had also been using the Uniform Building Code. They report that the transition to the IBC and other I-Codes was smooth and simple. They worked with other localities in Texas to coordinate their amendments so all localities would have the same amendments. Issues such as rain gutters and termite protection were areas amended in the codes but 99+% in the codes did not need to be changed. This regional coordination of amendments greatly helped designers and builders who do work across local borders. The jurisdictions in the region did determine that if they adopted the NFPA 5000 code they would have had to make so many amendments that the amendments would have been larger than the 5000 code and they would have ended up with essentially a home grown Texas code.

There were no objections to their adoption of the I-Codes and they have found the level of service from ICC transparent compared to what they received from the model code groups. They have also found that the ICC is far more responsive in that there are now many more staff to serve them and offices of the ICC to call for assistance.

Virginia

Virginia adopted the ICC codes for plumbing, mechanical and fuel gas in 1997. Code official and client groups in Virginia wholeheartedly endorsed and to this date support the ICC family of codes, plus the NEC, to comprise the 2002 set of statewide building and fire prevention codes.

Virginia has used the BOCA codes since 1973 as a family of codes and has been a leader in code development since 1973 having one of the largest groups of code officials that include enforcers from fire prevention, property maintenance and construction who participate representing their localities and state government and the interest of all Virginians. Virginia code enforcers are active on code committees, ad-hoc committees and service on federal sponsored committees such as ADAAG.

Because of this activity and involvement, it has been quite easy to transition from the BOCA to the ICC codes. In fact Virginia code changes receive approval by the old BOCA and now the ICC membership 70% of the time. Our attendees number around 100 to 150 at all code hearings whether they are at the annual meeting or the mid-year code hearings.

In fact 85% of the ICC codes reflect requirements that were in the BOCA codes and Virginia has had such a strong presence at the ICC code hearings that even the new seismic requirements and other regional code requirements for termites have been influenced by Virginia's code enforcers.

Training, education and support services have been exemplary and without interruption to date. We expect no drop in service for interpretations, training, code reviews, certification programs, etc. We have 3 statewide code associations in Virginia who receive free training at their annual meetings. The Department of Housing and Community Development provides comprehensive in-house training and train-the-trainer programs using the ICC codes for all disciplines that are required to have ICC certificates to enforce the state codes.
Virginia is scheduled to adopt the 2002 state codes March 17th and implement them by either July 1st or Aug. 1st to enable DHCD to do statewide training. The state will then embark in the fall of 2003 and through 2004 to review the 2003 codes that will include the existing building and performance codes to then adopt the 2005 state building and fire codes by early 2005 thus putting Virginia back into the desired 3 year update cycle. Virginia is also looking at filing the 2002 or 2005 codes for equivalency with HUD/DOJ for accessibility and also ADAAG and CMS for health care facilities.

Virginia has a long history with its Uniform Statewide Building Code and Statewide Fire Prevention Code that provides for a high level of life and property safety yet at a affordable cost for continued development and growth. It is this balance that is made possible by the USBC that is mandatory and can only be changed by our Board that prides itself with adding only as few amendments as possible.

WISCONSIN

The state is encountering budget deficits and growing pains associated with the implementation of the four ICC codes (IBC, IECC, IMC, IFGC) the state adopted. Because the state is going from a "homegrown" code to a "model" code, the transition to the I-Codes tended to be somewhat laborious with respect to comparisons and analysis. The state also spent a good deal of time researching the organizations themselves and the code development process used. That included state agency attendance at every day of every IBC (2000) hearing starting with the working draft. Although the state expected considerable difficulty, the process ended up generating a great deal of support. By taking adoption slowly the state felt that would help the state and users of the codes better understand the codes and that it could generate additional support for adoption of the codes. The state created several advisory councils and created specialty councils to match up with the code committee breakdowns (i.e. structural, means of egress, etc.) used by the ICC. This allowed a correlation by subject matter between those in the state and the ICC staff and committees. The state also created the Wisconsin Commercial Building Code Council (WCBCC) which is more of an "umbrella" council that the other councils and committees bounced information through.

Even before the creation of advisory committees, the state started with a few administrative decisions:

* Be more involved at the national level
* Limit the "change to a model code" to the IBC
* No plan to go to model building code for multi-family dwellings or 1 & 2 family dwellings
* Keep specialty councils small and populate only with experts
* Don't change the way the game is played in Wisconsin
* The state would be "the" interpreters of the codes adopted
* Keep the Wisconsin modifications to the model at a minimum
* Empathize with concerns about "change"

Although the state limited the population on the specialty councils, the WCBCC was populated by a wide range of building code users. Included were members representing owners (3), designers (2), contractors (2), construction labor (1), building official enforcement (2), fire official enforcement (2) and the insurance-ISO folks (1). That well rounded group helped reduce the possibility that the specialty groups had not gotten too self focussed (i.e. tunnel vision) and had considered all aspects.

The state started with the IBC. The laborious and open nature of the process led to such support, that several other advisory councils ended up recommending the use of the IECC, IMC & IFGC. The comfort that was created also led to a recommendation by one of the Governor appointed advisory councils, a recommendation that the state also use the IBC for Multi-family dwellings.

The state surveyed large groups of our users a couple of times to make sure they were on the right track. Both times the survey was "unannounced" and took place at one of the biggest Commercial Code training sessions of the year (put on by the UW). The first was in Feb. 1998, before the WCBCC had been created and the second was in Feb.2001, right before preparations to proceed to public hearings. The survey helped the state identify groups that needed more information or special handling and it also
helped to stir up interest within the various code user groups that are so enthusiastic about the commercial building code and the built environment in Wisconsin.

Because the enforcement folks were one group most resistant to change, the state put together a task group that could discuss and provide suggestions on implementation issues and concerns of the enforcement partners. The group included 10 representatives from municipal (big and small) building code enforcers and one fire chief. The state was also able to work with code users to develop training and implementation plans that would help prepare those not directly within the state agency responsible for the code adoption and implementation.

One problem area was created relative to the ICC/NFPA break. One of the first of the "other codes" that were chosen to be a model was the fire code. The discussion revolved around NFPA 1 or the IFC. When the split occurred, the emotional ties that some had to NFPA seemed to get in the way of the technical aspects and what the state had perceived as the code that would work best with the IBC, the IFC. After the ICC and NFPA split, the emotion ultimately spilled over to the IBC after NFPA made the decision to develop a building code. The (at that time) further NFPA Building Code (now NFPA 5000) generated a great deal of concern and there was a push by some to "delay", even though we had already put forth a great deal of time and effort into the IBC. Ultimately, we chose to drop the IFC as one of the codes to use, and went with NFPA 1 (as one would expect it had to be substantially modified) as the model fire prevention code for the state.

One lasting problem with that is due to a strategy that was used. That being the we/they mentality that supposedly existed between the building officials and the fire officials. It was ironic that Wisconsin did not have the same we/they situation that seemed to exist in some of the other areas across the nation. The Wisconsin Safety and Buildings Division has served both the BO's & FO's since 1914 and state laws (referred to as the Safe Place Statutes*) from back in 1912/13 required the state to consider the firemen when writing the building code. Because of the we/they strategy, situations were created, generated, or fabricated in a manner that lasting hard feelings were possibly created. The feelings ultimately led to a subtle fracture such that the responsibility for the fire code and other codes, plus the administering of the program were moved to another Division of the state agency responsible for the building code.

There were numerous studies and comparisons but many may no longer be available. Even if they could be found, they may not be very usable to those outside of Wisconsin because the state was comparing the IBC (and the others I-Codes) to the Wisconsin Commercial Building Code. Being home grown and written, similarities were more difficult to identify than if the state had been using one of the previous model codes. Also because the state was so deliberate, many of the comparisons were to "the working draft, or the first draft, or etc., and may not be valid when compared to the IBC (2000).
Sara Yerkes is the government relations director at ICC in Falls Church, VA.

By Sara Yerkes

Much has been written and said about what is happening between ICC and NFPA. Unfortunately, much of it is inaccurate and misleading.

Organizations with missions to protect the public have a moral obligation to abide by the principles that created them. ICC believes in adhering to those principles and standing on the arguments factually. Not-for-profits are publicly accountable to not distort the facts and have a responsibility to protect the public’s trust. I hope this article will clarify some of what has been written about the ICC code development process and what led us to the present.

The Merger

Let’s start with a look at the recent past. The leadership of the three model code organizations was motivated and encouraged by many in the building industry who believed it would be in the public’s best interest, as well as to the professional advantage of architects, engineers and other professionals, to provide uniformity in the building and construction requirements.

In 1994, the three model code organizations, BOCA, ICBO and SBCCI, set aside their individual interests and established the International Code Council. ICC was created with a single goal, as stated in its mission: “to promulgate a comprehensive and compatible regulatory system for the built environment, through consistent performance-based regulations that are effective, efficient and meet government, industry and public needs.”

In 1999, the first set of coordinated and comprehensive codes for the built environment was issued. States and local jurisdictions nationwide are updating their building code requirements from the predecessor documents to the 2000 edition of the International Codes. The three model code organizations are no longer producing their respective codes.

True Consensus

This is a term frequently used by NFPA. NFPA, at best, has very limited experience in structural construction, and does not have the services or expertise required to support the adoption, implementation and enforcement of a building code. NFPA defends its document by saying that when its code is complete it will be the only building code available that will have been developed under true consensus and under a process accredited by The American National Standards Institute (ANSI). Let’s clarify some facts.

What does NFPA mean by “true” consensus? The dictionary defines consensus as “an opinion or position reached by a group as a whole.” So, if a group reaches consensus, it would mean it has reached a decision agreeable to the majority of the parties. Perhaps “true” consensus is what happened in Anaheim when opponents of the then proposed NFPA 1710 were left standing at the microphones after they were denied an opportunity to speak because the discussion on the motion was called to order.

The ICC has an open process of code development. This means that all the meetings are open to the public. The results from the meetings are available for any member of the public to review and comment.

The ICC code development process is inclusive. Any one may submit a code change proposal and participate in the ICC code development process.

The ICC code development process is a balanced process that permits all views and opinions to be taken into consideration ensuring a balanced outcome. The committee members represent general interests (consumer, code officials, other government regulatory agencies), user interests (academia, building owners, design professionals, insurance companies), and producer interests (builders, contractors, manufacturers, testing laboratories). To ensure a fair representation, not more than one-third of each committee is to be made up of members representing either the user or producer interests.

In the development of regulatory standards, consensus may be taken to mean “that of general opinion.” In due process, general opinion is taken to mean the majority eligible to vote. In the governmental process a duly elected official representing a city council, county commission or board of supervisors represents the public interest and votes accordingly. There is no personal or corporate vested interest and one could state that a public official controlled process offers both a less complex and more responsible process.

Codes and standards developers whose volunteers and members have an economically vested interest in the requirements of the codes or standards face the challenge of demonstrating that those parties do not dominate the code and standards development process. The American National Standards Institute (ANSI) accredits such processes. The ANSI system serves to control abuse of vested interests by protecting public safety officials whose only interest is in the protection of the public safety, not in the sale of products or technology.

The ANSI accreditation requires mandating a balance of interests on standards developing committees—this is but one method of assurance. There are other methods that fall outside the criteria prescribed by ANSI that offer as sound an assurance of the objectivity of outcome as one accredited by ANSI.

The ICC code development process incorporates a number of checks and balances to ensure the final codes are the highest quality documents. Before a code change is made, it will have been reviewed at several open meetings, over an extended period of time, with the results of each meeting published for public comment. The system also allows anyone to appeal a final decision on a code change to the opportunity to appeal an action. The ICC Board reviews the appeal and renders its decision based on whether due process was provided.

The Preferred Code Set

The “Inside the Beltway” article in the July/August 2001 NFPAJournal says that many Federal agencies are reviewing the second draft of NFPA 5000. This statement cannot be accurate. The second draft of the NFPA 5000 was supposedly not available for review until August 7, 2001, according to the news release entitled, “NFPA Board Consensus and was developed by organizations that have been producing construction codes following the government consensus process throughout the last century.

ICC has publicly stated that it has no objection to the Federal Agencies adopting any other entities reviewing NFPA 5000 when that code is published in final form. This is the logical approach, as the final document may look completely different from the first or even second draft. However, for NFPA to request that their draft document be adopted prior to its release by the ICC, is not in the public’s best interest, as it only serves the purpose of delaying critical decisions that address the public’s health and safety.

NFPA says that the Federal agencies have not “grabbed” the ICC and run with it. It would be naive for an organization to believe that’s the way the Federal government conducts business. Administrative Law governs the power and procedures of administrative agencies, including rule making, adjudication and judicial review of agency actions.

Most agencies follow an informal or notice-and-comment process called rulemaking. It is a three-step process: a notice of proposed rule is published in the Federal Register. There is normally a comment period, and after review of the public comments, the agency publishes a final rule in the Federal Register. In formal rulemaking there is an opportunity for persons to testify and be cross-examined, much like a trial. Due process ensures the government follows the proper procedures when making decisions that will affect economic or public interest activities. The rulemaking process can take anywhere from several months to many years to complete.

Traditionally, code adoptions happen at the local level. In a Federal system like ours, the central government decides issues that concern the country as a whole such as national security, making treaties with other nations, taxation, and such. Community planning, schools and building codes, for example, are local issues.

So, when reading what is being written or listening to what is being reported out there, you should be cognizant that there are always two sides to a story. When in doubt, check the facts. One thing I can tell you today without a doubt is that ICC founding members—BOCA, ICBO, and SBCCI—have 190 years of collective experience in the development of building codes. ICC does not need to predict or speculate. We let the facts speak for us.

To stay current on the nationwide adoption of the International Codes visit the ICC website at www.intlcode.org.

ICC NEWSLETTER

We welcome your comments, inquiries, and articles. Please send all correspondence to Richard P. Kuchnicki, editor, ICC Newsletter, c/o American Code for Building Construction, 22041; phone (703) 931-4533, fax (703) 379-1546, email kuchnicki@intlcode.org. Articles may be edited for space and clarity. This newsletter is also available in .pdf format at www.intlcode.org.
Sorting Fact From Fiction About ICC-NFPA

By Sara Yerkes

Much has been written and said about what is happening between ICC and NFPA. Unfortunately, much of it is inaccurate and misleading.

Organizations with missions to protect the public have a moral obligation to abide by the principles that created them. ICC believes in abiding by those principles and not altering our arguments factually. Not-for-profits are publicly accountable to not distort the facts and have a responsibility to protect the public’s trust. I hope this article will clarify some of what has been written about the ICC code development process and what led us to the present.

The Merger

Let’s start with a look at the recent past. The leadership of the three model code organizations was motivated and encouraged by many in the building industry who believed it would be in the public’s best interest, as well as to the professional advantage of architects, engineers and other professionals, to provide uniformity in the building and construction requirements.

In 1994, the three model code organizations, BOCA, ICBO and SBCCI, set aside their individual interests and established the International Code Council. ICC was created with a single goal, as stated in its mission: “to promulgate a comprehensive and compatible regulatory system for the built environment, through consistent performance-based regulations that are effective, efficient and meet government, industry and public needs.”

In 1999, the first set of comprehensive and coordinated codes for the built environment was issued. States and local jurisdictions nationwide are updating their building code requirements from the predecessor documents to the 2000 edition of the International Codes. The three model code organizations are no longer producing their respective codes.

True Consensus

“Consensus” is frequently used by NFPA, NFPA, at best, has very limited experience in structural construction, and does not have the services nor expertise required to fulfills its role. The consensus under a process accredited by The American National Standards Institute (ANSI) for the NFPA system for the built environment, through consistent process ensuring a balanced outcome. The consensus process requires that all comments and input to a working document, but definitely should not be compared against the IBC is not in the public’s best interest, as it only serves the purpose of delaying critical the IBC code development process. The “Inside the Beltway” article in the July/August 2001 NFPA Journal said that many Federal agencies are reviewing the second draft of NFPA 5000. This statement cannot be accurate. The second draft of the NFPA 5000 was supposedly not available for review until August 7, 2001, according to the news release entitled, “NFPA Final Form Code was developed by organizations that have been producing construction codes following the governmental consensus process throughout the last century. ICC has publicly stated that it has no objection to the Federal Register. This is any other entities reviewing NFPA 5000 when that code is published in final form. This is the logical approach, as the final draft document may look completely different from the first or even second draft. However, for NFPA to request that their draft document be published and to be adopted as a legally-binding code, it must be in the public’s interest and not serve only the purpose of delaying critical decisions that address the public’s health and safety.

NFPA says that the Federal agencies have not “grabbed the IBC and run with it.” It would be naive for an organization to believe that’s the way the Federal government conducts business. Administrative Law governs the power and procedures of administrative agencies, including rule making, adjudication and judicial review of agency actions. Most agencies follow an informal or notice-and-comment process called rulemaking. It is a three-step process: a notice of proposed rule is published in the Federal Register. There is normally a comment period, and after review of the public comments, the agency publishes a final rule in the Federal Register. In formal rulemaking there is an opportunity for persons to testify and be cross-examined, much like a trial. Due process ensures the government follows the proper procedures when making decisions that will affect economic or public interest activities. The rulemaking process can take anywhere from several months to many years to complete.

Traditionally, code adoption happens at the local level. In a Federal system like ours, the central government decides issues that concern the country as a whole such as national security, making treaties with other nations, taxation, and such. Community planning, schools and building codes, for example, are local issues. So, when reading what is being written, or listening to what is being reported out there, you should be cognizant that there are always two sides to a story. When in doubt, check the facts. One thing I can tell you today without a doubt is that the U.S. has the best building codes in the world. Think of the earthquakes that leave thousands of people displaced and destroy thousands of homes worldwide. Think of Seattle . . . minimum property damage, no loss of life. These are facts.

The fact is that 97% of the jurisdictions in the U.S. that have adopted and enforce a building code use one of the three model codes, or have a code based on one of those model codes, and most are in the process of upgrading to the International Codes.

The fact is that ICC founding members—BOCA, ICBO, and SBCCI—have 190 years of collective experience in the development of building codes. ICC does not need to predict or speculate. We let the facts speak for us.

To stay current on the nationwide adoption of the International Codes visit the ICC website at www.intlcode.org.
Re: NYC Adoption Meeting

On Friday, June 13, Ron Piester of the NYS DOS and I met with Patricia Lancaster, AIA, Commissioner of the Department of Buildings (DOB) and with Marzio Penzi, Asst. Commissioner, Bureau of Electrical Control. Mr. Penzi orchestrated the DOB adoption of the NEC last year and has been assigned the responsibility for overseeing the process of amending the Building Code of the City of New York (BCCNY).

1. Mayor’s Advisory Commission “Report on the Adoption of a Model Building Code.” This document is available on the NYC website: http://www.nyc.gov/buildings. I would encourage you to read this Report as it includes some very useful information that should be transmitted to jurisdictions that are considering adoption of NFPA 5000. In particular we should insure that the right people in the City of Chicago get a copy of this Report.

Of particular interest is Section 8.2 Assessment Forms. In these forms, the Advisory Commission members rated the components of the IBC and 5000 compared to the existing BCCNY. Each of the ratings of various elements are listed. General comments are included. Very interesting results that our Board, CEO and PP can use. Here are the elements that were rated and the ratings (converted to percentages):

1. How would you rate the **organization** of the IBC?
   
   IBC = 90%  
   5000 = 60%

2. How would you rate the **legibility** of the IBC?
   
   IBC = 84%  
   5000 = 52%

3. How would you rate the **comprehensiveness** of the IBC?
   
   IBC = 84%  
   5000 = 57%

4. How would you rate the IBC’s **availability to users**?
   
   IBC = 71%  
   5000 = 46%

5. How would you rate the IBC’s **ease of understanding**?
   
   IBC = 88%  
   5000 = 57%

6. How does the IBC code development process compare with the existing Building Code (BCCNYC) in terms of methodology and updating flexibility?
   
   IBC = 86%  
   5000 = 47%
7. How similar or consistent is the IBC’s **classification and use of terminology** to the existing Building Code?

IBC = 64%  
5000 = 45%

8. How does the IBC compare to the existing Building Code in terms of its **use of reference standards**? (The DOB considers the least use of reference standards to yield the highest rating)

IBC = 78%  
5000 = 62%

9. How would you rate the cost of construction and maintenance of buildings, following the IBC as compared with the existing NYC Building Code? (The DOB considers lesser cost and lesser maintenance to yield the higher ratings).

IBC = 68%  
5000 = 51%

10. How much of an **improvement in technology** does the IBC introduce as compared to the existing Building Code?

IBC = 90%  
5000 = 68%

A second set of elements were rated using different scale descriptors:

1. How would you rate the ease with which the IBC could be adapted to the special conditions and requirements of New York City?

IBC = 88%  
5000 = 37%

2. How would you rate the advantages, which would result to NYC, in the event of its adoption of the IBC?

IBC = 78%  
5000 = 37%

3. How would you rate the IBC’s universality of acceptance and any advantages from the application of such Code in other jurisdictions of the United States?

IBC = 91%  
5000 = 25%

4. How would you rate the performance history of the IBC?

IBC = 75%  
5000 = 33%

5. How do you consider the support services provided by the ICC, which would be available to NYC in the event of its adoption of the IBC?

ICC = 85%  
NFPA = 46%
6. How would you rate the training that would be provided by the ICC?

ICC = 85%  
NFPA = 46%

Considering that there were several pro-NFPA people on the Commission that voted for the 5000 without regard to merit, these are impressive numbers. If those members had been neutral, and voted evenly between the two codes, our numbers would have gone up and NFPA’s would have gone down. With no one “biased” toward the ICC on the Commission or during the Public Hearing, as were the fire, plumbing and mechanical union representatives, we did very well. It should be noted that at the Public Hearing, most of the pro-NFPA comments were from NFPA/IAPMO/ASHRAE reps. We purposely did not make comments at the Hearing since such comments seemed to me to be gratuitous and self-serving. We relied on broad-based, grass-roots support from BOMA, AIA and new organizational friends that we made in the City throughout the process; much more effective than the self-serving testimony from NFPA’s partners.

It should be noted that the Commission members made their judgments based predominantly on the presentations given by ICC and NFPA. Dottie Harris and Ron Piester were very persuasive proponents and our documentation was also persuasive. In the “Report,” Robert Thompson’s (NYS DOS) research, “Building a Case for Standards” was summarized. We also included the State of Oregon Code Review Committee final report which was also summarized in the “Report.” The ICC/BCCNY Comparison Study was a key document that was delivered in record time last year was also a “clincher.” This document relied on two NYC contractors, NYS DOS volunteers and ICBO staff for its development. Our ability to deliver an extremely detailed and crucial document on time to the DOB and Commission gave proof of our ability to respond in a timely manner to an impossible request; without that document we would not be making this report.

Our efforts over the past year which resulted in the Commission’s recommendation to the Mayor to utilize the I-codes is a two-edged sword, however. As evidenced by the “Report,” we were able to gain support by creating assurances that ICC can and will provide resources and assistance to NYC during and following the adoption process phase, which has now begun. In reality, there has been little support or commitment by ICC to date. Without the NYS Department of State staff through its Director, George Clark, and ICBO’s efforts, we could not have prevailed. The ICC CEO at that time would not commit to financial or personnel resources for this project and made no effort to be visible in the City. Fortunately there were subordinates and at least one Board member who saw the potential that NYC would have for ICC and did the necessary work behind the scenes to initiate and support efforts in the City. Further, we were very fortunate, through introductions made by George Clark, Jim Burns and Dan Caffrey of NYS DOS, to obtain the assistance of Desmond Burke, a BOMA/NY member who has tirelessly advocated the ICC through an extensive network of key City contacts at considerable risk to his reputation and work in the City. By linking us with the top governmental affairs consultant in the City, Catherine Giuliani, we have been able to work behind the scenes to arrive at our present location on the journey.
While there is cause for celebration, I mention the negative aspects of this project not to point fingers but to try to be clear that we cannot continue to neglect NYC or depend on DOS, one staff person, and volunteers if we want to see a “return” on the “investment” we have made to date. DOB has made it clear that there are vocal opponents that will continue to be in a position of influence during the next phase of the process. These NFPA supporters will do everything they can to try to block the use of the I-codes in the City. If there is any sign of weakness with regard to the elements listed in the Analysis above, these opponents will be quick to exploit them. If there is not immediate and profound support at the Board and executive staff level for the expectations we have put forth in the name of ICC, all the work that has been done publicly and behind the scenes will be lost. These expectations can be extrapolated from the Assessment questions and also from the document that was given to the Mayoral Commission (see attachment: “What Can NYC Expect from ICC”).

Next Phase

From the Executive Summary of the “Report:"

“. . .the Commission recommends that the adoption of the IBC, either by integrated language or amendment, over the existing Building Code or the NFPA 5000. The commission also recommends the same code development process successfully utilized for the development and adoption of the New York City Electrical Code. In this inclusive development process, integrated language or amendments are developed through the use of consensus-building technical committees under the guidance of the Department of Buildings.

This process also involves the use of “Blue Print” legislation. In this scenario, a series of local laws are contemplated, the first of which sets forth a revised administrative code with a mandate for future technical standard development and adoption. Once fully completed, the local laws mandate the continued updating of the Building Codes’ administrative and technical standards. The Commission suggests a development timeframe of 18 months for the code development process and initial local law submission.”

For the DOB, this means drafting integrated code language over the next 18 months and presenting legislation to the City Council whether the code adoption work is completed or not. Of course, the administrative provisions must be submitted as part of the Bill, which will essentially state that the 2003 IBC (as the base document) is to be adopted and the Bill will specify the date of adoption. This is a “Blueprint Bill” which sets a reasonable time goal for completion of the text of the BCCNY.

To accomplish this, a “Managing Committee” (MC) currently consisting of 20 members representing the entire spectrum of interest groups, including many of the members of the (former) Mayoral Commission, has been formed (including ICC opponents). This MC will receive the recommendations of the Technical Committees (TCs) and its Sub-committees (TSCs), as needed and any Technical Experts, as needed, which will be responsible for developing the integrated code provisions. The MC will submit recommendations to the DOB Commissioner which will ultimately have to be approved
by the City Council. The decision as to what provisions of the IBC are retained, what provisions of the BCCNYC are retained and what synthesis might occur between the two thus will have to be approved at all levels to and including the City Council. A protocol has been established in which failure to achieve consensus on a code provision after two attempts will result in the provision being shunted to an Arbitration Team which will negotiate and rework the provision and submit it to the Commissioner. Should arbitration fail, the default will be to the current BCCNY language. This should insure that the overall process does not get bogged down by unresolved issues in the TSCs and TCs.

To date, the following TCs have been formed and the IBC Chapters they will review are listed below:

- Administration/Enforcement IBC Ch. 1, 2, 17, 32
- Construction Requirements IBC Ch. 3 – 7, 12, 13, 14, 31
- Fire Protection IBC Ch. 7, 8, 9, 14, 15, 27
- Egress IBC Ch. 10
- Accessibility IBC Ch. 11
- Structural/Foundation IBC Ch. 16 – 26
- Existing Buildings IBC Ch. 34
- Mechanical/HVAC/Boilers IBC Ch. 38 + IMC
- Residential IRC
- Plumbing IBC Ch. 29
- Elevators/Conveyors IBC Ch. 30
- Construction Safety/Demolition IBC Ch. 33

What needs to be done by ICC for this next phase of the adoption process?

1. Deliver the updated IBC/BCCNY Comparison Study for use by TCs and TSCs.

2. ICC presentation at MC inaugural meeting on June 23rd to detail the services we will provide to the TCs, TSCs, MC and DOB.
   a. Code books
   b. Publications
   c. Technical assistance
   d. Certification and licensing services
e. Evaluation services
f. Other member services

3. Provide ICC member resource persons for each of the Technical Committees noted above. While this role has not been carefully defined yet, the scope would include providing code history, intent, interpretation, and consultation. It could involve suggesting resource publications, such as Commentaries, Handbooks, etc. It certainly would involve being a “coordinator” for ICC to interface with the TSs and TSCs. This person would not necessarily have to be the only one to assist, but would be responsible to provide whatever personnel and/or technical resources they might need to do their jobs. This will be a key element of our work in NYC; we made a strong case for our members’ ability to provide technical support and now we get to prove that it was not just rhetoric.

4. A resolution/directive from the Board that ICC members, jurisdictions, staff and financial resources will be made available for this next phase rather than the informal, voluntary scrambling that has characterized the past year. This does not preclude informal, voluntary assistance but also does not leave the responsibility and accountability for this project in question.

5. Continued contractual utilization of our governmental affairs representative in NYC to insure that the many City agencies are coordinated behind our efforts to win the support of the City Council

6. Retain a NYC public relations consultant to assist ICC Marketing Department in keeping the adoption process in the forefront of public information and enlisting the support of local industry via all media for a positive response by the City Council and to ameliorate efforts by opponents to derail the process.

7. Maintain relationships with key organizations and individuals who have the ability to use their influence on our behalf. These particular efforts are difficult to predict and plan for but are essential if ICC is to be seen as a partner with certain segments of the industry, specifically developers, building owners, fire safety directors, the fire prevention bureau, and the unions. By supporting the construction industry’s charitable activities we are seen in a much different light than we are portrayed by our detractors. For example, by being involved with the construction industry awards dinner recently, we assisted the unions in their commitment to City charities. To be visible as a major supporter of union charitable activities makes it difficult for NFPA supporters to criticize us as an outside organization which has no ties to the City and is only there to make money and take jobs away from plumbers and pipe fitters. It doesn’t hurt us to have our picture taken with the Archbishop who is a big supporter of the unions and vice versa. What we don’t have right now is the ability to capitalize on this by making sure these activities are conveyed to the industry and to the general public (see #4 and #5 above). While it demands financial resources to do this, the good will it promotes is well worth the investment.
8. Continue an active presence in construction industry activities by attendance at their meetings, providing speakers, giving awards and plaques to those who support us so that their efforts on our behalf gain positive notoriety for them, etc. Insure that our CEO has ample opportunities to speak at their meetings to show our respect for them and for the City rather than as an “outside” interloper that is not “connected” locally.

9. Provide training on the I-codes to future I-code users at their monthly, quarterly and annual meetings by our BEST instructors who tailor their presentations to the audience rather than take the arrogant position that we know what they need and impose our particular cookie-cutter method of doing things. For those that missed this lesson, New York State is the prime example of why one organization was successful there and another was not.

10. Provide collaboration with the DOB to assist them in streamlining their operational activities. This has been the source of the greatest criticism by code users in the City and the main impetus to bringing in a model code. We have begun the effort to demonstrate that our members, specifically Clark County, have been successful in accomplishing this locally and NYC can do the same. Ron Lynn graciously traveled to NYC to brief the DOB and we have had two occasions to bring key real estate development and building owners/managers to Clark County where Ron has shown them how it can be done and taken them to time-sensitive construction projects where they could personally observe how it works. This kind of effort from major jurisdiction building officials is extremely effective. NFPA can’t do it.

11. Provide professional assistance to the DOB in its desire to obtain assistance with contractor licensing as well as staff and consultant certification. This could be very good for ICC revenue as well as meet a need that DOB cannot meet on its own.

12. Develop a “sister city” alliance with NYC, much like the very effective work of WABO with the state of NY. WABO was totally selfless in their work to bring NY State into the ICC fold. We need the same kind of effort by a large jurisdiction to partner with NYC. To this end I will be asking Ron Lynn if Clark County/Las Vegas would be willing to step up to the plate (again and again). It would not hurt to have more than one major city get involved in this way.

13. Take the initiative to invite key NYC DOB staff and key industry individuals to attend the ABM this year. Last year we were able to gain incredible support from some of the most respected and connected individuals from the construction industry at Fort Worth. This is an outstanding opportunity for our members, not just staff, to demonstrate our code development process and to network with people who can make a difference for ICC in NYC both in formal meetings and informal gatherings.
There is probably more that could be listed, but this should give some perspective as to the scope of the efforts we need to undertake to be successful in NYC. The key to this is a definitive commitment at the top rather than a reactive effort by a few low-level staff, even though this has worked to date. To attempt to continue on this course will not work; it will be insufficient to meet the challenge we face there. Our opponents have not given up and will not roll over. They see us as having won a battle but not the war. They have financial resources that we cannot match. But if we have the resolve and the commitment to do what is necessary, they will not prevail because we have the interests of the City as our top priority. To further gain their trust, we need NYC to see this commitment. Then we can invite them to become an integral part of ICC, not just another customer or client.

Respectfully submitted,

Mike Clemens
ICC New York Representative
Advantages of the *International Codes* that will benefit your municipality or state

- One set of comprehensive, coordinated and contemporary building code regulations nationwide.
- Designed to work together and provide a natural transition from current, local and regional codes retaining their best aspects and coordinated to eliminate conflicting provisions.
- User-Friendly, uses established formatting found in previous code books.
- Convenient, requires reference to fewer codes by inspectors and contractors.
- Offers ease of adoption through the need for fewer potential amendments by adopting jurisdictions
- Developed and continuously updated through a national governmental consensus process. With ICC membership, you are a stakeholder.
- Fully endorsed by the American Institute of Architects; National Council of Structural Engineer Associations; National Home Builders Association; National Multi-Housing Home Builders Association; and Federal Emergency Management Agency, Building Owners and Managers Association, among others.
- Will help keep individual states in step with other states with overlapping construction families or construction regulations.
- Eases the burden of code maintenance for local and regional jurisdictions which use amended versions of existing codes.
- Performance-oriented to stimulate economic development through acceptance of innovative design and construction methods and to encourage new materials and new construction technologies.
- Saves contractors/builders time and money now spent complying with regional codes. One set of consistent building code regulations for contractors/builders working nationally!
- Makes it easier to produce products and services that will be accepted across state boundaries, easier to bid on jobs in other parts of the country, and easier to hire construction personnel or change jobs.
- International Code products including code books, codes on CD, code commentaries, checklists, videos and more.
- Nationwide education and certification programs based on the I-Codes.
- Nationwide technical support, including code interpretations and plan reviews based on the I-Codes.
- Evaluation Reports of construction products and methods based on the I-Codes.
ICC Code Adoption Maps and Charts
Go to current adoption information by clicking the links below.

ICC’s State Adoption Map
ICC’s State Adoption Chart
ICC’s Jurisdiction Chart

Building Officials:
Tell ICC about the codes your jurisdiction uses by clicking here
Codes, Standards, ANSI, OMB A-119, Governmental Consensus Process, Industry Consensus Process …. What is it all about?

By Sara Yerkes

In today’s debate over model codes and standards, we have begun to hear negative publicity about the ICC Codes because they lack accreditation by the American National Standards Institute (ANSI). Further, we have recently heard an assertion that codes and standards should only be adopted if they are ANSI accredited because the federal government now “requires” its agencies to recognize only ANSI accredited codes and standards. Both of these assertions are completely incorrect. Understanding this debate requires a little background in the sometimes arcane language of the codes and standards world.

Codes

Let’s begin with the term “codes.” Codes are systematically arranged laws and regulations. The model building codes are not considered legal documents until they are adopted by a governmental jurisdiction. They are developed to be accepted into local or state laws, but as “models,” they are developed in much the same manner as state or local governments are required to develop laws.

The enforcement of codes largely falls on state and local governments in the United States. This enforcement authority is derived from the 10th Amendment of the U.S. Constitution, which “reserves to the states” the right to legislate for all matters not delegated to the Federal Government nor prohibited to the States by the Federal Government, including laws for the protection of the public’s health, safety and welfare.

Standards, Recommended Practices, Guidelines

Voluntary standards, recommended practices and guidelines are not written in mandatory language. The term “standard” means a common and repeated use of rules, conditions, guidelines, or characteristics for products or related processes, production methods and related management system practices. Standards are often referred to in codes, but without codes to place them in an overall enforcement context, their impact on building construction lacks a systematic approach to protection of lives and property.
American National Standards Institute (ANSI)

ANSI provides third-party accreditation to approximately 200 standards developers in the U.S. ANSI was created to ensure that voluntary consensus standards for products, processes and services are developed with integrity.

ICC is an ANSI-accredited standards developing organization. ICC produces its ANSI A117 Standard for Accessible and Usable Buildings and Facilities through an ANSI accredited process. ANSI recognizes that there are many ways of developing codes and standards. Oliver Smoot, chairman of the ANSI board of directors said in testimony before the U.S. Congress on June 28, 2001 . . . “We believe that voluntary consensus standardization—which has as its hallmarks openness, balance, due process, and consensus—has proven its value time and time again for almost a hundred years . . . We are well aware that other means of standards development exist, and that in many instances those other methods and the resulting standards are entirely appropriate for the targeted user community.”

ANSI has signed an agreement to distribute the International Codes, and also distributes other non-ANSI accredited standards through its electronic store.

The U.S. National Standards Strategy (NSS)

The acceptance that there are many ways of developing codes and standards is reemphasized in the national strategic approach to standards. The strategy was developed by the private sector under the leadership of ANSI.

The NSS lays out the principles for developing national or international standards to meet society’s needs. “The sectoral approach allows interested parties to address their own issues and develop working methods that fit the problems at hand, since no single standardization approach can satisfy all needs.” The NSS recognizes that there is “no simple recipe that can be handed down to fit all needs.”

OMB A119 and Public Law 104-113

Before 1996, the Office of Management and Budget (OMB) Circular A-119 was an advisory that basically recommended the federal agencies to use non-governmental standards. In 1996, however, the circular was codified by the National Technology Transfer and Advancement Act (NTTA) of 1995.

The codification of the circular made it mandatory for agencies to use private voluntary standards to the extent feasible. If it is not practicable and the agency must rely on government standards, the agency is required to explain why. Examples may include standards for special services or products where the Department of Defense for security reasons may opt to use military specifications.

The National Institute of Standards and Technology (NIST) is the chair of the Interagency Committee on Standards Policy (ICSP). It is NIST’s responsibility to report annually to OMB on the progress the federal agencies are making towards using voluntary standards rather than agency-unique standards.

Neither OMB A-119 nor the PL 104-113 reference ANSI accreditation as a requisite under the definition of the term “voluntary consensus standard” or “voluntary consensus standards body.” Further, the federal government will not and cannot show favoritism towards any one organization, whether ANSI accredited or not.

In a letter addressed to ICC dated February 11, 2002, NIST clarified this question by referring to OMB Circular A-119: “... in section 4.a.1, the circular states that: “a voluntary consensus standards body is defined by the following attributes: (1) Openness; (2) Balance of interest; (3) Due process; (4) An appeals process; and (5) Consensus, which is defined as general agreement, but not necessarily unanimity. In addition, in section 6.h, the Circular states: This policy does not establish a preference
among standards developed in the private sector. Consequently, neither OMB nor NIST can endorse or recognize one standards developing organization as preferable to another.”

Truth and objectivity should be the crux of the debate, and the debate should focus on the merits of the codes developed under any consensus process that conforms to the principles outlined in the NIST letter referred to in this article.

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Introduction

Prior to the establishment of the International Code Council (ICC), model codes were developed regionally. For years, the building industry, asked for a single, unified building regulatory system to be used throughout the United States. In response, the ICC published the first complete set of International Codes (I-Codes) in 2000. The I-Codes incorporated the strengths of the nation’s regional codes, into one model code for use without geographical limitations.

In February 2003, ICC consolidated with its member organizations --the developers of the regional model codes -- Building Officials and Code Administrators International (BOCA), International Conference of Building Officials (ICBO) and Southern Building Code Congress International (SBCCI) thereby unifying regional infrastructures and resources, and ensuring the highest level of service. With a consolidated national organization and a comprehensive, coordinated family of codes, ICC is now even better able to respond to the needs of federal, state and local governments, the nation’s construction industry and public safety. A single set of model codes has strong support from government, code enforcement officials, fire officials, architects, engineers, builders, developers, and building owners and managers. For the first time in U.S. history, the dream of one code being adopted across the United States has the potential to lead to reality, with the resulting benefits to the health, safety and welfare of the public.

The recent development of a competing building code by another organization may affect this decades-long goal of a single building code, and the realization of a coordinated family of codes being used across the entire country. The competing organization disregarded the requests of the building industry to work together with ICC on its family of codes. Instead, the organization partnered with other entities and recently published a competing building code set. Their action ignores the decades of experience the construction community has with the model code process, the infrastructure that already exists, and the support services already available. Decision makers across the nation now have to divert time and resources away from addressing public safety to evaluate multiple codes and support services.

Technical staff in state and local jurisdictions can spend a tremendous amount of time making code comparisons and support service assessments. During the decision making process, ICC suggests considering the following questions:

- What steps need to be taken to ensure the smoothest transition from my existing code?
- Which code provides the expertise and support services to ensure this smooth transition?
• Which code and support system meets my jurisdiction’s needs, the public I serve, my clients, my customers, and others associated with the built environment?

This document will summarize various comparative studies of the I-Codes, with the hope that the information in these studies will assist in answering the above questions.

Overview

The more information decision makers have, the more effectively they can participate in the decision making process associated with code adoption, deployment and implementation. To ensure that the information is impartial and unbiased, this document provides a summary of comparisons done by third parties. The studies summarized in this document include:

• State of Oregon (OR)
• State of New York (NY)
• American Institute of Architects (AIA)
• Portland Cement Association (PCA)
• National Multi-Housing Council (NMHC)

It is important to note that these studies compare code text and its impact on building design and construction, but may vary in the degree of detail. While these comparisons are certainly relevant, such studies only scratch the surface of how each code may be interpreted and enforced, and the infinite number of possible building design and construction scenarios.

Three of the studies (OR, NY, and AIA) address the infrastructure supporting each code. Infrastructure includes education, training, technology evaluation, support services (such as plan review and interpretations), and certification of code officials and those in the building trades. These services are key to effective code implementation and must be considered during the jurisdiction’s adoption deliberations.

Of particular interest, only one study mentions the development processes of the subject codes. That study supports the ICC governmental consensus process. The study recognizes that the ICC governmental consensus process is a process similar to the one used to develop laws, which model codes become upon adoption, and is an appropriate process for developing model codes.

Issues Raised by the Studies

The studies raised multiple issues, including those listed below. ICC recommends decision-makers consider these issues during the review process.

• Usability
• Stringency
• Cost effectiveness
• Ability to foster acceptance of new technology
• Uniformity
• Comparability
• Costs to implement
• Costs to design to
• Costs associated with design submittals
• Probability that criteria can be enforced
• Existence of special inspections
• Understandability
• Protection of the public
• Support for the rehabilitation of existing buildings
• Ability to impact continued compliance
• “Islanding” versus comparability with other states
• Receptivity of the code to performance
• Predictability for the future
• Ease of participation in the process
• Availability of support services

• Impact on building insurance rates and availability
• Timeliness of updating
• Harmonization with other regulations
• Track record
• Familiarity
• Uniformity
• “Packaged” and “Interrelated” code documents
• Trust and reliability
• Protection of emergency personnel

The Studies Compiled

The studies provide insight from building officials, members of the fire service, producers, architects and builders (summaries are provided in Appendix A) and support a number of conclusions. These conclusions focus on issues associated with code compatibility within each model code set, technical differences in the codes and their related impact on enforcement, and the support infrastructure provided by the organizations developing the documents.

• There is universal support for the adoption of a complete, comprehensive, coordinated family of codes that are developed, maintained and supported by one organization with a long track record in code development and support for the codes. (The studies mention a concern about the longevity of partnership agreements between the competing organization and its partners to develop and maintain a complete and coordinated code set.)
• It is less expensive and requires fewer manpower resources to participate in ICC’s code development process and to implement the I-Codes. The ICC governmental consensus process is also considered more appropriate for establishing laws.
• ICC has an 18 month code revision process so the I-Codes can more quickly incorporate new technology and better enhance public safety.
• Because the majority of state and local codes are based on one of the model codes produced by ICC’s founding member organizations (BOCA NBC, ICBO UBC, or SBCCI SBC), they share a common format with the I-Codes. State and local governments find the I-Codes have a familiar format that coordinates with the existing state and local amendments applied to the previous model codes.
• Given the long-standing history and familiarity with the predecessor model codes, the adoption of the I-Codes across the nation is more likely to spur interstate trade and economic development. A singular code family without regional limitations benefits manufacturers by decreasing research & development costs associated with addressing multiple codes, and lowers end costs to the consumer.
• The International Existing Building Code, part of the I-Codes family, covers rehabilitation of existing buildings. The adoption of this code can foster redevelopment of older buildings, resulting in increased economic and environmental benefits for jurisdictions.
• The I-Codes provide comparable and compatible prescriptive and performance criteria. The competing code set was not found to address this issue.
• There are distinct differences between the technical requirements of the ICC and competing building codes. The I-Codes more effectively support of public safety and property protection on the issues of fire separation, stairway communication systems, fire protection of openings, treatment of multiple occupancies in one building, occupant load combinations, posting of occupant loads, egress in outdoor areas adjacent to buildings, door encroachment into means of egress, emergency lighting power supplies, roof access, width of egress ramps, ratings of exterior walls and fire walls, requirements for a second water supply in seismic areas, shaft protection, thresholds for requiring sprinklers, combustibility of exterior cladding, and building height in relation to requirements for sprinklers.
• ICC is a “one stop shop” for jurisdictions adopting the I-Codes. In one entity, ICC provides a familiar support infrastructure that facilitates a seamless transition by the building construction and code communities to new codes.

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4. *Comprehensive – Coordinated – Contemporary*, American Institute of Architects, Codes and Standards Committee, October 2002
Appendix A

Summary of Comparative Studies

State of Oregon


• The Oregon study was a joint effort by fire and building code agency appointees to compare the I-Codes and NFPA fire and building codes with the existing state codes (based on the Uniform Codes and some International Codes). The review committee looked at the code criteria, the code development and maintenance process, and the support services for the I-Codes and NFPA codes. Safety, costs, training, ease of use, state and local government impact, private sector impact, use and adoption at the national level, and ease of adoption for Oregon were factors considered.

• Oregon identified the need to have the building and fire codes come from the same set of published codes, and found the I-Codes to be more consistent with existing Oregon codes.

• From a structural standpoint, use of the NFPA 5000 would impose standards for seismic and wind loads that will add significant unjustified costs to construction in the state.

• NFPA 5000 makes extensive use of reference standards, creating greater dependence on them for key construction criteria and making the use of NFPA 5000 more challenging.

• The common code format between the IBC and UBC makes the transition to the I-Codes smoother, and current state amendments easier to apply to a new state code.

• The NFPA 5000 administrative chapter may have provisions that conflict with state law. A complete rewrite of those provisions would likely be necessary for Oregon to adopt the code.

• The IBC occupancies are in a format similar to Oregon’s current code, while NFPA’s are not.

• The ICC has a long history of building code development and support services. NFPA does not.

• While both fire codes could be made usable for Oregon, the IFC would best serve the state. The costs and burden to participate in the IFC development process would be less costly and cumbersome. The IFC is also a more complete and stand-alone document. The NFPA 1/Uniform Fire Code is still under development.

• Oregon feels a fully integrated set of model codes would be ideal for state adoption and that building, fire and mechanical codes must come from the same set of codes. The state also needs assurances that the codes will be coordinated over time – something that cannot be given if the different organizations develop the portions of a family of codes separately.

• By law, Oregon is required to adopt a residential code. Adopting the NFPA 5000, with its subsequent reference to the IRC, is not considered an acceptable alternative to adoption of a separate stand-alone residential code.

• NFPA 5000 contains both prescriptive and performance approaches to compliance in a relationship that is not clear. It will add confusion to code implementation and possible legal challenges.

• While NFPA will offer free training to state and local adopters, considered by the state be a possible breach of ethics, the use of the NFPA 5000 will require more extensive training that will place additional time demands on everyone involved. Oregon does not believe that
NFPA support for their code will equal that which the state has received from ICBO and expect to receive from the ICC.

- The I-Codes are the successors to the codes that Oregon has previously adopted. There is no demonstration that adoption of the NFPA codes would provide significant benefits that would exceed the benefits of adopting the I-Codes.

State of New York

The New York State study reviews the I-Codes (recently adopted in New York) and the previous state-developed code for New York. Key points are summarized below. While this study compares the I-Codes to New York State’s own code, not the I-Codes to the NFPA 5000, the results of the study are still relevant to an assessment of the I-Codes.

- Life safety is improved and there economic benefits associated with adoption of the I-Codes.
- Adoption of the I-Codes will allow New York to keep pace with evolving technology covering fire prevention and building construction.
- Adoption of the I-Codes will harmonize New York’s building and fire prevention regulations with other states. This standardization will make New York more competitive in attracting new jobs and business.
- Savings of 5% to 15% in construction costs, depending on type of construction, are expected with adoption of the I-Codes.
- The I-Codes are “state of the art” and much more compatible with construction techniques being utilized today.
- The I-Codes have an excellent proven safety record and will result in reduced costs, more timely and concise code enforcement and design decisions.
- The I-Codes have building rehabilitation provisions that will encourage development of vacant buildings, thereby enhancing state and local economies.
- If the I-Codes are not adopted, New York’s ISO insurance rating will increase and the opportunity to reduce insurance premiums by 10% will be lost.
- The ICC 18-month code revision cycle allows the state to keep up with new technology.
- The ICC affords an opportunity for national standardization; something important to U.S. trade.
- The I-Codes are a coordinated, integrated set of codes that will help avoid creation of conflicting regulations.
- With adoption of the I-Codes, there will be additional uniform training and educational opportunities because the state will be able to use the existing training, education, and other services available from ICC to support the codes.
- The I-Codes and support infrastructure allow for the timely consideration of innovative materials, methods of construction and acceptance of new technology.
- There will be reduced costs to state and local government when implementing the I-Codes.
- The adoption of one code throughout the U.S. will allow manufacturers to spend more resources on R&D and innovation, rather than putting resources into tracking and addressing multiple and duplicative codes.
- Performance requirements in the I-Codes allow for development of cost-effective solutions while protecting building occupants.
American Institute of Architects

A summary of conclusions drawn from a study conducted by the American Institute of Architects is as follows:

• Active participation in the NFPA process is costly and difficult at best due to the number, location and concurrent nature of meetings.
• The I-Codes are a family of coordinated codes. Questions remain about how the NFPA family of codes will be coordinated.
• The building design community is familiar with the I-Code format.
• The performance and prescriptive provisions of the NFPA 5000 code are distinct and separate paths to compliance. The performance approach provides only conceptual ideas that will be difficult to interpret and implement, while raising liability issues.
• Few enforcement professionals can afford to participate in the NFPA process. Participants are primarily consultants and association representatives.
• When comparing the requirements in the I-Codes and NFPA documents, one must look at both technical and administrative criteria. Both drive the design, costs of construction, safety, usability and many other key factors that collectively affect the success associated with the code.
• The ICC code text is usable, and can therefore be easily applied and implemented.

National Multi-Housing Council

The study conducted by the National Multi Housing Association focused on specific technical details in the code. The study contains the following findings:

• Fire command - The IBC provides a one hour separation for the fire command center, which leads to greater fire fighter safety and better protection of the fire command center. The NFPA 5000 does not provide any separation requirements.
• Stairway communication system – The IBC provides for a stairway communication system, leading to enhanced fire fighter safety. The NFPA 5000 does not have related criteria.
• Multiple occupancy in one building - The IBC defines how multiple occupancies are addressed and would require the building to meet the more stringent requirement associated with the occupancies involved.. The NFPA 5000 leaves this up to the designer, which could be inadequate from the standpoint of fire fighter safety.
• Posting of occupant loads – The IBC provides criteria on posting of occupant loads. The NFPA 5000 does not address posting occupant loads, which could lead to overcrowding.
• Outdoor areas – The IBC requires outdoor areas to comply with means of egress requirements. The NFPA 5000 does not address this issue, therefore the designer would have to include means of egress from the outside area in the building design. The absence of such provisions in NFPA 5000 could cause for overcrowding and insufficient means of egress.
• Door encroachment – The IBC limits door swing into the means of egress so that it does not interfere with the egress path. NFPA 5000 provides a minimum landing equal to the width of the door that would allow the door to block the egress path.
• Power supply for emergency lighting – The IBC provides more specific requirements than NFPA 5000, allowing for better lighting in an emergency.
• Restrictions on ramps – The IBC provides for a greater minimum width of ramps, prohibits projections and restricts doors opening into the means of egress. NFPA allows a narrower means of egress on ramps and 4-½” projections into the clear width on both sides, which restricts egress and access by fire fighters.

• Multiple tenants – The NFPA 5000 document has no restriction on tenant occupancies and control of passing through an adjacent tenant space, dwelling, unit, and guestroom as the IBC does. This lack of control on passing through other spaces not under the control of a tenant occupant could restrict egress and access by the fire department due to locked doors.

• Aisles in public areas – The IBC requires a wider means of egress when furniture or equipment is on both sides of the aisle, which allows better access by fire fighters compared to NFPA 5000.

• Secondary water supply – The IBC has a requirement for secondary water supply in seismic categories. NFPA 5000 does not require a backup water supply be provided in such situations.

**Portland Cement Association**

A comparative study by the Portland Cement Association found that the 2000 IBC provided for an increased level of fire protection compared to the NFPA 5000 in the following areas:

• Regarding provisions to prevent interior fire spread, and the protection of shaft enclosures for exit stairs and other shafts, the IBC provides a much higher level of fire protection than the NFPA 5000.

• Where sprinkler thresholds are required, the IBC is equivalent to NFPA 5000 on hospitals, provides higher protection for assemblies, and far exceeds NFPA 5000 on apartments.

• For provisions to prevent building-to-building fire spread relating to area increases for open space, fire protection.

• The IBC provides more rigorous requirements for fire wall ratings and materials.

• The IBC provides a higher level of protection on load bearing-ratings, nonload bearing-ratings and parapets for exterior walls.

• For limitations on the area of openings in exterior walls.

• On combustibility of exterior wall cladding.

• Regarding sprinkler tradeoffs for area and height increases.
NTTAA and OMB Circular A-119 - Key Points

Purpose of OMB A-119

To direct federal agencies to use voluntary consensus standards in lieu of government unique standards except where inconsistent with law or otherwise impractical. Agency must submit a report describing use of government-unique standards in lieu of voluntary consensus standards on OMB through NIST.

- OMB A-119 does not establish a preference between consensus and non-consensus standards
- It has not been the intent of the Circular to create the basis for discrimination among standards developed in the private sector, whether consensus-based, industry-based, or company-based
- In cases where no voluntary consensus standards exist, an agency may use government-unique standards

Definitions

Consensus - general agreement but not necessarily unanimity, including:
- process for attempting to resolve objections by interested parties;
- fair consideration of all comments;
- each objector being advised of the disposition of his or her objections and the reason; and
- consensus body members being given an opportunity to change their votes after reviewing the comments.

Non-consensus standards - standards which are developed in the private sector but not in full consensus process

Voluntary consensus standards - standards developed or adopted by voluntary consensus standards bodies

Voluntary consensus standards bodies - organizations which plan, develop, establish, or coordinate voluntary consensus standards using agreed-upon procedures, defined by the following attributes:
- Openness;
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Code Adoption Process by State

***Specific codes and code editions are not listed. For information on codes adopted in a particular jurisdiction, please visit: [http://www.iccsafe.org/gr/Pages/adoptions.aspx](http://www.iccsafe.org/gr/Pages/adoptions.aspx)

State of Alabama

Codes for non-state funded buildings are adopted on the local level. Revisions to the State Building Code, for state funded buildings only, are made by the Alabama Building Commission, in accordance with procedures of the Alabama Administrative Procedures Act.

State of Alaska

Codes in Alaska are adopted by administrative rulemaking by either the Alaska State Fire Marshal or the Department of Labor. The adopted codes by state agencies are mandatory and fall under state inspection programs unless a local jurisdiction has been delegated the code program as a “deferred jurisdiction.” When this occurs, the local jurisdiction administers and enforces their local program of the adopted state codes.

State of Arizona

Codes are adopted locally in Arizona and are now predominantly the I-codes with few exceptions.

State of Arkansas

The Arkansas State Fire Marshal’s office, State Department of Health and Human Services, and Energy Office adopts Arkansas’ codes.

State of California

Codes are adopted at the state level and are enforced on a statewide basis. Each local building and fire jurisdiction may amend these state codes providing their amendments are more stringent based on findings justified by climatic, geographic and topographical conditions of the jurisdiction.

State of Colorado

Codes are adopted first at the local level in Colorado under “home rule” with state agencies adopting building and safety codes which apply to projects under state purview. Issues of most concern to codes and adoption occur within the structure of the Department of Regulatory Affairs (DORA), Division of Fire Safety, State Forest Service, Department of Labor, Department of Public Safety and the Governor’s Energy Office (GEO).

State of Connecticut

The Codes and Standards Committee is responsible for reviewing and recommending which codes are adopted.
State of Delaware

Building Codes are adopted at the county and municipal level, and smaller towns generally defer to the counties for code enforcement.

District of Columbia

DC City Council is the adopting authority in the District of Columbia. Building regulations in DC are initially developed by Construction Codes Coordinating Board (CCCB) that is staffed by the DC Zoning Department and is made up of representatives of the building industry (builders, architects, contractors, unions, etc.). Oversight of building codes is through the Department of Consumer and Regulatory Affairs.

State of Florida

Codes are adopted statewide with mandatory enforcement through the Department of Community Affairs. The Florida Building Commission is the code amending agency.

State of Georgia

Codes are adopted at the state level through the GA Department of Community Affairs Building Codes Division and the GA State Codes Advisory Committee (GSCAC). Although adopted at the state level, the choice of enforcement is left up to local authority having jurisdiction.

State of Hawaii

The Hawaii 2007 Legislature created a new Building Code Council Agency that has the authority to adopt any code(s) statewide. The Four County jurisdictions have 2 years in which to adopt and amend the State Code with local amendments. If the county jurisdictions do not comply within the 2 year time line then the State Code becomes the county’s code until such time the county passes an adopting ordinance.

State of Idaho

Building codes in Idaho are adopted by state statute. Local governments have the option to adopt additional codes in addition to those codes named in statute. Local amendments to state codes must be no less than the requirements as adopted by the state.

State of Illinois

Currently, State Board of Education (ISBE) enforces the building codes. All other codes in the state are adopted by local municipalities, fire protection districts and counties.

State of Indiana

The Indiana Fire Prevention and Building Safety Commission is responsible for all building, fire safety and building efficiency code adoptions in the state.
State of Iowa
The State of Iowa imposes a combination of state required codes and locally adopted codes. When municipalities update their codes, they are required to update to the codes adopted by the state. The Iowa Plumbing and Mechanical Code Advisory council is responsible for the adoption of plumbing and mechanical codes in the state. Iowa codes including the Energy Code are adopted by the Iowa Building Code Bureau.

State of Kansas
The State of Kansas does not enforce a statewide building code, but authorizes local jurisdictions to adopt local building codes. State Fire Marshal enforces building codes for state owned buildings.

Commonwealth of Kentucky
The Kentucky Building Code (KBC) is updated every three years. Changes to the code by the Commonwealth of Kentucky are submitted to the Board of Housing, Buildings and Construction for review by the DHBC. The changes are approved in this forum and are forwarded to the Legislative Rulemaking Committee for public comment, further review and final approval. During the three-year cycle, proposed changes to the KBC may be submitted for consideration and voted upon by the board. The Division of Building Codes and Enforcement is responsible for complying with code changes and amendments. Once changes and amendments are adopted and entered as part of the state requirements, they become state law by the state statute.

State of Louisiana
Louisiana has a statewide adoption with mandatory enforcement of the Louisiana State Uniform Construction Code (LSUCC). The Louisiana State Uniform Construction Code Council (LSUCCC) is the promulgating authority of the LSUCC except the LSPC is promulgated by the Louisiana Department of Health and Hospitals (LDHH).

State of Maine
Maine adopts the Maine Uniform Building and Energy Code. Enforcement of the code is required for all communities with a population greater than 2000. The Technical Building Codes and Standards Board which is appointed by the Governor, resolves conflicts between state building and fire codes.

State of Maryland
The Department of Housing and Community Development is the state wide adopting authority. Local jurisdictions can amend the state codes to suit local conditions with the exception of the 2009 IECC and the 2006 MD Accessibility Code. Both codes can be made more stringent. Local jurisdictions can amend but must adopt the new editions although no penalties occur should a jurisdiction fail to adopt in a timely manner.
State of Massachusetts

The Massachusetts Building Code is approved and administered by the Board of Building Regulations and Standards (BBRS), consisting of eleven members and is staffed by the Department of Public Safety. The Board of Fire Prevention Regulations (BFPR) is a fourteen member board responsible for promulgating a comprehensive fire safety code (527 CMR) for the Commonwealth of Massachusetts. The BBRS is responsible for reviewing and recommending which building codes are adopted in Massachusetts. Additionally, the members of the BBRS comprise the Building Code Appeals Board for purposes of deciding appeals of interpretations of the Building Code made by building officials and other similar officials.

State of Michigan

The Michigan Construction and Fire Codes are promulgated by the Bureau of Construction Codes Commission and State Fire Safety Board, and are evaluated for revisions or modifications every three years. Once codes have been passed by those bodies, the regulations must be approved by the State Legislature. The code adoption process follows the I-Code three year cycle, with a target effective date in January one year following the release of the new I-Codes. Codes are updated as needed every year.

State of Minnesota

The adopting authority for the Minnesota State Building Code the Minnesota Department of Labor and Industry (DLI), Division of Building Codes and Standards. Jurisdictions that adopt building codes must adopt the Minnesota State Building Code. The Building Codes and Standards Division also has the authority to develop fire codes, but delegates the authority to the State Fire Marshal. The State Fire Marshal administers the Minnesota Fire Code.

State of Mississippi

The state of Mississippi does not have a statewide building code. Building code adoption and enforcement is primarily the responsibility of local jurisdictions. Mississippi does require that state buildings meet the requirements set forth in the 1997 Standard Building Code, mandatory for all jurisdictions.

State of Missouri

Although most relevant building codes are adopted locally, the state adopts codes for state owned buildings. The Architecture Practice act in Missouri directs architects to design to the 2009 International Building Code.

State of Montana

Construction regulation codes are adopted by the Bureau of Building and Standards within the Department of Labor and Industry with the exception of the fire code which is adopted by the Montana State Fire Marshal which is housed within the Department of Justice (Attorney General’s Office). Montana statute 50-60-202 provides wide authority to the bureau to adopt
any nationally recognized building code or standard with the exception of the authority held by the State Fire Marshal in statute 50-3-102 (2) to adopt by rule a state fire prevention code. Local jurisdictions adopt building codes by local ordinance or resolution by statutory authority under 50-60-301. Local adopted codes must be only those codes as adopted by the state. If a local jurisdiction chooses not to adopt codes locally, the state codes still apply. The significance of this is that state laws do not apply to residential building with less than five dwelling units. A local jurisdiction must adopt codes locally and the scope of the adoption must include dwelling units with less than 5 units specifically in order for codes (like the IRC) to enforceable.

State of Nebraska

Nebraska Statute 71-6406 authorizes local jurisdiction to adopt a building code, but jurisdictions that do so must adopt the International Building Code. The statute also requires that jurisdictions update their building codes within two years after a new edition is published. The State Energy Office is authorized to adopt alternate energy standards if they are equivalent to or more restrictive than the IECC.

State of Nevada

Codes are adopted locally in Nevada after regional adoption committees prepare suggested regional amendments.

State of New Hampshire

The New Hampshire State Building Code Review Board is charged with the coordination and adoption of the state building code. The Building Code Review Board is also responsible to hear appeals of variances or exceptions to the state fire code that have been granted or denied by the State Fire Marshal.

State of New Jersey

New Jersey’s Uniform Construction Code (UCC) adopts codes by regulation. The codes are administered by the Department of Community Affairs (DCA) Division of Codes & Standards. They are uniform statewide and local jurisdictions are not permitted to amend.

State of New Mexico

New Mexico adopts “blended” codes statewide. State code adoptions are facilitated by the New Mexico Construction Industries Division (CID). Current state law allows local adoptions of codes that are as restrictive as the state codes.

State of New York

The State Fire Prevention and Building Code Council (Code Council) is the statutory body charged with making any changes to the Uniform Code or Energy Code. The Code Council is chaired by the Secretary of State (or delegate) and is comprised of seventeen members representing all affected construction constituencies as well as local and state governmental
representatives. The Department of State is responsible for the oversight of the code enforcement community.

**State of North Carolina**

North Carolina has mandatory statewide code enforcement. The North Carolina building Code Council is the authority that oversees the code process.

**State of North Dakota**

The North Dakota Division of Community Services, Governmental and Technical Assistance Department is responsible for updating and amending the State Building Code. Local jurisdictions in North Dakota that adopt a building code must adopt the North Dakota State Building Code. Jurisdictions are permitted to amend the State Building Code to conform to local needs.

**State of Ohio**

Changes to the Ohio Building Code are promulgated by the Board of Building Standards, the primary state agency authorized to protect the public's safety and welfare in building design and construction. Rules proposed by the Board are filed with the Secretary of State, the Legislative Service Commission, and a committee of the General Assembly known as the Joint Committee on Agency Rule Review (JCARR) at least 60 days prior to adoption. Code changes usually follow the I-Codes three year cycle, promulgating the Ohio codes one year following and updating as needed.

**State of Oklahoma**

In 2009 the Oklahoma Legislature created the Oklahoma Uniform Building Code Commission (OUBCC). The OUBCC is responsible for the adoption of all codes and standards for the construction industry including; building, residential, energy conservation, existing buildings, plumbing, mechanical, fuel gas and fire codes. The State Fire Marshal’s office and the (OSFM) the Oklahoma Construction Industries Board (OCIB) also has adopting authority for particular codes.

**State of Oregon**

Codes in Oregon are adopted as statewide codes. Statutory authority is granted to the Oregon Building Codes Division to adopt building codes by administrative rulemaking. Buildings codes in the state are adopted as the “state program” and all local jurisdictions must enforce the state code, to the state agency’s specified level of enforcement. Fire code adoption is an administrative responsibility of the State Fire Marshal. The state adopted fire code is considered the “minimum” standard statewide. Local jurisdictions may adopt a fire code provided it is at least as restrictive as the code adopted by the State Fire Marshal.
State of Pennsylvania

The state adopts by law the IBC and all codes referenced by the IBC except for Property Maintenance. Local jurisdictions can amend the state code to be more restrictive, but these ordinances can be appealed to the Secretary of Labor & Industry, who then holds a hearing and determines whether the local amendment will be allowed. The codes are updated following the issuance of new editions of the ICC codes every three years. The Review & Advisory Council (RAC) reviews the changes from the previous edition, takes input from interested parties and recommends whether any change should not be included in the updated codes adopted by the state. The updated codes are then adopted through the regulatory process.

State of Rhode Island

The Rhode Island Building Code is approved and administered by the Building Code Standards Committee which is comprised of twenty three members. Under State Law, this Committee is responsible for maintaining currency of state building codes such as mechanical, plumbing, electrical, conservation, accessibility and minimum housing codes. The Committee also acts as a Board of Appeals to hear requests for variances or appeals from the State Building Code Commission or from local Boards of Appeals. The Rhode Island Fire Code is administered by Rhode Island Fire Safety Code Board of Appeal and Review which is comprised of eleven members.

State of South Carolina

The SC Building Code Council adopts the codes at the state level and statutes require statewide enforcement by local governments. There is also a provision that allows jurisdictions to opt out.

State of South Dakota

South Dakota does not have a statewide building code. The only state authority is the State Fire Marshal and is authorized to update the codes through the state rule-making process. The state authorizes counties and local governments to adopt model building codes, with the restriction that they adopt the IBC. Jurisdictions are permitted to amend the State Codes to conform to local needs.

State of Tennessee

The State Fire Marshal’s Office is responsible for the enforcement of codes in the built environment which includes building, both commercial and residential, plumbing, mechanical, electrical, life safety, and energy conservation. Municipal jurisdictions in Tennessee are either classified as exempt or non-exempt in regards to the adoption of local codes. A municipal jurisdiction may be classified as exempt from state enforcement if they have an approved code enforcement department with certified inspectors. An exempt jurisdiction can adopt any code as long as it is at least as strong as the state code.
State of Texas

Texas mandates building codes for all municipalities adopting codes, excluding most unincorporated areas, except for the IECC. The building and residential code are promulgated through legislation. The energy conservation code and are promulgated through the State Energy Conservation Office (SECO) by Administrative Rule. Municipalities can make local amendments and adopt newer editions of the International Building Code, International Residential code and International Energy Conservation Code at will.

State of Utah

For the past several years, Utah State Statute 58-56-4 required statewide adoption of a building code, residential code, plumbing code, mechanical code, and fuel gas code promulgated by a nationally recognized code authority. The 2009 passage of SB211 moved the adoption authority to the state legislature. The Uniform Building Code Commission is now required to make adoption recommendations to the interim Senate Business and Labor Committee.

State of Vermont

Since 1972, Vermont has adopted and enforced national codes for commercial building safety. These codes are adopted by regulation and enforced through the Vermont State Fire Marshal’s Office.

Commonwealth of Virginia

Under Virginia Law the Department of Housing and Community Development (DHCD) has authority to promulgate building regulations and a regulatory process for development and adoption of a statewide mandatory mini/maxi construction code that all 167 units of local government (counties and incorporated cities) must adopt and implement. Implementation for state colleges and universities is the responsibility of the Virginia General Services Department. The State Fire Marshall who is within DHCD is responsible for statewide implementation of the Fire Code, unless localities elect to adopt this code at the local level. Localities can and do adopt the Property Maintenance Code, which is within the scope of the statewide code.

State of Washington

Building codes are adopted in Washington by statute. The Washington State Building Code Council has authority to adopt amendments to these codes for statewide application.

State of West Virginia

The West Virginia State Fire Commission is responsible for adopting, promulgating, and amending statewide construction codes. The Administrative Procedures Act requires public hearings on the adoption of all codes by the State Fire Commission. When the State Fire Commission proposes to adopt a code, the code is filed with the Secretary of State. The commission conducts a public hearing and can modify the rule with the Secretary of State as an
agency-approved rule. The rule is then filed with the Legislative Rule-Making Review Committee. Once the rule is approved or modified by the Legislative Rule-Making Review Committee, it is introduced as a separate bill during the legislative session. Legislation need not be initiated by the State Fire Commission; the legislature can modify the code by proposing legislation at any time during the regular session.
State of Wisconsin
The Wisconsin Department of Commerce, Safety and Buildings Division, is responsible for the adoption of Wisconsin’s building, fire safety and energy efficiency codes.

State of Wyoming

Wyoming statute 35-9-106 assigns authority to the Wyoming State Fire Marshal to establish minimum fire standards that are not to exceed the standards of the I-Codes for all new and existing buildings. Other Wyoming departments also have latitude to adopt codes as it pertains to the scope regulated within their department.
SUPPORT FOR ADOPTION OF INTERNATIONAL CODES

The International Code Council is proud of the hundreds of experts who regularly contribute to the development of the suite of International Codes. The resulting code documents are issued after months of debate, review of code submittals, committee discussions and public hearings. These codes represent the consensus of diverse stakeholder experts with final decisions made by governmental members charged with enforcing and applying the codes in their jurisdictions.

The Code Council, which advocates for the un-amended adoption of the ICC Family of Codes and Standards, has developed a support infrastructure to assist jurisdictional authorities with implementation of new editions of the International Codes.

We encourage governmental members to work through the ICC code development process to effect changes to the I-Codes that address their specific needs. There are numerous benefits to this approach, including: what jurisdictions learn from each other through interaction in the code development process; savings to the jurisdictions in terms of time and money; and, keeping the I-Codes on the leading edge of building science which strengthens all communities.

The ICC Family of Codes are designed in an integrated fashion, referencing other codes and incorporating the latest in technology and best field practices, with maximum benefit to the public health, safety and welfare in mind. The failure to adopt the most current editions of model codes in their entirety deprives a jurisdiction of a national consensus on the safest and most sustainable tools for communities.

At the same time we recognize the sovereign right of jurisdictions to adapt the I-Codes based on special geographic or climatic needs, for example. During the adoption process, Code Council staff serves in a supporting role to the adopting authority. ICC stands ready to provide jurisdictions with rationale for existing code provisions, assist in identifying potential conflicts with correlation of regulations, assist with interpretations and code comparisons, and support technical committees chartered to review the I-Codes.

We encourage jurisdictions to send a full complement of eligible voters to our hearings, and industry and other interested parties to submit code change proposals and present expert testimony. As the Code Council strives to continuously improve access and increase participation in the code development process, we invite our stakeholders to work equally hard to contribute to these important tools for creating a safer and more sustainable world. The Code Council remains available to provide expert information regarding the value of our codes, and the process that leads to their development.
Increasingly, business competition in the marketplace is spilling over into the public policy arena. Whether in small entrepreneurial companies or big corporations, managers are attempting to change the rules of the game by which business is played through actively influencing the public policy process. And as with competition in the marketplace, competition in the political arena has significant implications for companies' bottom line performance. Effective business strategies consequently may require managers to design and execute competitive political strategies as well as competitive marketplace strategies. Here are just a few examples:

Financial services: A massive wave of mergers and acquisitions already has been set off by changes in public policy that have allowed interstate banking and that allow some involvement of banks in the securities business. Meanwhile, in Congress, all the key players in financial services (banks, insurers, brokers, credit unions, etc.) continue to battle over even more comprehensive legislation that will determine the nature and dynamics of competition in the enormous financial services sector into the next century.

Electric utilities: Ongoing political debates about deregulation in the electric utility sector are shaping the future of what is currently a $300 billion industry. Many established utilities saddled with tens of billions of dollars in uncompetitive investments (nuclear plants, etc.) are pushing for gradual, state-by-state deregulation in which they are allowed to recover these costs. Meanwhile, the more well-positioned energy providers (especially a number of aggressive newcomers) are pushing for much more rapid and comprehensive federal deregulation. The pace and details of deregulation policies will largely determine the winners and losers in this massive, ongoing industry restructuring.

High-technology: The wave of antitrust actions against Microsoft that has gathered so much media attention did not simply emerge from the offices of well-intentioned government bureaucrats. Instead, Microsoft's hi-tech rivals have played a key role in initiating and supporting antitrust investigations by the Justice Department, the Federal Trade Commission and various state attorneys general. Regardless of how these actions eventually are settled, the fact is that Microsoft already has substantially curbed a number of its more aggressive sales and marketing tactics in response.

Telecommunications: The battle over competition in telecommunications continues to be waged among local phone companies, long-distance providers, cable companies, and now even Internet providers. Even two years after the comprehensive Telecommunications Reform Act passed Congress in 1996, the key players in the fast-changing telecommunications industry have continued their rivalries in state and federal regulatory agencies and in the courts. Similar battles continue to be waged in a variety of other industries. The reality that more and more managers are confronting is that, whether big or small, hi-tech or low-tech, no company or industry is exempt from the effects of public policy on competition and performance.

So, what does it take to effectively compete in the public policy process? All the media hype about corporate campaign contributions buying off legislators and about smoke-filled rooms crowded with slick,
manipulative, Gucci-clad lobbyists is misleading. As most companies discover when they wade into the public policy arena, the truth is hardly so simple. The influence of money on the public policy process is greatly exaggerated, and the role of professional lobbyists is hardly so sinister. Instead, public policy is largely determined by those who are most effective at making their case and, perhaps most importantly, by those who can back up their case with significant, broad-based political support.

Understand the Public Policy Process

As many executives are quick to note, politicians and bureaucrats often do not seem to know very much about business. What is perhaps just as true in reverse is that business people often understand very little about politics. Understanding the public policy process is a critical first step to more successfully managing the political environment. Policies that affect business are decided at several different levels (local, state, federal, international) and at several different stages of the process (legislative, executive or regulatory, and judicial). Each level and each stage of the public policy process can be thought of as a particular venue for analysis and action.

What also is critical to remember is that the public policy process never ends. Even after legislation is passed, responsibility for the all-important details of interpretation and implementation typically are passed to executive or regulatory agencies and eventually also to the courts. After comprehensive telecommunications legislation passed Congress in 1996, for example, the mechanics of interpretation and implementation were passed to the Federal Communications Commission and now, because of the actions of many competitors, also are being argued in the federal courts. Some in Congress even are considering re-opening the whole legislative debate on telecommunications policy yet again. Victory or defeat at one stage of the public policy process rarely means that the battle is over.

Be Proactive and Strategic

Successful management of the public policy process requires proactive monitoring for both threats and opportunities in the political environment. For example, many health care companies were initially caught by surprise in the health care reform debate that swept the country in the early 1990s. The debate started at the state level, where many companies were not paying attention, before being picked up at the national level in the presidential campaign of 1992. As a result, many executives were caught off-guard and scrambled for months to try to effectively have their voice heard in the debate. To avoid being caught by surprise yet again, one large pharmaceutical company now uses its thousands of sales representatives all over the country as an early-warning system to actively monitor public policy trends at the local and state levels.

Ongoing involvement in the political process is just as critical. It is much easier to influence legislation at the early stages, for example, than to try to stop a legislative bandwagon once it has built momentum on the floor of the House or Senate. Much of successful participation in public policy depends on building long-term relationships and trust with key policy-makers that cannot be developed overnight.

It is critical to have the top management team involved on an ongoing basis. Business executives have a tremendous amount of influence with policy-makers. They are perceived as credible and authoritative sources for information and opinions on important economic and industry-related issues. Typically, however, many executives have been reluctant to participate actively in public policy, because they frequently perceive it as an adversarial process. But without the active involvement of top executives, it is
difficult to make convincing arguments and build a strong case. Hired professional lobbyists can play a 
supporting role, but they cannot substitute for direct involvement of senior executives.

Build Grassroots Support and Political Alliances

What many companies overlook or do not understand when they wander into the political arena is that 
broad and deep grassroots support is the single most powerful means by which to influence public policy. 
Nothing is more influential than to have a large and committed group of stakeholders who are educated on 
a policy issue and who are actively involved in the political process. In contrast, big campaign contributions, 
high-priced professional lobbyists and slick ad campaigns are unlikely to win an issue in the face of 
significant grassroots opposition. The companies with the most effective political strategies have realized 
that educated and mobilized corporate stakeholders can be their most potent political assets.

Policy-makers pay attention to, and respond to, feedback from their constituents. This is a key reason why 
groups such as the National Federation of Independent Business or the National Restaurant Association 
often are much more effective players in the public policy process than are the largest corporations. These 
organizations typically are much better at educating their members on key policy issues and, in particular, 
are much more effective at mobilizing these members to become actively involved in the political arena 
such as by contacting their members of Congress. Educating, organizing and mobilizing stakeholders such 
as managers, employees, customers and suppliers who have a common interest in an issue is a highly 
effective means of influence.

But even with significant grassroots support of all of a company’s stakeholders, no single company can 
hope to successfully influence most public policy issues on its own. Instead, the building and nurturing of 
issue coalitions and strategic political alliances is likely to be necessary. Only then can a sufficient level of 
broad-based grassroots support be generated that will be able to carry an issue.

Conclusion

In the past, it was more common for executives to treat all things political as simply minor inconveniences 
or nuisances. Now, many top executives instead see the political process as a central fact of doing business, 
for good or for bad a fact that they cannot afford to ignore. In fact, many managers even are perceiving and 
generating opportunities to enhance their competitiveness through public policy. Rather than simply react 
defensively to some proposed regulation or legislation, more companies and industries instead are 
proactively trying to shape public policy for their strategic advantage. In the contemporary business 
environment, companies that ignore the public policy process consequently are likely to find their 
competitiveness and performance diminished.

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When I was a congressman representing a South Florida district, I appreciated meeting with constituents who could communicate their message effectively. They knew the basics that I myself now follow as a lobbyist. They had a clear message, they could deliver their points quickly, and they were respectful of my time.

Unfortunately, not everyone follows these basics. This is why even the most seasoned lobbyist needs to ask if his or her association members/advocates really know the particulars of an effective Hill visit. I have been on the Hill for 40 years as a congressman, staffer and lobbyist, and even I still come away from certain meetings saying I wish I had prepared a little more.

From my vantage point, there are several critical areas that need to be reviewed occasionally to keep visits sharp and on point. First and foremost, make sure everyone is on message. Otherwise, you will fail from the word go. To ensure success, I find it best if a visiting local group designates one spokesman who can articulate a clear message quickly. At the same rate, everyone in the group still needs to be prepared to help the spokesman and answer questions.

Time management is critical. In our credit union world, we sit people down and teach them to stick to three top points. We caution our folks that small talk should last no longer than the 30 seconds it takes to greet the member and walk to a chair. We advise our citizen-advocates to recognize the member's typically hectic schedule and have them say, "I know you're busy, so let me get right to the point."

When such lessons are not followed, the results can be disastrous. Years ago, a group and I had rehearsed for a visit with a senior ranking senator. The group's spokesman was prepped and ready to go. When he entered the senator's office, he noticed a picture on the wall, asked the senator about it and lost focus. All the spokesman and senator talked about was the photo, and then suddenly the lawmaker had to leave. The entire purpose for the visit was never discussed.

It's another example of why association and interest group members need to know that congressional schedules can be juggled around at any moment. I can say from firsthand experience that 90 percent of what's scheduled is beyond a member's control. When that bell rings for a vote, it's time to go; when a local TV crew needs an urgent interview, it's time to go; when a colleague, the governor or a mayor calls with a crisis, it's time to go.

You would be surprised by what can happen when folks enter a congressional office. In my two decades as a lobbyist, I've seen more than one Fortune 500 chief executive become speechless in front of members and administration officials. If it can happen to them, it can happen to anyone.

Folks still violate the old but essential rule: Never assume. Case in point - folks assume the member they are meeting with shares their level of focus on an issue.

When I was in the House, I witnessed this error all the time. I would be running from one hearing to the next or darting to a news conference, and a constituent would meet with me for a brief visit. While this constituent was well-meaning and sincere, he or she might say something like, "Congressman Mica, please support us on H.R. 2163" or "Help us on H.R. 32." So as to avoid embarrassing them or me, I would nod and say, "Thank you so much. I'm really pleased that you shared your views with me." When the constituent left, I had to ask my staff what the visitor was talking about.

There will be times when constituents will disagree with a member, and people may be tempted to lose their sense of decorum. Therefore, it is important to remind folks to show basic respect and courtesy at all times, no matter what they may think of the member. I recall an incident some years ago during which a hometown constituent became so upset that he poked his index finger into a member's chest to make a point. The member later called me, and I had a lot of apologizing to do on behalf of our group.

It also is critical to remind advocates about the importance of working with staff. There is a tendency for groups to focus solely on the member, when the staff is just as important. After every meeting on the Hill, I find out the name of the key staffer handling my issue, and immediately write that person a summation of what the member and I agreed upon. It's the staffer who will be responsible for getting the message to the member.

Last but not least, folks need to be reminded about thinking on their feet - literally. The 20-minute meeting that was scheduled in the senator's office may turn into a brief walk-and-talk from one hearing to the next. The mantra to advocates is the same today as it was when I was in Congress: You've got five minutes to meet. Be smart and make those five minutes work to your advantage.

Mica is the president and chief executive of the Credit Union National Association, which represents nearly 8,500 credit unions.
unions with 90 million members. He was a congressman (D-Fla.) from 1979-89.
Ten Commandments of Lobbying from AIA Illinois

1. Be honest.

2. Be brief.

3. Be polite.

4. Know your message and stick to it.

5. Do not disparage other constituencies or interest groups when making your points.

6. Relate legislation to your personal experiences whenever possible.

7. Do not argue or be critical.

8. Specifically ask for support of your position.

9. Thank your Senator and Representative for their time.

10. Stay in touch with your legislator; at the least write a thank you note for the meeting, reminding the legislator of the issues you discussed.
Thursday
February 19, 1998

Part IV

Executive Office of the President

Office of Management and Budget

OMB Circular A–119; Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities; Notice
EXECUTIVE OFFICE OF THE PRESIDENT

Office of Management and Budget

OMB Circular A–119; Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities

AGENCY: Office of Management and Budget, EOP.

ACTION: Final Revision of Circular A–119.

SUMMARY: The Office of Management and Budget (OMB) has revised Circular A–119 on federal use and development of voluntary standards. OMB has revised this Circular in order to make the terminology of the Circular consistent with the National Technology Transfer and Advancement Act of 1995, to issue guidance to the agencies on making their reports to OMB, to direct the Secretary of Commerce to issue policy guidance for conformity assessment, and to make changes for clarity.


FOR FURTHER INFORMATION CONTACT: Virginia Huth (202) 395–3785.

SUPPLEMENTARY INFORMATION:

I. Existing OMB Circular A–119

II. Authority

III. Notice and Request for Comments on Proposed Revision of OMB Circular A–119

IV. Discussion of Significant Comments and Changes

I. Existing OMB Circular A–119

Standards developed by voluntary consensus standards bodies are often appropriate for use in achieving federal policy objectives and in conducting federal activities, including procurement and regulation. The policies of OMB Circular A–119 are intended to: (1) Encourage federal agencies to benefit from the expertise of the private sector; (2) promote federal agency participation in such bodies to ensure creation of standards that are useable by federal agencies; and (3) reduce reliance on government-unique standards where an existing voluntary standard would suffice.

OMB Circular A–119 was last revised on October 20, 1993. This revision stated that the policy of the federal government, in its procurement and regulatory activities, is to: (1) "[r]ely on voluntary standards, both domestic and international, whenever feasible and consistent with law and regulation;" (2) "[p]articipate in voluntary standards bodies when such participation is in the public interest and is compatible with agencies’ missions, authorities, priorities, and budget resources;" and (3) "[c]oordinate agency participation in voluntary standards bodies so that * * * the most effective use is made of agency resources * * * and [that] the views expressed by such representatives are in the public interest and * * * do not conflict with the interests and established views of the agencies." (See section 6 entitled “Policy”).

II. Authority

A authority for this Circular is based on 31 U.S.C. 1111, which gives OMB broad authority to establish policies for the improved management of the Executive Branch.

In February 1996, Section 12(d) of Public Law 104–113, the “National Technology Transfer and Advancement Act of 1995,” (or “the Act”) was passed by the Congress in order to establish the policies of the existing OMB Circular A–119 in law. (See 142 Cong. Rec. H1264–1267 (daily ed. February 27, 1996) (statement of Rep. Morella); 142 Cong. Rec. S1078–1082 (daily ed. February 7, 1996) (statement of Sen. Rockefeller); 141 Cong. Rec. H14333–34 (daily ed. December 12, 1995) (statements of Reps. Brown and Morela)). The purposes of Section 12(d) of the Act are: (1) To direct “federal agencies to focus upon increasing their use of [voluntary consensus] standards whenever possible,” thus, reducing federal procurement and operating costs; and (2) to authorize the National Institute of Standards and Technology (NIST) as the “federal coordinator for government entities responsible for the development of technical standards and conformity assessment activities,” thus eliminating “unnecessary duplication of conformity assessment activities.” (See Cong. Rec. H1262 (daily ed. February 27, 1996) (statements of Rep. Morela)).

The Act gives the agencies discretion to use other standards in lieu of voluntary consensus standards where use of the latter would be "inconsistent with applicable law or otherwise impractical." However, in such cases, the head of an agency or department must send to OMB, through NIST, "an explanation of the reasons for using such standards." The Act states that beginning with fiscal year 1997, OMB will transmit to Congress and its committees an annual report summarizing all explanations received in the preceding year.

III. Notice and Request for Comments on Proposed Revision of OMB Circular A–119

On December 27, 1996, OMB published a “Notice and Request for Comments on Proposed Revision of OMB Circular A–119” (61 FR 68312). The purpose of the proposed revision was to provide policy guidance to the agencies, to provide instructions on the new reporting requirements, to conform the Circular’s terminology to the Act; and to improve the Circular’s clarity and effectiveness.

On February 10, 1997, OMB conducted a public meeting to receive comments and answer questions.

In response to the proposed revision, OMB received comments from over 50 sources, including voluntary consensus standards bodies or standards development organizations (SDOs), industry organizations, private companies, federal agencies, and individuals.

IV. Discussion of Significant Comments and Changes

Although some commentators were critical of specific aspects of the proposed revision, the majority of commentators expressed support for the overall policies of the Circular and the approaches taken. The more substantive comments are summarized below, along with OMB’s response.

The Circular has also been converted into “Plain English” format. Specifically, the following changes were made. We placed definitions where the term is first used; replaced the term “must” with “shall” where the intent was to establish a requirement; created a question and answer format using “you” and “I”; and added a Table of Contents.

We replaced proposed sections 6, 7 and 10 (“Policy,” “Guidance,” and “Conformity Assessment”) with sections 6, 7, and 8, which reorganized the material. We reorganized the definitions for “standard,” “technical standard,” and “voluntary consensus standard.” We reorganized proposed section 8 on “Procedures” into sections 9, 10, 11, 12. For clarity, we have referenced provisions by their location both in the proposed Circular and in the final Circular.

Proposed Section 1—Purpose. Final Section 1

1. Several commentators suggested that this section should be modified to make clear that the primary purpose of
the revision of the Circular is to interpret the provisions of section 12(d) of Pub. L. 104-113 so that federal agencies can properly implement the statutory requirements. We revised the wording of this section to reflect this suggestion.

Proposed Section 2—Rescissions. Final Section 1

2. We moved this section to Final Section 1.

Proposed Section 3—Background. Final Section 2

3. Several commentators suggested substituting “use” for “adoption” in this section to conform to the new set of definitions. We agree, and we modified the final Circular.

Proposed Section 4—Applicability. Final Section 5

4. Several commentators found this section unclear. One commentator suggested deleting “international standardization agreements,” suggesting this section could be interpreted as conflicting with proposed section 7a(1) which encouraged consideration of international standards developed by voluntary consensus standards. We agree, and we modified the final Circular.

Proposed Section 5a—Definition of Agency. Final Section 5

5. A commentator suggested defining the term “agency mission.” Upon consideration, we have decided that this term is sufficiently well understood as to not require further elaboration; it refers to the particular statutes and programs implemented by the agencies, which vary from one agency to the next. Thus, we did not add a definition.

6. A commentator questioned whether federal contractors are intended to be included within the definition of “agency.” Federal contractors do not fall within the definition of “agency.” However, if a federal contractor participates in a voluntary consensus standards body on behalf of an agency (i.e., as an agency representative or liaison), then the contractor must comply with the “participation” policies in section 7 of this Circular (i.e., it may not dominate the proceedings of a voluntary consensus standards body).

Proposed Section 5b—Conformity Assessment. Final Section 8

7. In response to the large number of commentators with concerns over the definition of conformity assessment, we have not defined the term in this Circular but to defer to NIST when it issues its guidance on the subject. The Circular’s policy statement on conformity assessment is limited to the statutory language.

Proposed Section 5c—Definition of Impractical. Final Section 6a(2)

8. A commentator suggested that if an agency determines the use of a standard is impractical, the agency must develop an explanation of the reasons for impracticality and the steps necessary to overcome the use of the impractical reason. We decided that no change is necessary. The Act and the Circular already require agencies to provide an “explanation of the reasons.” Requiring agencies to describe the steps necessary “to overcome the use of the impractical reason” is unnecessarily burdensome and not required by the Act.

9. A commentator suggested that the definition of “impractical” is too broad and proposed deleting words such as “infeasible” or “inadequate.” We have decided that the definition is appropriate, because things that are infeasible or inadequate are commonly considered to be impractical. Thus, we made no change.

10. A commentator suggested changing the phrase “unnecessarily duplicative” because it is unlikely that a voluntary consensus standard that was considered “impractical” would also be “unnecessarily duplicative.” We agree, and the final Circular is modified accordingly.

11. A few commentators suggested adding “ineffuctual” to the definition. A few other commentators suggested adding the phrase “too costly or burdensome to the agency or regulated community.” Another commentator suggested the same phrase but substituted the term “affected” for “regulated.” We have decided that concerns for regulatory cost and burden fall under the term “inefficient” contained in this definition. Thus, we made no change.

12. A few commentators suggested deleting the term “demonstrably” as it implies a greater level of proof than that required in the Act. Upon consideration, we have decided that the term “demonstrably” is unnecessary, as the Act already requires an explanation, and it may be reasonably inferred that an explanation can be demonstrated. Thus, we deleted the term.

Proposed Section 5d—Definition of Performance Standard. Final Section 3c

13. A commentator suggested deleting the “and” in the definition. We have decided that this suggestion would distort the meaning. Therefore, no change is made.

14. A few commentators suggested substituting the term “prescriptive” for “design” because of the multiple connotations associated with the term “design.” In addition, several commentators suggested related clarifying language. We agree, and we modified the final Circular.

Proposed Section 5f—Definition of Standard. Final Section 3

15. Several commentators suggested overall clarification of this section, while other commentators endorsed the proposed section. One commentator suggested that “clarification is necessary to distinguish the appropriate use of different types of standards for different purposes (i.e., acquisition, procurement, regulatory).” This commentator proposed that, “For example, regulatory Agencies should only rely upon national voluntary consensus standards (as defined in Section 5j) for use as technical criteria in regulations but a federal agency may want to use industry-developed standards (without a full consensus process) for certain acquisition purposes if there are no comparable consensus standards.” We do not agree with this proposal. The same general principles apply in the procurement context as in the regulatory context.

16. A commentator suggested that the definition of “standard” be limited to ensure that agencies are only required to consider adopting voluntary “technical” standards. The final Circular clarifies this by clearly equating “standard” with “technical standard.”

17. One commentator recommended adding to the definition of “standard” an exclusion for State and local statutes, codes, and ordinances, because agency contracts often require contractors to meet State and local building codes, which contain technical standards which may not be consensus-based. For example, the Department of Energy builds facilities that must be complaint with local building codes, which may be more strict than nationally accepted codes. It is not the intent of this policy to preclude agencies from complying with State and local statutes, codes, and ordinances. No change is necessary, because the Act already states that, “If compliance * * * is inconsistent with applicable law * * * a Federal agency may elect to use technical standards that are not developed or adopted by voluntary consensus standards bodies.”

Proposed Section 5g—Definition of Standard. Final Section 4

18. Several commentators had concerns with this section, believing that the final sentence in the proposed
version might imply that other-than-consensus standards may qualify as consensus processes. This is not the case. We have clarified this point through the reorganization of final sections 3 and 4 and through minor clarifying language. In addition, we note that the subject of the Circular is "voluntary consensus standards," which are a subset of "standards." Consistent with the 1993 version, the final Circular defines "standard" generally to describe all the different types of standards, whether or not they are consensus-based, or industry- or company-based. Accordingly, we have inserted the phrase "government-unique" in final section 4b(2) in order to provide a complete picture of the different sources of standards, while also adding a reference to "company standards" in final section 4b(1), previously found in the definition of "standard."

Proposed Section 5g—Definition of Technical Standard. Final Section 3a

19. Several commentators suggested combining this term with the definition of standard. We agree, and the terms have been merged.

20. Another commentator suggested adding the phrase "related management practices" because this phrase appears in Section 12(d)(4) of the Act. We agree, and we modified the final Circular.

Proposed Section 5h—Definition of Use. Final Section 6a(1)

21. Several commentators suggested that limiting an agency's use to the latest edition of a voluntary consensus standard was unnecessarily restrictive. We agree, and we modified the final Circular.

Proposed Section 5i—Definition of Voluntary Consensus Standards. Final Section 4

22. Several commentators objected to the phrase regarding making "intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to all interested parties." Several commentators also supported this language. This section does not limit the ability of copyright holders to receive reasonable and fair royalties. Accordingly, we made no change.

Proposed Section 5j—Voluntary Consensus Standards Bodies. Final Section 4a(1)

23. Several commentators proposed that the words "but not necessarily unanimity" be inserted for clarification. We agree, and we modified the final Circular.

24. A commentator suggested deleting the examples of voluntary consensus standards bodies. We agree that the examples were unnecessary and confusing, and we modified the final Circular.

25. A few commentators suggested that the Circular acknowledge the American National Standards Institute (ANSI) as the means of identifying voluntary consensus standards bodies. Since the purpose of the Circular is to provide general principles, rather than make determinations about specific organizations or guides, these determinations will be made by agencies in their implementation of the Act. Thus, we made no change.

26. A commentator suggested that the definition be modified so "that only those organizations that permit an acceptable level of participation and approval by U.S. interests can be considered to qualify." We have decided that no change is necessary, because the requirements of consensus—openness, balance of interests, and due process—likewise apply to international organizations.

27. The same commentator suggested adding the phrase the absence of sustained opposition to the definition of "consensus." Although we did not make this change, we added other language that improves the definition.

28. Several commentators proposed that the Circular further clarify aspects of this section, including further definitions of balance of interest, openness, and due process. We have decided that the definition provided is sufficient at this time, and no change is made.

29. Several commentators proposed that this definition should be "clarified to state the Federal agencies considering the use of voluntary consensus standards, not the organizations themselves, are to decide whether particular organizations qualify as voluntary consensus standards bodies by meeting the operational requirements set out in the definition." For purposes of complying with the policies of this Circular, agencies may determine, according to criteria enumerated in final section 4, whether a standards body qualifies. However, it is the domain of the private sector to accredit voluntary consensus standards organizations, and accordingly, we have inserted clarifying language in final section 6.

Proposed Section 6a. Final Section 6c

33. In the proposed revision of the Circular, sections 6b and 7b(2) were strengthened by adding language that directed agency representatives to refrain from actively participating in voluntary consensus standards bodies or their committees when participating did not relate to the mission of the agency. Several commentators were not satisfied with these changes and remain concerned that an agency member might dominate a voluntary consensus standards body as a result of the agency member chairing and/or providing funding to such body, thus making the process not truly consensus. These commentators urged additional limitations on agency participation in voluntary consensus standards bodies, including prohibiting federal agency representatives from chairing committees or voting (or if chairing a committee, then denying them the authority to select committee members); having only an advisory role; participating only if directly related to an agency's mission or statutory authority; and participating only if there is an opportunity for a third party challenge to the participation through a public hearing.

On the other hand, most commentators supported the proposed changes and agreed that federal participation in voluntary consensus
standards bodies should not be further limited, because federal participation benefited both the government and the private sector. These commentators noted that agencies must be involved in the standards development process to provide a true consensus and to help support the creation of standards for agency use. These purposes are consistent with the intent of the Act.

In the final Circular, we have added language to clarify the authorities in the Circular. We have also strengthened the final Circular by adding language in final section 7f that directs agency employees to avoid the practice or the appearance of undue influence relating to their agency representation in voluntary consensus standards activities. We would also like to underscore the importance of close cooperation with the private sector, including standards accreditors, in ensuring that federal participation is fair and appropriate.

With respect to imposing specific limitations on agency participation in such bodies, which would result in unequal participation relative to other members, we have decided that such limitations would (1) not further the purposes of the Act and (2) could interfere with the internal operations of voluntary consensus standards organizations.

First, the Act requires agencies to consult with voluntary consensus standards bodies and to participate with such bodies in the development of technical standards “when such participation is in the public interest and is compatible with agency and departmental missions, authorities, and budget resources.” The legislative history indicates that one of the purposes of the Act is to promote federal participation. [See 141 Cong. Rec. H14334 (daily ed. December 12, 1995) (Statement of Rep. Morella.)]

Moreover, neither the Act nor its legislative history indicate that federal agency representatives are to have less than full and equal representation in such bodies. Given the explicit requirement to consult and participate and no concomitant statement as to any limitation on this participation, we believe the Act was intended to promote full and equal participation in voluntary consensus standards bodies by federal agencies.

Second, although an agency is ultimately responsible for ensuring that its members are not participating in voluntary consensus standards bodies in a manner inconsistent with the Circular and the Act, we believe it would be inappropriate for the federal government to direct the internal operations of private sector voluntary consensus standards bodies or standards development organizations (SDOs) by proscribing the activities of any of its members. The membership of an SDO is free to choose a chair, to establish voting procedures, and to accept funding as deemed appropriate. We expect that the SDO itself or a related parent or accrediting organization would act to ensure that the organization’s proceedings remain fair and balanced. An SDO has a vested interest in ensuring that its consensus procedures and policies are followed in order to maintain its credibility.

Proposed Section 6b. Final Sections 7e, 7f, and 7h

34. Other commentators were concerned that an agency representative could participate in the proceedings of a voluntary consensus standards body for which the agency has no mission-related or statutorily-based rationale to become involved. For example, a situation might exist in which a technical standard developed by the private sector could be so widely adopted as to result in the emergence of a de facto regulatory standard, albeit one endorsed by the private sector rather than by the government. For example, a construction standard for buildings could become so widely accepted in the private sector that the result is that the construction community acts as if it is regulated by such standards. The commentator suggested that if an agency were to participate in the development of such a technical standard, in an area for which it has no specific statutory authority to regulate, that agency could be perceived as attempting to regulate the private sector “through the back door.” A perception of such activity, whether or not based in fact, would be detrimental to the interests of the federal government, and agencies should avoid such involvement.

In response to this concern, we feel that changes initiated in the proposed revision and continued in the final Circular sufficiently strengthened the Circular in this regard. In particular, section 7 expressly limits agency support (e.g., funding, participation, etc.) to “that which clearly furthers agency and departmental missions, authorities, priorities, and budget resources.” Moreover, this language is consistent with the Act. Thus, if an agency has no mission-related or statutory-related purpose in participation, then its participation would be contrary to the Circular.

An agency is ultimately responsible for its agency’s activities and is not participating in such bodies in a manner inconsistent with the Act or this Circular. Agencies should monitor their participation in voluntary consensus standards bodies to prevent situations in which the agency could dominate proceedings or have the appearance of impropriety.

Agencies should also work closely with private sector oversight organizations to ensure that no abuses occur. Comments provided by ANSI described the extensive oversight mechanisms it maintains in order to ensure that such abuses do not occur. We encourage this kind of active oversight on the part of the private sector, and we hope to promote cooperation between the agencies and the private sector to ensure that federal participation remains fair and equal.

Proposed Section 7—Policy Guidelines. Final Section 6c

35. A few commentators inquired whether the Circular applies to “regulatory standards.” In response, the final Circular distinguishes between a “technical standard” that may be referenced in a regulation, and a “regulatory standard,” which establishes overall regulatory goals or outcomes. The Act and the Circular apply to the former, but not to the latter. As described in the legislative history, technical standards pertain to “products and processes, such as the size, strength, or technical performance of a product, process or material” and as such may be incorporated into a regulation. [See 142 Cong. Rec. S1080 (daily ed. February 7, 1996) (Statement of Sen. Rockefeller.)]

Neither the Act nor the Circular require any agency to use private sector standards which would set regulatory standards or requirements.

Proposed Section 7. Final Section 6g

36. A commentator inquired whether the use of non-voluntary consensus standards meant use of any standards developed outside the voluntary consensus process, or just use of government-unique standards. The intent of the Circular over the years has been to discourage the government’s reliance on government-unique standards and to encourage agencies to instead rely on voluntary consensus standards. It is has not been the intent of the Circular to create the basis for discrimination among standards developed in the private sector, whether consensus-based or, alternatively, industry-based or company-based. Accordingly, we added language to clarify this point.

Proposed Section 7. Final Section 6f

37. One commentator inquired how OMB planned to carry out the “full
account” of the impact of this policy on the economy, applicable federal laws, policies, and national objectives. This language is from the current Circular and refers to the considerations agencies should make when considering using a standard. No change is necessary.

Proposed Section 7. Final Section 17

38. Several commentators noted that the proposed revision eliminated language from the current Circular which stated that its provisions “are intended for internal management purposes only and are not intended to (1) create delay in the administrative process, (2) provide new grounds for judicial review, or (3) create legal rights enforceable against agencies or their officers.” We have decided that, while some sections of the Circular incorporate statutory requirements, other sections remain internal Executive Branch management policy. Accordingly, we have retained the language, with minor revisions.

Proposed Section 7a

39. One commentator inquired as to whether the use of a voluntary consensus standard by one agency would mandate that another agency must use such standard. Implementation of the policies of the Circular are on an agency by agency basis, and in fact, on a case by case basis. Agencies may have different needs and requirements, and the use of a voluntary consensus standard by one agency does not require that another agency use the same standard. Each agency has the authority to decide whether, for a program, use of a voluntary consensus standard would be contrary to law or otherwise impractical.

40. Another comment suggested that the Circular did not contain sufficient assurance that the standards chosen would be true consensus standards. We have expanded the guidance in the Circular to address this concern by first expanding the definition of “consensus” in final section 6a(1)(v). Second, we have described in final section 6i how agencies may identify voluntary consensus standards. Third, we have developed reporting procedures that allow for public comment.

Proposed Section 7a(1). Final Section 6h

41. Several commentators suggested that “international voluntary consensus standards body” be defined in proposed section 5. We have decided that this definition is not necessary, as the term “international” is sufficiently well understood in the standards community, and the term “voluntary consensus standards body” has already been defined. Moreover, the distinction between “international standards” and “domestic standards” is not relevant to the essential policies of the Circular, and this point is clarified in this section.

42. Several commentators also noted that two trade agreements (“TBT” and the “Procurement Code”) of the World Trade Organization were mentioned but inquired as to why other international agreements like the World Trade Organization Agreement on Sanitary and Phytosanitary Measures or the North American Free Trade Agreement were not mentioned. We did not intend this list to be exhaustive. Therefore, we deleted this phrase to emphasize the main point of this section.

43. Several commentators questioned why the Circular included language that standards developed by international voluntary consensus standards bodies “should be considered in procurement and regulatory applications.” We recognize that both domestic and international voluntary consensus standards may exist, sometimes in harmony, sometimes in competition. This language, which is unchanged from the current version of the Circular, states only that such international standards should be “considered,” not that they are mandated or that they should be given any preference. In addition, some confusion has emerged based on a perceived conflict between the commitments of the United States with respect to international treaties and this Circular. No part of this Circular is intended to preempt international treaties. Nor is this Circular intended to create the basis for discrimination between an international and a domestic voluntary consensus standard. However, wherever possible, agencies should consider the use of international voluntary consensus standards.

Proposed Section 7a(2). Final Section 6i

44. One commentator suggested that the Circular promote the concept of performance-based requirements when regulating the conduct of work for safety or health reasons (e.g., safety standards). Where performance standards can be used in lieu of other types of standards (or technical standards), the Circular already accomplishes this by stating in final section 6i that “preference should be given to standards based on performance criteria.”

Proposed Section 7a(3). Final Section 6j

45. One commentator suggested using stronger language to protect the rights of copyright holders when referenced in a regulation. Others thought the language too strong. We have decided that the language is just right.

Proposed Section 7a(4). Final Section 6k, 7j

46. One commentator suggested that legal obligations that supersede the Circular and cost and time burdens need to be emphasized as factors supporting agencies’ developing and using their own government-unique standards. Another commentator suggested that untimeliness or unavailability of voluntary consensus standards development should be a reasonable justification for creation of a government standard. On the first point, these specific changes are not necessary, because the Act and the Circular already state that agencies may choose their own standard “where inconsistent with applicable law or otherwise impractical.” On the second point, we did clarify the language in final sections 6k and 7j.

47. Another commentator suggested that the Circular should define in this section factors that are considered to be “impractical.” See comments on proposed section 5c. We made no change.

Proposed Section 7a(5). Final Section 6l

48. This section is intended to give agencies guidance on where they may go to identify voluntary consensus standards. One commentator proposed language to indicate that, in addition to NIST, voluntary consensus standards may also be identified through other federal agencies. Another commentator proposed language that such standards may also be identified through standards publishing companies. We agree, and the Circular is changed.

Proposed Section 7b

49. Other commentators proposed that Federal Register notices be published whenever a federal employee is to participate in a voluntary consensus standards body. We have decided that this would be overly burdensome for the agencies and would provide comparatively little benefit for the public. Moreover, each agency is already required in section 15b(5) to publish a directory of federal participants in standards organizations. We made no change.

Proposed Section 7b(2). Final Section 7d

50. Some commentators noted that the current Circular’s language, which states that agency employees who “at government expense” participate in voluntary consensus standards bodies shall do so as specifically authorized agency representatives, has been deleted...
from the proposed revision. These commentators opposed this deletion. Federal employees who are representing their agency must do so at federal expense. (On the other hand, employees are free to maintain personal memberships in outside organizations, unless the employee's agency has a requirement for prior approval.) We expect that, as a general rule, federal participation in committees will not be a problem, while participation at higher levels, such as officers or as directors on boards, will require additional scrutiny. Employees should consult with their agency ethics officer to identify what restrictions may apply.

Proposed Section 7b(2). Final Section 7

51. Several commentators suggested changing the language in this section from “permitting agency participation when relating to agency mission,” to “permitting agency participation when compatible with agency and departmental missions, authorities, priorities, and budget resources,” as stated in the Act. We have decided to accept this suggestion, and the Circular is changed.

Proposed Section 7b(4). Final Sections 7d, 7g

52. One commentator suggested that the Circular should prohibit agency employees from serving as chairs or board members of voluntary consensus standards bodies. We have not amended the Circular to prohibit agency employees from serving as chairs or board members of voluntary consensus standards bodies. However, we have modified final section 7g to clarify that agency employees, whether or not in a position of leadership in a voluntary consensus standards body, must avoid the practice or appearance of undue influence relating to the agency’s representation and activities in the voluntary consensus standards bodies. In addition, we added language in final section 7d to remind agencies to involve their agency ethics officers, as appropriate, prior to authorizing support for or participation in a voluntary consensus standards body.

Proposed Section 7b(5). Final Section 7h

53. One commentator suggested changing the word “should” to “shall” regarding keeping the number of individual agency participants to a minimum. We decided that this change is unnecessary and made no change.

Proposed Section 7b(6)

54. A few commentators suggested requiring that the amount of federal support should be made public or at least made known to the supported committee of the voluntary consensus standards body or SDO. We have decided that this is unnecessary because we expect that the amount of federal support will already be known to a committee receiving the funds.

Proposed Section 7b(7). Final Section 7g

55. A commentator suggested either deleting “and administrative policies” or inserting “internal” before “administrative policies” to clarify that the prohibition is intended to apply to the internal management of a voluntary consensus standard body. This phrase is parenthetical to the words “internal management;” thus, the suggested revision is unnecessary.

Proposed Section 7b(8). Final Section 7i

56. One commentator questioned the relationship of the Circular to the Federal Advisory Committee Act (FACA). Federal participation in standards activities would not ordinarily be subject to FACA, because FACA applies to circumstances in which private individuals would be advising the government. The private sector members of standards organizations are not advising the government, but are developing standards. Nevertheless, issues may arise in which agencies should be aware of FACA.

Proposed Section 7b. Final Sections 7e, 7f

57. Several commentators, fearing agency dominance, criticized the proposed revision of the Circular for promoting increased agency participation. We have decided that the revisions to the Circular are balanced, in that they encourage agency participation while also discouraging agency dominance. Moreover, legislative history states, “In fact, it is my hope that this section will help convince the Federal Government to participate more fully in these organizations’ standards developing activities.” [See 141 Cong. Rec. H14334 (daily ed. December 12, 1995) (Statement of Rep. Morella.)]

Proposed 7c(4). Final Section 15b

58. A commentator suggested changing “standards developing groups” to “voluntary consensus standards bodies” for consistency. We agree, and we modified the final Circular.

Proposed 7c(6). Final Section 15b(7)

59. The current and proposed versions of the Circular required agencies to review their existing standards every five years and to replace through applicable procedures such standards that can be replaced with voluntary consensus standards. Several commentators suggested adding language that either requires agencies to review standards referenced in regulations on an annual basis or an ongoing basis. Other commentators proposed extending the review period to ten years (in order to mirror the review cycle of the Regulatory Flexibility Act) or to eliminate the review entirely because it was burdensome.

We decided to change this requirement to one in which agencies are responsible for “establishing a process for ongoing review of the agency’s use of standards for purposes of updating such use.” We decided that this approach will encourage agencies to review the large numbers of regulations which may reference obsolete and outdated standards in a timely manner. Agencies are encouraged to undertake a review of their uses of obsolete or government-unique standards as soon as practicable.

60. A commentator proposed language to require agencies to respond to requests from voluntary consensus standards bodies to replace existing federal standards, specifications, or regulations with voluntary consensus standards. This change is not necessary, because the Circular already requires agencies to establish a process for reviewing standards. (See comment 59.) We made no change.

Proposed Section 8. Final Section 11

61. Several commentators suggested eliminating the requirement in the proposed Circular for an analysis of the use and non-use of voluntary consensus standards in both the Notice of Proposed Rulemaking (NPRM) and the final rule in order to simplify and clarify Federal Register notices. As an alternative, these commentators proposed including such analysis in a separate document that accompanies the NPRM and the subsequent final rule.

We have decided that, rather than simplifying the rulemaking process, this change would make it more difficult for the public to comment on the rule and would complicate the process by adding another source of information in a separate location. However, we did make some minor changes to this section to clarify that agencies are not expected to provide an extensive report with each NPRM, Interim Final Rulemaking, or Final Rule. The section was also modified to improve the ability of agencies to identify voluntary consensus standards that could be used in their regulations, to ensure public
notice, and to minimize burden. First, the notice required in the NPRM may merely contain/include (1) a few sentences to identify the proposed standard, if any; and, if applicable, (2) a simple explanation of why the agency proposes to use a government-unique standard in lieu of a voluntary consensus standard. This step places the public on notice and gives them an opportunity to comment formally. Second, we expect that the majority of rulemakings will not reference standards at all. In those cases, the agency is not required to make a statement or to file a report. In those instances where an agency proposes a government-unique standard, the public, through the public comment process, will have an opportunity to identify a voluntary consensus standard (when the agency was not aware of it) or to argue that the agency should have used the voluntary consensus standard (when the agency had identified one, but rejected it).

62. Several commentators suggested adding a new section entitled “Sufficiency of Agency Search.” The purpose of this new section would be to limit an agency’s obligation to search for existing voluntary consensus standards under the requirements of this section. We have decided that this section is unnecessary in light of the requirements elsewhere in the Circular for identifying voluntary consensus standards. Accordingly, we made no change.

63. One commentator suggested that agencies be required to fully investigate and report on the existence and capabilities of a standard before making a decision to use a particular voluntary consensus standard. We have decided that the effort an agency would have to undertake to conduct its own scientific review of a voluntary, consensus standard is unnecessary, as SDOs adhere to lengthy and complex procedures which already closely scrutinize the uses and capabilities of a standard. However, in adopting a standard for use, whether in procurement or in regulation, agencies are already required to undertake the review under the Act and the Circular, as well as the review and analysis, described in other sources, such as the Federal Acquisition Regulation or the Executive Order 12866 on Regulatory Planning and Review. Accordingly, we made no change.

64. A few commentators suggested that the Circular should ensure prompt notification to interested parties when voluntary consensus standards activities are about to begin and should encourage greater public participation in such activities. Another commentator noted a lack of clear procedures on how voluntary consensus standards bodies handle public comments and whether those comments are available to interested persons or organizations. OMB has determined that these responsibilities fall within the jurisdiction of voluntary consensus standards bodies and are outside the scope of the Act and the Circular. Accordingly, we made no change.

Proposed Section 8. Final Sections 6g and 12c

65. A few commentators requested clarification on the use of “commercial-off-the-shelf” (“COTS”) products as they relate to voluntary consensus standards. In response, we have clarified final section 6g to state that this policy does not establish preferences between products developed in the private sector. Final section 12c clarified that there is no reporting requirement for such products.

Proposed Section 9—Responsibilities. Final Sections 13, 14, 15

66. Several commentators proposed that OMB have more defined oversight responsibility in determining whether an agency’s participation in a voluntary consensus standards body is consistent with the Circular. We did not make this change. Agency Standards Executives, with the advice of the Chair of the ICSP, are responsible for ensuring that agencies are in compliance with the requirements of this Circular.

With respect to the issue of “agency dominance” of SDOs, we expect that SDOs will likewise ensure that members abide by their rules of conduct and participation, working closely with Standards Executives where necessary and appropriate. We inserted minor clarifying language in new sections 13, 14, and 15.

Proposed 9b(2). Final Section 14c

67. A commentator suggested broadening the category of agencies that must designate a standards executive, from designating those agencies with a “significant interest” in the use of standards, to those agencies having either “regulatory or procurement” responsibilities. We decided that this proposed change was vague and would only confuse the scope of the Circular. Accordingly, we made no change.

Proposed Section 10. Final Sections 9 and 10

68. One commentator expressed concern that the reporting requirements would require agencies to report reliance on commercial-off-the-shelf (COTS) products as a decision not to rely on voluntary consensus standards. The Act and the Circular do not limit agencies’ abilities to purchase COTS or other products or services containing private sector standards. The Circular specifically excludes reporting of COTS procurements in final section 12, and final sections 9a and 12 require agencies to report only when an agency uses a government-unique standard in lieu of an existing voluntary consensus standard. Accordingly, we made no change.

Proposed 10b—Agency Reports on Standards Policy Activities. Final Section 9b

69. One commentator suggested that agencies also report the identity of standards development bodies whose standards the agency relies on and the identities of all the standards developed or used by such bodies. We have decided that it would be unnecessary, duplicative, and burdensome to require agencies to identify this level of detail in the annual report. The identity of individual standards developed by a standards body may be obtained either through the standards body or through a standards publishing company. In addition, agencies are already required to provide in their annual report, under section 9b(1), the number of voluntary consensus standards bodies in which an agency participates. Moreover, each agency is required under section 15b(5) to identify the standards bodies in which it is involved. Accordingly, we made no change.

Proposed 10b(3). Final Section 9b

70. A commentator suggested that agencies should be required to identify federal regulations and procurement specifications in which the standards were “withdrawn” and replaced with voluntary consensus standards. We have decided that this requirement is unnecessary, because information is already provided in the annual report described in final section 9b(3). Accordingly, we made no change.

Proposed Section 11—Conformity Assessment. Final Section 8

71. A commentator expressed concern that the coordination by the National Institute of Standards and Technology (NIST) of standards activities between the public and private sector will undermine the coordination that ANSI has performed for many years for the private sector. In addition, the commentator expressed concern that NIST’s involvement in such coordination will undermine the United States’ ability to
compete internationally as two organizations are coordinating standards developing activities instead of one. The Act states that NIST is to “coordinate Federal, State, and local technical standards activities and conformity assessment activities with private sector technical standards activities and conformity assessment activities.” This language makes clear that NIST will have responsibility for coordinating only the public sector and for working with the private sector. In addition, ANSI’s role is affirmed in the Memorandum Of Understanding (MOU) issued on July 24, 1995, between NIST and ANSI. The MOU states “[t]his MOU is intended to facilitate and strengthen the influence of ANSI and the entire U.S. standards community at the international level * * * and ensure that ANSI’s representation of U.S. interests is respected by the other players on the international scene.” Thus, we made no change.

Accordingly, OMB Circular A-119 is revised as set forth below.

Sally Katzen,
Administrator, Office of Information and Regulatory Affairs.

EXECUTIVE OFFICE OF THE PRESIDENT
Office of Management and Budget
Washington, D.C. 20503
Circular No. A–119
Revised

Memorandum for Heads of Executive Departments and Agencies

Subject: Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities

Revised OMB Circular A–119 establishes policies on Federal use and development of voluntary consensus standards and on conformity assessment activities. Pub. L. 104–113, the “National Technology Transfer and Advancement Act of 1995,” codified existing policies in A–119, established reporting requirements, and authorized the National Institute of Standards and Technology to coordinate conformity assessment activities of the agencies. OMB is issuing this revision of the Circular in order to make the terminology of the Circular consistent with the National Technology Transfer and Advancement Act of 1995, to issue guidance to the agencies on making their reports to OMB, to direct the Secretary of Commerce to issue policy guidance for conformity assessment, and to make changes for clarity.

Franklin D. Raines,
Director.

Attachment

EXECUTIVE OFFICE OF THE PRESIDENT
Office of Management and Budget
Washington, D.C. 20503
Circular No. A–119
Revised

To the Heads of Executive Departments and Establishments

Subject: Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities

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Background
1. What Is The Purpose Of This Circular?
   This Circular establishes policies to improve the internal management of the Executive Branch. Consistent with Section 12(d) of Pub. L. 104–113, the “National Technology Transfer and Advancement Act of 1995” (hereinafter “the Act”), this Circular directs agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical. It also provides guidance for agencies participating in voluntary consensus standards bodies and describes procedures for satisfying
the reporting requirements in the Act. The policies in this Circular are intended to reduce to a minimum the reliance by agencies on government-unique standards. These policies do not create the bases for discrimination in agency procurement or regulatory activities among standards developed in the private sector, whether or not they are developed by voluntary consensus standards bodies. Consistent with Section 12(b) of the Act, this Circular directs the Secretary of Commerce to issue guidance to the agencies in order to coordinate conformity assessment activities. This Circular replaces OMB Circular No. A-119, dated October 20, 1993.

2. What Are The Goals Of The Government In Using Voluntary Consensus Standards?

Many voluntary consensus standards are appropriate or adaptable for the Government’s purposes. The use of such standards, whenever practicable and appropriate, is intended to achieve the following goals:

a. Eliminate the cost to the Government of developing its own standards and decrease the cost of goods procured and the burden of complying with agency regulation.

b. Provide incentives and opportunities to establish standards that serve national needs.

c. Encourage long-term growth for U.S. enterprises and promote efficiency and economic competition through harmonization of standards.

d. Further the policy of reliance upon the private sector to supply Government needs for goods and services.

Definitions of Standards

3. What Is A Standard?

a. The term standard, or technical standard as cited in the Act, includes all of the following:

   (1) Common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices.
   (2) The definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength.

b. The term standard does not include the following:

   (1) Professional standards of personal conduct.
   (2) Institutional codes of ethics.
   (3) Standards for fit and measurements of size or strength.
   (4) Sampling procedures; or descriptions of design requirements, such as prescriptive standard which may specify design requirements, such as materials to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed.

c. Performance standard is a standard as defined above that states requirements in terms of required results with criteria for verifying compliance but without stating the methods for achieving required results. A performance standard may define the functional requirements for the item, operational requirements, and/or interface and interchangeability characteristics. A performance standard may be viewed in juxtaposition to a prescriptive standard which may specify design requirements, such as materials to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed.

d. Non-government standard is a standard as defined above that is in the form of a standardization document developed by a private sector association, organization or technical society which plans, develops, establishes or coordinates standards, specifications, handbooks, or related documents.

4. What Are Voluntary, Consensus Standards?

a. For purposes of this policy, voluntary consensus standards are standards developed or adopted by voluntary consensus standards bodies, both domestic and international. These standards include provisions requiring that owners of relevant intellectual property have agreed to make that intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to all interested parties. For purposes of this Circular, “technical standards that are developed or adopted by voluntary consensus standard bodies” is an equivalent term.

b. Voluntary consensus standards bodies are domestic or international organizations which plan, develop, establish, or coordinate voluntary consensus standards using agreed-upon procedures. For purposes of this Circular, “voluntary, private sector, consensus standards bodies,” as cited in Act, is an equivalent term. The Act and the Circular encourage the participation of federal representatives in these bodies to increase the likelihood that the standards they develop will meet both public and private sector needs. A voluntary consensus standards body is defined by the following attributes:

   (i) Openness.
   (ii) Balance of interest.
   (iii) Due process.
   (vi) An appeals process.

v. Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.

b. Other types of standards, which are distinct from voluntary consensus standards, are the following:

   (1) “Non-consensus standards,” “Industry standards,” “Company standards,” or “de facto standards,” which are developed in the private sector but not in the full consensus process.
   (2) “Government-unique standards,” which are developed by the government for its own uses.

(3) Standards mandated by law, such as those contained in the United States Pharmacopeia and the National Formulary, as referenced in 21 U.S.C. 351.

Policy

5. Who Does This Policy Apply To?

This Circular applies to all agencies and agency employees who use standards and participate in voluntary consensus standards activities, domestic and international, except for activities carried out pursuant to treaties. “Agency” means any executive department, independent commission, board, bureau, office, agency, Government-owned or controlled corporation or other establishment of the Federal Government. It also includes any regulatory commission or board, except for independent regulatory commissions insofar as they are subject to separate statutory requirements regarding the use of voluntary consensus standards. It does not include the legislative or judicial branches of the Federal Government.

6. What Is The Policy For Federal Use Of Standards?

All federal agencies must use voluntary consensus standards in lieu of government-unique standards in their procurement and regulatory activities, except where inconsistent with law or otherwise impractical. In these circumstances, your agency must submit a report describing the reason(s) for its use of government-unique standards in lieu of voluntary consensus standards to the Office of Management and Budget (OMB) through the National Institute of Standards and Technology (NIST).

a. When must my agency use voluntary consensus standards?

Your agency must use voluntary consensus standards, both domestic and international, in its regulatory and procurement activities in lieu of government-unique standards, unless use of such standards would be
inconsistent with applicable law or otherwise impractical. In all cases, your agency has the discretion to decline to use existing voluntary consensus standards if your agency determines that such standards are inconsistent with applicable law or otherwise impractical.

1. "Use" means incorporation of a standard in whole, in part, or by reference for procurement purposes, and the inclusion of a standard in whole, in part, or by reference in regulation(s).

2. "Impractical" includes circumstances in which such use would fail to serve the agency’s program needs; would be infeasible; would be inadequate, ineffectual, inefficient, or inconsistent with agency mission; or would impose more burdens, or would be less useful, than the use of another standard.

b. What must my agency do when such use is determined by my agency to be inconsistent with applicable law or otherwise impractical?

The head of your agency must transmit to the Office of Management and Budget (OMB), through the National Institute of Standards and Technology (NIST), an explanation of the reason(s) for using government-unique standards in lieu of voluntary consensus standards. For more information on reporting, see section 9.

c. How does this policy affect my agency’s regulatory authorities and responsibilities?

This policy does not preempt or restrict agencies’ authorities and responsibilities to make regulatory decisions authorized by statute. Such regulatory authorities and responsibilities include determining the level of acceptable risk; setting the level of protection; and balancing risk, cost, and availability of technology in establishing regulatory standards. However, to determine whether established regulatory limits or targets have been met, agencies should use voluntary consensus standards for test methods, sampling procedures, or protocols.

d. How does this policy affect my agency’s procurement authority?

This policy does not preempt or restrict agencies’ authorities and responsibilities to identify the capabilities that they need to obtain through procurements. Rather, this policy limits an agency’s authority to pursue an identified capability through reliance on a government-unique standard when a voluntary consensus standard exists (see Section 6a).

e. What are the goals of agency use of voluntary consensus standards?

Agencies should recognize the positive contribution of standards development and related activities. When properly conducted, standards development can increase productivity and efficiency in Government and industry, expand opportunities for international trade, conserve resources, improve health and safety, and protect the environment.

f. What considerations should my agency make when it is considering using a standard?

When considering using a standard, your agency should take full account of the effect of using the standard on the economy, and of applicable federal laws and policies, including laws and regulations relating to anti-trust, national security, small business, product safety, environment, meterication, technology development, and conflicts of interest. Your agency should also recognize that use of standards, if improperly conducted, can suppress free and fair competition; impede innovation and technical progress; exclude safer or less expensive products; or otherwise adversely affect trade, commerce, health, or safety. If your agency is proposing to incorporate a standard into a new rulemaking, your agency must comply with the "Principles of Regulation" (enumerated in Section 1(b)) and with the other analytical requirements of Executive Order 12866, "Regulatory Planning and Review."

g. Does this policy establish a preference between consensus and non-consensus standards that are developed in the private sector?

This policy does not establish a preference among standards developed in the private sector. Specifically, agencies that promulgate regulations referencing non-consensus standards developed in the private sector are not required to report on these actions, and agencies that procure products or services based on non-consensus standards are not required to report on such procurements. For example, this policy allows agencies to select a non-consensus standard developed in the private sector as a means of standardizing testing methods in a regulation and to choose among commercial-off-the-shelf products, regardless of whether the underlying standards are developed by voluntary consensus standards bodies or not.

h. Does this policy establish a preference between domestic and international voluntary consensus standards?

This policy does not establish a preference between domestic and international voluntary consensus standards. However, in the interests of promoting trade and implementing the provisions of international treaty agreements, your agency should consider international standards in procurement and regulatory applications.

i. Should my agency give preference to performance standards?

In using voluntary consensus standards, your agency should give preference to performance standards when such standards may reasonably be used in lieu of prescriptive standards.

j. How should my agency reference voluntary consensus standards?

Your agency should reference voluntary consensus standards, along with sources of availability, in appropriate publications, regulatory orders, and related internal documents. In regulations, the reference must include the date of issuance. For all other uses, your agency must determine the most appropriate form of reference, which may exclude the date of issuance as long as users are elsewhere directed to the latest issue. If a voluntary standard is used and published in an agency document, your agency must observe and protect the rights of the copyright holder and any other similar obligations.

k. What if no voluntary consensus standard exists?

In cases where no voluntary consensus standards exist, an agency may use government-unique standards (in addition to other standards, see Section 6g) and is not required to file a report on its use of government-unique standards. As explained above (see Section 6a), an agency may use government-unique standards in lieu of voluntary consensus standards if the use of such standards would be inconsistent with applicable law or otherwise impractical; in such cases, the agency must file a report under Section 9a regarding its use of government-unique standards.

l. How may my agency identify voluntary consensus standards?

Your agency may identify voluntary consensus standards through databases of standards maintained by the National Institute of Standards and Technology (NIST), or by other organizations including voluntary consensus standards bodies, other federal agencies, or standards publishing companies.

7. What Is The Policy For Federal Participation In Voluntary Consensus Standards Bodies?

Agencies must consult with voluntary consensus standards bodies, both domestic and international, and must participate with such bodies in the development of voluntary consensus standards when consultation and participation is in the public interest.
and is compatible with their missions, authorities, priorities, and budget resources.

a. What are the purposes of agency participation?
   Agency representatives should participate in voluntary consensus standards activities in order to accomplish the following purposes:
   (1) Eliminate the necessity for development or maintenance of separate Government-unique standards.
   (2) Further such national goals and objectives as increased use of the metric system of measurement: use of environmentally sound and energy efficient materials, products, systems, services, or practices; and improvement of public health and safety.

b. What are the general principles that apply to agency support?
   Agency support provided to a voluntary consensus standards activity must be limited to that which clearly furthers agency and departmental missions, authorities, priorities, and is consistent with budget resources. Agency support must not be contingent upon the outcome of the standards activity. Normally, the total amount of federal support should be no greater than that of other participants in that activity, except when it is in the direct and predominant interest of the Government to develop or revise a standard, and its timely development or revision appears unlikely in the absence of such support.

c. What forms of support may my agency provide?
   The form of agency support, may include the following:
   (1) Direct financial support; e.g., grants, memberships, and contracts.
   (2) Administrative support; e.g., travel costs, hosting of meetings, and secretarial functions.
   (3) Technical support; e.g., cooperative testing for standards evaluation and participation of agency personnel in the activities of voluntary consensus standards bodies.
   (4) Joint planning with voluntary consensus standards bodies to promote the identification and development of needed standards.
   (5) Participation of agency personnel.

d. Must agency participants be authorized?
   Agency employees who, at Government expense, participate in standards activities of voluntary consensus standards bodies on behalf of the agency must do so as specifically authorized agency representatives. Agency support for, and participation by agency personnel in, voluntary consensus standards bodies must be in compliance with applicable laws and regulations. For example, agency support is subject to legal and budgetary authority and availability of funds. Similarly, participation by agency employees (whether or not on behalf of the agency) in the activities of voluntary consensus standards bodies is subject to the laws and regulations that apply to participation by federal employees in the activities of outside organizations. While we anticipate that participation in a committee that is developing a standard would generally not raise significant issues, participation as an officer, director, or trustee of an organization would raise more significant issues. An agency should involve its agency ethics officer, as appropriate, before authorizing support for or participation in a voluntary consensus standards body.

e. Does agency participation indicate endorsement of any decisions reached by voluntary consensus standards bodies?
   Agency participation in voluntary consensus standards bodies does not necessarily connote agency agreement with, or endorsement of, decisions reached by such organizations.

f. Do agency representatives participate equally with other members?
   Agency representatives serving as members of voluntary consensus standards bodies should participate actively and on an equal basis with other members, consistent with the procedures of those bodies, particularly in matters such as establishing priorities, developing procedures for preparing, reviewing, and approving new standards. Active participation includes full involvement in discussions and technical debates, registering of opinions and, if selected, serving as chairpersons or in other official capacities. Agency representatives may vote, in accordance with the procedures of the voluntary consensus standards body, at each stage of the standards development process unless prohibited from doing so by law or agency policy.

g. Are there any limitations on participation by agency representatives?
   In order to maintain the independence of voluntary consensus standards bodies, agency representatives must refrain from involvement in the internal management of such organizations (e.g., selection of salaried officers and employees, establishment of staff salaries, and administrative policies). Agency representatives must not dominate such bodies, and in any case, be bound by voluntary consensus standards bodies' rules and procedures, including those regarding domination of proceedings by any individual. Regardless, such agency employees must avoid the practice or the appearance of undue influence relating to their agency representation and activities in voluntary consensus standards bodies.

h. Are there any limits on the number of federal participants in voluntary consensus standards bodies?
   The number of individual agency participants in a given voluntary standards activity should be kept to the minimum required for effective representation of the various program, technical, or other concerns of federal agencies.

i. Is there anything else agency representatives should know?
   This Circular does not provide guidance concerning the internal operating procedures that may be applicable to voluntary consensus standards bodies because of their relationships to agencies under this Circular. Agencies should, however, carefully consider what laws or rules may apply in a particular instance because of these relationships. For example, these relationships may involve the Federal Advisory Committee Act, as amended (5 U.S.C. App. I), or a provision of an authorizing statute for a particular agency.

j. What if a voluntary consensus standards body is likely to develop an acceptable, needed standard in a timely fashion?
   If a voluntary consensus standards body is in the process of developing or adopting a voluntary consensus standard that would likely be lawful and practical for an agency to use, and would likely be developed or adopted on a timely basis, an agency should not be developing its own government-unique standard and instead should be participating in the activities of the voluntary consensus standards body.

8. What Is The Policy On Conformity Assessment?
   Section 12(b) of the Act requires NIST to coordinate Federal, State, and local standards activities and conformity assessment activities with private sector standards activities and conformity assessment activities, with the goal of eliminating unnecessary duplication and complexity in the development and promulgation of conformity assessment requirements and measures. To ensure effective coordination, the Secretary of Commerce must issue guidance to the agencies.

Management and Reporting of Standards Use

a. As required by the Act, your agency must report to NIST, no later than December 31 of each year, the decisions by your agency in the previous fiscal year to use government-unique standards in lieu of voluntary consensus standards. If no voluntary consensus standard exists, your agency does not need to report its use of government-unique standards. (In addition, an agency is not required to report on its use of other standards. See Section 6g.) Your agency must include an explanation of the reason(s) why use of such voluntary consensus standard would be inconsistent with applicable law or otherwise impractical, as described in Sections 11b(2), 12a(3), and 12b(2) of this Circular. Your agency must report in accordance with format instructions issued by NIST.

b. Your agency must report to NIST, no later than December 31 of each year, information on the nature and extent of agency participation in the development and use of voluntary consensus standards from the previous fiscal year. Your agency must report in accordance with format instructions issued by NIST. Such reporting must include the following:

(1) The number of voluntary consensus standards bodies in which there is agency participation, as well as the number of agency employees participating.

(2) The number of voluntary consensus standards the agency has used since the last report, based on the procedures set forth in sections 11 and 12 of this Circular.

(3) Identification of voluntary consensus standards that have been substituted for government-unique standards as a result of an agency review under section 15b(7) of this Circular.

(4) An evaluation of the effectiveness of this policy and recommendations for any changes.

c. No later than the following January 31, NIST must transmit to OMB a summary report of the information received.

Your agency must establish a process to identify, manage, and review your agency’s development and use of standards. At minimum, your agency must have the ability to (1) report to OMB through NIST on the agency’s use of government-unique standards in lieu of voluntary consensus standards, along with an explanation of the reasons for such non-use, as described in section 9a, and (2) report on your agency’s participation in the development and use of voluntary consensus standards, as described in section 9b. This policy establishes two ways, category based reporting and transaction based reporting, for agencies to manage and report their use of standards. Your agency must report all uses of standards in one or both ways.

11. What Are The Procedures For Reporting My Agency’s Use Of Standards In Procurements?

Your agency should use transaction based reporting if your agency issues regulations that use or reference standards. If your agency is issuing or revising a regulation that contains a standard, your agency must follow these procedures:

a. Publish a request for comment within the preamble of a Notice of Proposed Rulemaking (NPRM) or Interim Final Rule (IFR). Such request must provide the appropriate information, as follows:

(1) When your agency is proposing to use a voluntary consensus standard, provide a statement which identifies such standard.

(2) When your agency is proposing to use a government-unique standard in lieu of a voluntary consensus standard, provide a statement which identifies such standards and provides a preliminary explanation for the proposed use of a government-unique standard in lieu of a voluntary consensus standard.

(3) When your agency is proposing to use a government-unique standard, and no voluntary consensus standard has been identified, provide a statement to that effect and an invitation to identify any such standard and to explain why such standard should be used.

b. Publish a discussion in the preamble of a Final Rulemaking that restates the statement in the NPRM or IFR, acknowledges and summarizes any comments received and responds to them, and explains the agency’s final decision. This discussion must provide the appropriate information, as follows:

(1) When a voluntary consensus standard has been used, provide a statement that identifies such standard and any alternative voluntary consensus standards which have been identified.

(2) When a government-unique standard is being used in lieu of a voluntary consensus standard, provide a statement that identifies the standards and explains why using the voluntary consensus standard would be inconsistent with applicable law or otherwise impractical. Such explanation must be transmitted in accordance with the requirements of Section 9a.

(3) When a government-unique standard is being used, and no voluntary consensus standard has been identified, provide a statement to that effect.

12. What Are The Procedures For Reporting My Agency’s Use Of Standards In Regulations?

To identify, manage, and review the standards used in your agency’s regulations, your agency must either report on a categorical basis or on a transaction basis.

a. How does my agency report the use of standards in regulations on a categorical basis?
Your agency must report on a category basis when your agency identifies, manages, and reviews the use of standards by group or category. Category based reporting is especially useful when your agency either conducts large procurements or large numbers of procurements using government-unique standards, or is involved in long-term procurement contracts which require replacement parts based on government-unique standards. To report use of government-unique standards on a categorical basis, your agency must:

(1) Maintain a centralized standards management system that identifies how your agency uses both government-unique and voluntary consensus standards.

(2) Systematically review your agency’s use of government-unique standards for conversion to voluntary consensus standards.

(3) Maintain records on the groups or categories in which your agency uses government-unique standards in lieu of voluntary consensus standards, including an explanation of the reason(s) for such use, which must be transmitted according to Section 9a.

(4) Enable potential offerors to suggest voluntary consensus standards that can replace government-unique standards.

b. How does my agency report the use of standards in regulations on a transaction basis?
Your agency should report on a transaction basis when your agency identifies, manages, and reviews the use of standards on a transaction basis rather than a category basis. Transaction based reporting is especially useful when your agency conducts procurement mostly through commercial products and services, but is occasionally involved in a procurement involving government-unique standards. To report use of government-unique standards on a transaction basis, your agency must follow the following procedures:

(1) In each solicitation which references government-unique standards, the solicitation must:

(i) Identify such standards.
(ii) Provide potential offerors an opportunity to suggest alternative voluntary consensus standards that meet the agency's requirements.

(2) If such suggestions are made and the agency decides to use government-unique standards in lieu of voluntary consensus standards, the agency must explain in its report to OMB as described in Section 15b(5) and (6) its reasons why using such voluntary consensus standards is inconsistent with applicable law or otherwise impractical.

c. In the case of an agency with significant interest in the use of standards, designate a senior level official as the Standards Executive who will be responsible for the agency's implementation of this Circular and who will represent the agency on the ICSP.

d. Transmit the annual report prepared by the Agency Standards Executive as described in Sections 9 and 15b(6).

15. What Are The Responsibilities Of Agency Standards Executives?

An Agency Standards Executive:

a. Promotes the following goals:
   (1) Effective use of agency resources and participation.
   (2) The development of agency positions that are in the public interest and that do not conflict with each other.
   (3) The development of agency positions that are consistent with administration policy.

b. The development of agency technical and policy positions that are clearly defined and known in advance to all federal participants on a given committee.

c. Coordinates his or her agency's participation in voluntary consensus standards bodies by:
   (1) Establishing procedures to ensure that agency representatives who participate in voluntary consensus standards bodies will, to the extent possible, ascertain the views of the agency on matters of paramount interest and will, at a minimum, express views that are not inconsistent or in conflict with established agency views.
   (2) To the extent possible, ensuring that the agency's participation in voluntary consensus standards bodies is consistent with agency missions, authorities, priorities, and budget resources.
   (3) Ensuring, when two or more agencies participate in a given voluntary consensus standards activity, that they coordinate their views on matters of paramount importance so as to present, whenever feasible, a single, unified position and, where not feasible, a mutual recognition of differences.
   (4) Cooperating with the Secretary in carrying out his or her responsibilities under this Circular.

Supplementary Information

16. When Will This Circular Be Reviewed?

This Circular will be reviewed for effectiveness by the OMB three years from the date of issuance.

17. What Is The Legal Effect Of This Circular?

Authority for this Circular is based on 31 U.S.C. 1111, which gives OMB broad authority to establish policies for the improved management of the Executive Branch. This Circular is intended to implement Section 12(d) of Public Law 104–113 and to establish policies that will improve the internal management of the Executive Branch. This Circular is not intended to create delay in the administrative process, provide new grounds for judicial review, or create new rights or benefits, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies or instrumentalities, or its officers or employees.

18. Do You Have Further Questions?

For information concerning this Circular, contact the Office of Management and Budget, Office of Information and Regulatory Affairs: Telephone 202/395–3785.

[FR Doc. 98–4177 Filed 2–18–98; 8:45 am]
An Act

To amend the Stevenson-Wydler Technology Innovation Act of 1980 with respect to inventions made under cooperative research and development agreements, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "National Technology Transfer and Advancement Act of 1995".

SEC. 2. FINDINGS.

The Congress finds the following:

(1) Bringing technology and industrial innovation to the marketplace is central to the economic, environmental, and social well-being of the people of the United States.

(2) The Federal Government can help United States business to speed the development of new products and processes by entering into cooperative research and development agreements which make available the assistance of Federal laboratories to the private sector, but the commercialization of technology and industrial innovation in the United States depends upon actions by business.

(3) The commercialization of technology and industrial innovation in the United States will be enhanced if companies, in return for reasonable compensation to the Federal Government, can more easily obtain exclusive licenses to inventions which develop as a result of cooperative research with scientists employed by Federal laboratories.

SEC. 3. USE OF FEDERAL TECHNOLOGY.

Subparagraph (B) of section 11(e)(7) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710(e)(7)(B)) is amended to read as follows:

"(B) A transfer shall be made by any Federal agency under subparagraph (A), for any fiscal year, only if the amount so transferred by that agency (as determined under such subparagraph) would exceed $10,000."

SEC. 4. TITLE TO INTELLECTUAL PROPERTY ARISING FROM COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.

Subsection (b) of section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(b)) is amended to read as follows:

"(b) ENUMERATED AUTHORITY.—(1) Under an agreement entered into pursuant to subsection (a)(1), the laboratory may grant, or
agree to grant in advance, to a collaborating party patent licenses or assignments, or options thereto, in any invention made in whole or in part by a laboratory employee under the agreement, for reasonable compensation when appropriate. The laboratory shall ensure, through such agreement, that the collaborating party has the option to choose an exclusive license for a pre-negotiated field of use for any such invention under the agreement or, if there is more than one collaborating party, that the collaborating parties are offered the option to hold licensing rights that collectively encompass the rights that would be held under such an exclusive license by one party. In consideration for the Government's contribution under the agreement, grants under this paragraph shall be subject to the following explicit conditions:

(A) A nonexclusive, nontransferable, irrevocable, paid-up license from the collaborating party to the laboratory to practice the invention or have the invention practiced throughout the world by or on behalf of the Government. In the exercise of such license, the Government shall not publicly disclose trade secrets or commercial or financial information that is privileged or confidential within the meaning of section 552(b)(4) of title 5, United States Code, or which would be considered as such if it had been obtained from a non-Federal party.

(B) If a laboratory assigns title or grants an exclusive license to such an invention, the Government shall retain the right—

(i) to require the collaborating party to grant to a responsible applicant a nonexclusive, partially exclusive, or exclusive license to use the invention in the applicant's licensed field of use, on terms that are reasonable under the circumstances; or

(ii) if the collaborating party fails to grant such a license, to grant the license itself.

(C) The Government may exercise its right retained under subparagraph (B) only in exceptional circumstances and only if the Government determines that—

(i) the action is necessary to meet health or safety needs that are not reasonably satisfied by the collaborating party;

(ii) the action is necessary to meet requirements for public use specified by Federal regulations, and such requirements are not reasonably satisfied by the collaborating party; or

(iii) the collaborating party has failed to comply with an agreement containing provisions described in subsection (c)(4)(B).

This determination is subject to administrative appeal and judicial review under section 203(2) of title 35, United States Code.

(2) Under agreements entered into pursuant to subsection (a)(1), the laboratory shall ensure that a collaborating party may retain title to any invention made solely by its employee in exchange for normally granting the Government a nonexclusive, nontransferable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government for research or other Government purposes.
“(3) Under an agreement entered into pursuant to subsection (a)(1), a laboratory may—

(A) accept, retain, and use funds, personnel, services, and property from a collaborating party and provide personnel, services, and property to a collaborating party;

(B) use funds received from a collaborating party in accordance with subparagraph (A) to hire personnel to carry out the agreement who will not be subject to full-time-equivalent restrictions of the agency;

(C) to the extent consistent with any applicable agency requirements or standards of conduct, permit an employee or former employee of the laboratory to participate in an effort to commercialize an invention made by the employee or former employee while in the employment or service of the Government; and

(D) waive, subject to reservation by the Government of a nonexclusive, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government, in advance, in whole or in part, any right of ownership which the Federal Government may have to any subject invention made under the agreement by a collaborating party or employee of a collaborating party.

(4) A collaborating party in an exclusive license in any invention made under an agreement entered into pursuant to subsection (a)(1) shall have the right of enforcement under chapter 29 of title 35, United States Code.

(5) A Government-owned, contractor-operated laboratory that enters into a cooperative research and development agreement pursuant to subsection (a)(1) may use or obligate royalties or other income accruing to the laboratory under such agreement with respect to any invention only—

(A) for payments to inventors;

(B) for purposes described in clauses (i), (ii), (iii), and (iv) of section 14(a)(1)(B); and

(C) for scientific research and development consistent with the research and development missions and objectives of the laboratory.”.

SEC. 5. DISTRIBUTION OF INCOME FROM INTELLECTUAL PROPERTY RECEIVED BY FEDERAL LABORATORIES.

Section 14 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710c) is amended—

(1) by amending subsection (a)(1) to read as follows:

“(1) Except as provided in paragraphs (2) and (4), any royalties or other payments received by a Federal agency from the licensing and assignment of inventions under agreements entered into by Federal laboratories under section 12, and from the licensing of inventions of Federal laboratories under section 207 of title 35, United States Code, or under any other provision of law, shall be retained by the laboratory which produced the invention and shall be disposed of as follows:

(A)(i) The head of the agency or laboratory, or such individual’s designee, shall pay each year the first $2,000, and thereafter at least 15 percent, of the royalties or other payments to the inventor or coinventor.

(ii) An agency or laboratory may provide appropriate incentives, from royalties, or other payments, to laboratory

Royalties.
employees who are not an inventor of such inventions but who substantially increased the technical value of such inventions.

“(iii) The agency or laboratory shall retain the royalties and other payments received from an invention until the agency or laboratory makes payments to employees of a laboratory under clause (i) or (ii).

“(B) The balance of the royalties or other payments shall be transferred by the agency to its laboratories, with the majority share of the royalties or other payments from any invention going to the laboratory where the invention occurred. The royalties or other payments so transferred to any laboratory may be used or obligated by that laboratory during the fiscal year in which they are received or during the succeeding fiscal year—

“(i) to reward scientific, engineering, and technical employees of the laboratory, including developers of sensitive or classified technology, regardless of whether the technology has commercial applications;

“(ii) to further scientific exchange among the laboratories of the agency;

“(iii) for education and training of employees consistent with the research and development missions and objectives of the agency or laboratory, and for other activities that increase the potential for transfer of the technology of the laboratories of the agency;

“(iv) for payment of expenses incidental to the administration and licensing of intellectual property by the agency or laboratory with respect to inventions made at that laboratory, including the fees or other costs for the services of other agencies, persons, or organizations for intellectual property management and licensing services; or

“(v) for scientific research and development consistent with the research and development missions and objectives of the laboratory.

“(C) All royalties or other payments retained by the agency or laboratory after payments have been made pursuant to subparagraphs (A) and (B) that is unobligated and unexpended at the end of the second fiscal year succeeding the fiscal year in which the royalties and other payments were received shall be paid into the Treasury.”;

(2) in subsection (a)(2)—

(A) by inserting “or other payments” after “royalties”;

and

(B) by striking “for the purposes described in clauses (i) through (iv) of paragraph (1)(B) during that fiscal year or the succeeding fiscal year” and inserting in lieu thereof “under paragraph (1)(B)”;

(3) in subsection (a)(3), by striking “$100,000” both places it appears and inserting “$150,000”;

(4) in subsection (a)(4)—

(A) by striking “income” each place it appears and inserting in lieu thereof “payments”;

(B) by striking “the payment of royalties to inventors” in the first sentence thereof and inserting in lieu thereof “payments to inventors”;

(5) in subsection (a)(5), by striking “$300,000” and inserting “$350,000”;

(6) in subsection (a)(6), by striking “$450,000” and inserting “$500,000”;
(C) by striking “clause (i) of paragraph (1)(B)” and inserting in lieu thereof “clause (iv) of paragraph (1)(B)”; 
(D) by striking “payment of the royalties,” in the second sentence thereof and inserting in lieu thereof “offsetting the payments to inventors,”; and 
(E) by striking “clauses (i) through (iv) of”; and 
(5) by amending paragraph (1) of subsection (b) to read as follows: 
“(1) by a contractor, grantee, or participant, or an employee of a contractor, grantee, or participant, in an agreement or other arrangement with the agency, or”.

SEC. 6. EMPLOYEE ACTIVITIES.

Section 15(a) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710d(a)) is amended—
(1) by striking “the right of ownership to an invention under this Act” and inserting in lieu thereof “ownership of or the right of ownership to an invention made by a Federal employee”; and 
(2) by inserting “obtain or” after “the Government, to”.

SEC. 7. AMENDMENT TO BAYH-DOLE ACT.

Section 210(e) of title 35, United States Code, is amended by striking “, as amended by the Federal Technology Transfer Act of 1986,”.

SEC. 8. NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ACT AMENDMENTS.

The National Institute of Standards and Technology Act (15 U.S.C. 271 et seq.) is amended—
(1) in section 10(a)—
(A) by striking “nine” and inserting in lieu thereof “15”; and 
(B) by striking “five” and inserting in lieu thereof “10”; 
(2) in section 15—
(A) by striking “Pay Act of 1945; and” and inserting in lieu thereof “Pay Act of 1945;”; and 
(B) by inserting “; and (h) the provision of transportation services for employees of the Institute between the facilities of the Institute and nearby public transportation, notwithstanding section 1344 of title 31, United States Code after “interests of the Government”; and 
(3) in section 19—
(A) by inserting “, subject to the availability of appropriations,” after “post-doctoral fellowship program”; and 
(B) by striking “nor more than forty” and inserting in lieu thereof “nor more than 60”.

SEC. 9. RESEARCH EQUIPMENT.

Section 11(i) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710(i)) is amended by inserting “loan, lease, or” before “give”.

SEC. 10. PERSONNEL.

SEC. 11. FASTENER QUALITY ACT AMENDMENTS.

(a) Section 2 Amendments.—Section 2 of the Fastener Quality Act (15 U.S.C. 5401) is amended—

(1) by striking subsection (a)(4), and redesignating paragraphs (5) through (9) as paragraphs (4) through (8), respectively;
(2) in subsection (a)(7), as so redesignated by paragraph (1) of this subsection, by striking “by lot number”; and
(3) in subsection (b), by striking “used in critical applications” and inserting in lieu thereof “in commerce”.

(b) Section 3 Amendments.—Section 3 of the Fastener Quality Act (15 U.S.C. 5402) is amended—

(1) in paragraph (1)(B) by striking “having a minimum tensile strength of 150,000 pounds per square inch”;
(2) in paragraph (2), by inserting “consensus” after “or any other”;
(3) in paragraph (5)—
(A) by inserting “or” after “standard or specification,” in subparagraph (B);
(B) by striking “or” at the end of subparagraph (C);
(C) by striking subparagraph (D); and
(D) by inserting “or produced in accordance with ASTM F 432” after “307 Grade A”;
(4) in paragraph (6) by striking “other person” and inserting in lieu thereof “government agency”;
(5) in paragraph (8) by striking “Standard” and inserting in lieu thereof “Standards”;
(6) by striking paragraph (11) and redesignating paragraphs (12) through (15) as paragraphs (11) through (14), respectively;
(7) in paragraph (13), as so redesignated by paragraph (6) of this subsection, by striking “, a government agency” and all that follows through “markings of any fastener” and inserting in lieu thereof “or a government agency”; and
(8) in paragraph (14), as so redesignated by paragraph (6) of this subsection, by inserting “for the purpose of achieving a uniform hardness” after “quenching and tempering”.

(c) Section 4 Repeal.—Section 4 of the Fastener Quality Act (15 U.S.C. 5403) is repealed.

(d) Section 5 Amendments.—Section 5 of the Fastener Quality Act (15 U.S.C. 5404) is amended—

(1) in subsection (a)(1)(B) and (2)(A)(i) by striking “subsections (b) and (c)” and inserting in lieu thereof “subsections (b), (c), and (d)”;
(2) in subsection (c)(2) by striking “or, where applicable” and all that follows through “section 7(c)(1)”;
(3) in subsection (c)(3) by striking “, such as the chemical, dimensional, physical, mechanical, and any other”;
(4) in subsection (c)(4) by inserting “except as provided in subsection (d),” before “state whether”; and
(5) by adding at the end the following new subsection:

“(d) Alternative Procedure for Chemical Characteristics.—Notwithstanding the requirements of subsections (b) and (c), a manufacturer shall be deemed to have demonstrated, for purposes of subsection (a)(1), that the chemical characteristics of a lot conform to the standards and specifications to which the
manufacturer represents such lot has been manufactured if the following requirements are met:

“(1) The coil or heat number of metal from which such lot was fabricated has been inspected and tested with respect to its chemical characteristics by a laboratory accredited in accordance with the procedures and conditions specified by the Secretary under section 6.

“(2) Such laboratory has provided to the manufacturer, either directly or through the metal manufacturer, a written inspection and testing report, which shall be in a form prescribed by the Secretary by regulation, listing the chemical characteristics of such coil or heat number.

“(3) The report described in paragraph (2) indicates that the chemical characteristics of such coil or heat number conform to those required by the standards and specifications to which the manufacturer represents such lot has been manufactured.

“(4) The manufacturer demonstrates that such lot has been fabricated from the coil or heat number of metal to which the report described in paragraphs (2) and (3) relates.

In prescribing the form of report required by subsection (c), the Secretary shall provide for an alternative to the statement required by subsection (c)(4), insofar as such statement pertains to chemical characteristics, for cases in which a manufacturer elects to use the procedure permitted by this subsection.”

(e) Section 6 Amendment.—Section 6(a)(1) of the Fastener Quality Act (15 U.S.C. 5405(a)(1)) is amended by striking “Within 180 days after the date of enactment of this Act, the” and inserting in lieu thereof “The”.

(f) Section 7 Amendments.—Section 7 of the Fastener Quality Act (15 U.S.C. 5406) is amended—

(1) by amending subsection (a) to read as follows:

“(a) Domestically Produced Fasteners.—It shall be unlawful for a manufacturer to sell any shipment of fasteners covered by this Act which are manufactured in the United States unless the fasteners—

“(1) have been manufactured according to the requirements of the applicable standards and specifications and have been inspected and tested by a laboratory accredited in accordance with the procedures and conditions specified by the Secretary under section 6; and

“(2) an original laboratory testing report described in section 5(c) and a manufacturer’s certificate of conformance are on file with the manufacturer, or under such custody as may be prescribed by the Secretary, and available for inspection.”;

(2) in subsection (c)(2) by inserting “to the same” after “in the same manner and”;

(3) in subsection (d)(1) by striking “certificate” and inserting in lieu thereof “test report”; and

(4) by striking subsections (e), (f), and (g) and inserting in lieu thereof the following:

“(e) Commingling.—It shall be unlawful for any manufacturer, importer, or private label distributor to commingle like fasteners from different lots in the same container, except that such manufacturer, importer, or private label distributor may commingle like fasteners of the same type, grade, and dimension from not more than two tested and certified lots in the same container during repackaging and plating operations. Any container which contains
fasteners from two lots shall be conspicuously marked with the lot identification numbers of both lots.

“(f) SUBSEQUENT PURCHASER.—If a person who purchases fasteners for any purpose so requests either prior to the sale or at the time of sale, the seller shall conspicuously mark the container of the fasteners with the lot number from which such fasteners were taken.”.

(g) SECTION 9 AMENDMENT.—Section 9 of the Fastener Quality Act (15 U.S.C. 5408) is amended by adding at the end the following new subsection:

“(d) ENFORCEMENT.—The Secretary may designate officers or employees of the Department of Commerce to conduct investigations pursuant to this Act. In conducting such investigations, those officers or employees may, to the extent necessary or appropriate to the enforcement of this Act, exercise such authorities as are conferred upon them by other laws of the United States, subject to policies and procedures approved by the Attorney General.”.

(h) SECTION 10 AMENDMENTS.—Section 10 of the Fastener Quality Act (15 U.S.C. 5409) is amended—

(1) in subsections (a) and (b), by striking “10 years” and inserting in lieu thereof “5 years”; and

(2) in subsection (b), by striking “any subsequent” and inserting in lieu thereof “the subsequent”.

(i) SECTION 13 AMENDMENT.—Section 13 of the Fastener Quality Act (15 U.S.C. 5412) is amended by striking “within 180 days after the date of enactment of this Act”.

(j) SECTION 14 REPEAL.—Section 14 of the Fastener Quality Act (15 U.S.C. 5413) is repealed.

SEC. 12. STANDARDS CONFORMITY.

(a) USE OF STANDARDS.—Section 2(b) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b)) is amended—

(1) in paragraph (2), by striking “, including comparing standards” and all that follows through “Federal Government”;

(2) by redesignating paragraphs (3) through (11) as paragraphs (4) through (12), respectively; and

(3) by inserting after paragraph (2) the following new paragraph:

“(3) to compare standards used in scientific investigations, engineering, manufacturing, commerce, industry, and educational institutions with the standards adopted or recognized by the Federal Government and to coordinate the use by Federal agencies of private sector standards, emphasizing where possible the use of standards developed by private, consensus organizations;”.

(b) CONFORMITY ASSESSMENT ACTIVITIES.—Section 2(b) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b)) is amended—

(1) by striking “and” at the end of paragraph (11), as so redesignated by subsection (a)(2) of this section;

(2) by striking the period at the end of paragraph (12), as so redesignated by subsection (a)(2) of this section, and inserting in lieu thereof “; and”; and

(3) by adding at the end the following new paragraph:

“(13) to coordinate Federal, State, and local technical standards activities and conformity assessment activities, with private sector technical standards activities and conformity assess-
ment activities, with the goal of eliminating unnecessary duplication and complexity in the development and promulgation of conformity assessment requirements and measures.”.

(c) TRANSMITTAL OF PLAN TO CONGRESS.—The National Institute of Standards and Technology shall, within 90 days after the date of enactment of this Act, transmit to the Congress a plan for implementing the amendments made by this section.

(d) UTILIZATION OF CONSENSUS TECHNICAL STANDARDS BY FEDERAL AGENCIES; REPORTS.—

(1) IN GENERAL.—Except as provided in paragraph (3) of this subsection, all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.

(2) CONSULTATION; PARTICIPATION.—In carrying out paragraph (1) of this subsection, Federal agencies and departments shall consult with voluntary, private sector, consensus standards bodies and shall, when such participation is in the public interest and is compatible with agency and departmental missions, authorities, priorities, and budget resources, participate with such bodies in the development of technical standards.

(3) EXCEPTION.—If compliance with paragraph (1) of this subsection is inconsistent with applicable law or otherwise impractical, a Federal agency or department may elect to use technical standards that are not developed or adopted by voluntary consensus standards bodies if the head of each such agency or department transmits to the Office of Management and Budget an explanation of the reasons for using such standards. Each year, beginning with fiscal year 1997, the Office of Management and Budget shall transmit to Congress and its committees a report summarizing all explanations received in the preceding year under this paragraph.

(4) DEFINITION OF TECHNICAL STANDARDS.—As used in this subsection, the term “technical standards” means performance-based or design-specific technical specifications and related management systems practices.

SEC. 13. SENSE OF CONGRESS.

It is the sense of the Congress that the Malcolm Baldrige National Quality Award program offers substantial benefits to
United States industry, and that all funds appropriated for such program should be spent in support of the goals of the program.

Approved March 7, 1996.
125.1501 Short title.

Sec. 1.

This act shall be known and may be cited as the “Stille-DeRossett-Hale single state construction code act”.


Compiler's Notes: Former MCL 125.1501 to 125.1512, deriving from Act 304 of 1969 and pertaining to bonds for urban redevelopment, were rejected by the voters at the general election of November 3, 1970. For transfer of powers and duties relating to the promulgation of rules by the state construction code commission from the department of labor to the director of the department of consumer and industry services, see E.R.O. No. 1996-2, compiled at MCL 445.2001 of the Michigan Compiled Laws. For transfer of powers and duties of the executive director of the state construction code commission to the director of the department of consumer and industry services, and abolishment of the position, see E.R.O. No. 1996-2, compiled at MCL 445.2001 of the Michigan Compiled Laws.

Popular Name: Act 230  
Popular Name: Uniform Construction Code


Compiler's Notes: The repealed section pertained to definitions and references to act and code.

Popular Name: Act 230  
Popular Name: Uniform Construction Code

125.1502a Additional definitions.

Sec. 2a.

(1) As used in this act:

(a) “Agricultural or agricultural purposes” means of, or pertaining to, or connected with, or engaged in agriculture or tillage which is characterized by the act or
business of cultivating or using land and soil for the production of crops for the use of animals or humans, and includes, but is not limited to, purposes related to agriculture, farming, dairying, pasturage, horticulture, floriculture, viticulture, and animal and poultry husbandry.

(b) “Application for a building permit” means an application for a building permit submitted to an enforcing agency pursuant to this act and plans, specifications, surveys, statements, and other material submitted to the enforcing agency together or in connection with the application.

(c) “Barrier free design” means design complying with legal requirements for architectural designs which eliminate the type of barriers and hindrances that deter persons with disabilities from having access to and free mobility in and around a building or structure.

(d) “Board of appeals” means the construction board of appeals of a governmental subdivision provided for in section 14.

(e) “Boards” means the state plumbing, board of mechanical rules, and electrical administrative boards and the barrier free design board created in section 5 of 1966 PA 1, MCL 125.1355.

(f) “Building” means a combination of materials, whether portable or fixed, forming a structure affording a facility or shelter for use or occupancy by persons, animals, or property. Building does not include a building, whether temporary or permanent, incidental to the use for agricultural purposes of the land on which the building is located if it is not used in the business of retail trade. Building includes the meaning “or part or parts of the building and all equipment in the building” unless the context clearly requires a different meaning.

(g) “Building envelope” means the elements of a building which enclose conditioned spaces through which thermal energy may be transferred to or from the exterior.

(h) “Business day” means a day of the year, exclusive of a Saturday, Sunday, or legal holiday.

(i) “Chief elected official” means the chairperson of the county board of commissioners, the city mayor, the village president, or the township supervisor.

(j) “Code” means the state construction code provided for in section 4 or a part of that code of limited application and includes a modification of or amendment to the code.

(k) “Commission” means the state construction code commission created by section 3.

(l) “Construction” means the construction, erection, reconstruction, alteration, conversion, demolition, repair, moving, or equipping of buildings or structures.

(m) “Construction regulation” means a law, act, rule, regulation, or code, general or special, or compilation thereof, enacted or adopted before or after January 1, 1973,
by this state including a department, board, bureau, commission, or other agency thereof, relating to the design, construction, or use of buildings and structures and the installation of equipment in the building or structure. Construction regulation does not include a zoning ordinance or rule issued pursuant to a zoning ordinance and related to zoning.

(n) "Cost-effective", in reference to section 4(3)(f) and (g), means, using the existing energy efficiency standards and requirements as the base of comparison, the economic benefits of the proposed energy efficiency standards and requirements will exceed the economic costs of the requirements of the proposed rules based upon an incremental multiyear analysis. All of the following provisions apply:

(i) The analysis shall take into consideration the perspective of a typical first-time home buyer.

(ii) The analysis shall consider benefits and costs over a 7-year time period.

(iii) The analysis shall not assume fuel price increases in excess of the assumed general rate of inflation.

(iv) The analysis shall assure that the buyer of a home who qualifies to purchase the home before the addition of the energy efficient standards would still qualify to purchase the same home after the additional cost of the energy-saving construction features.

(v) The analysis shall assure that the costs of principal, interest, taxes, insurance, and utilities will not be greater after the inclusion of the proposed cost of the additional energy-saving construction features required by the proposed energy efficiency rules as opposed to the provisions of the existing energy efficiency rules.

(o) “Department” means the department of consumer and industry services.

(p) “Director” means the director of the department or an authorized representative of the director.

(q) “Energy conservation” means the efficient use of energy by providing building envelopes with high thermal resistance and low air leakage, and the selection of energy efficient mechanical, electrical service, and illumination systems, equipment, devices, or apparatus.

(r) “Enforcing agency” means the enforcing agency, in accordance with section 8a or 8b, which is responsible for administration and enforcement of the code within a governmental subdivision, except for the purposes of section 19 enforcing agency means the agency in a governmental unit principally responsible for the administration and enforcement of applicable construction regulations.

(s) “Equipment” means plumbing, heating, electrical, ventilating, air conditioning, and refrigerating equipment.
(t) “Governmental subdivision” means a county, city, village, or township which in accordance with section 8 has assumed responsibility for administration and enforcement of this act and the code within its jurisdiction.

(u) “Mobile home” means a vehicular, portable structure built on a chassis pursuant to the national manufactured housing construction and safety standards act of 1974, title VI of the housing and community development act of 1974, Public Law 93-383, 42 U.S.C. 5401 to 5426, and designed to be used without a permanent foundation as a dwelling when connected to required utilities and which is, or is intended to be, attached to the ground, to another structure, or to a utility system on the same premises for more than 30 consecutive days.

(v) "Other laws and ordinances" means other laws and ordinances whether enacted by this state or by a county, city, village, or township and the rules issued under those laws and ordinances.

(w) “Owner” means the owner of the freehold of the premises or lesser estate in the premises, a mortgagee or vendee in possession, an assignee of rents, receiver, executor, trustee, lessee, or any other person, sole proprietorship, partnership, association, or corporation directly or indirectly in control of a building, structure, or real property or his or her duly authorized agent.

(x) “Person with disabilities” means an individual whose physical characteristics have a particular relationship to that individual's ability to be self-reliant in the individual's movement throughout and use of the building environment.

(y) “Premanufactured unit” means an assembly of materials or products intended to comprise all or part of a building or structure, and which is assembled at other than the final location of the unit of the building or structures by a repetitive process under circumstances intended to insure uniformity of quality and material content. Premanufactured unit includes a mobile home.

(z) “Structure” means that which is built or constructed, an edifice or building of any kind, or a piece of work artificially built up or composed of parts joined together in some definite manner. Structure does not include a structure incident to the use for agricultural purposes of the land on which the structure is located and does not include works of heavy civil construction including, but not limited to, a highway, bridge, dam, reservoir, lock, mine, harbor, dockside port facility, an airport landing facility and facilities for the generation or transmission, or distribution of electricity. Structure includes the meaning “or part or parts of the structure and all equipment in the structure” unless the context clearly requires a different meaning.

(2) Unless the context clearly indicates otherwise, a reference to this act, or to this act and the code, means this act and rules promulgated pursuant to this act including the code.


Compiler's Notes: Enacting section 1 of Act 245 of 1999 provides: “Enacting section 1. The title and sections 2a, 3a, 8a, 8b, and 9b of the state construction code act of 1972, 1972 PA 230, the title as amended and sections 2a, 3a, 8a, 8b, and 9b as added by this amendatory act, are effective upon enactment but apply only to 1 or more of the following codes only upon the effective date of the particular code

Popular Name: Act 230
Popular Name: Uniform Construction Code


Compiler's Notes: The repealed section pertained to state construction code commission.
Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1503a State construction code commission; creation; membership; quorum; meetings; designation of chairperson; exercise of authority; rules; compliance with open meetings act and freedom of information act.

Sec. 3a.

(1) The state construction code commission is created and consists of the state fire marshal or an employee of the bureau of fire services created in section 1b of the fire prevention code, 1941 PA 207, MCL 29.1b, designated by the state fire marshal and a designee of the chairpersons of the barrier free design board, the electrical administrative board, the state plumbing board, and the board of mechanical rules, who shall be permanent members, and 12 residents of the state to be appointed by the governor with the advice and consent of the senate. Appointed members of the commission shall include 1 person from each of the fields of industrial management, architecture, professional engineering, building contracting, organized labor, premanufactured building, and 3 members representing municipal building inspection; 2 persons from the general public; and a licensed residential builder. A member of the commission appointed by the governor before January 1, 2007 shall be appointed for a term of 2 years, except that a vacancy shall be filled for the unexpired portion of the term. A member of the commission appointed by the governor after December 31, 2006 shall be appointed for a term of 4 years, except that a vacancy shall be filled for the unexpired portion of the term. A member of the commission may be removed from office by the governor for inefficiency, neglect of duty, or misconduct or malfeasance in office. A member of the commission who has a pecuniary interest in a matter before the commission shall disclose the interest before the commission takes action in the matter, which disclosures shall be made a matter of record in its official proceedings. Each member of the commission, except the state fire marshal or the state fire marshal's designee, shall receive reimbursement for actual expenses incurred by the member in the performance of the duties as a member of the commission, subject to available appropriations.
(2) Nine members of the commission constitute a quorum. Except as otherwise provided in the commission's bylaws, action may be taken by the commission by vote of a majority of the members present at a meeting. Meetings of the commission may be called by the chairperson or by 3 members on 10 days' written notice. Not less than 1 meeting shall be held each calendar quarter. A meeting of the commission may be held anywhere in this state.

(3) The commission may elect 1 member as vice-chairperson, and other officers as it determines appropriate, for the terms and with the duties and powers as the commission determines. The vice-chairperson and other officers of the commission shall be elected from those members appointed to the commission by the governor. After December 31, 2006, the governor shall designate a member of the commission to serve as chairperson at the pleasure of the governor.

(4) The commission is within the department but shall exercise its statutory functions independently of the director, except that budgeting, personnel, and procurement functions of the commission shall be performed under the direction and supervision of the director. The director has the sole statutory authority to promulgate rules.

(5) The business that the commission may perform shall be conducted at a public meeting of the commission held in compliance with the open meetings act, 1976 PA 267, MCL 15.261 to 15.275. Public notice of the time, date, and place of the meeting shall be given in the manner required by the open meetings act, 1976 PA 267, MCL 15.261 to 15.275.

(6) A writing prepared, owned, used, in the possession of, or retained by the commission in the performance of an official function shall be made available to the public in compliance with the freedom of information act, 1976 PA 442, MCL 15.231 to 15.246.


**Compiler's Notes:** Enacting section 1 of Act 245 of 1999 provides: "Enacting section 1. The title and sections 2a, 3a, 8a, 8b, and 9b of the state construction code act of 1972, 1972 PA 230, the title as amended and sections 2a, 3a, 8a, 8b, and 9b as added by this amendatory act, are effective upon enactment but apply only to 1 or more of the following codes only upon the effective date of the particular code update promulgated after October 15, 1999: (a) The plumbing code, R 408.30701 to 408.30796 of the Michigan administrative code. [Effective July 31, 2001]" (b) The electrical code, R 408.30801 to 408.30873 of the Michigan administrative code. [Effective December 7, 1999]" (c) The mechanical code, R 408.30901a to 408.30995a of the Michigan administrative code. [Effective July 31, 2001]" (d) The building code, R 408.30401 to 408.30499 of the Michigan administrative code."

**Popular Name:** Act 230

**Popular Name:** Uniform Construction Code

125.1504 State construction code; rules; promulgation; contents; purposes, objectives, and standards; availability of code to public.
Sec. 4.

(1) The director shall prepare and promulgate the state construction code consisting of rules governing the construction, use, and occupation of buildings and structures, including land area incidental to the buildings and structures, the manufacture and installation of building components and equipment, the construction and installation of premanufactured units, the standards and requirements for materials to be used in connection with the units, and other requirements relating to the safety, including safety from fire, and sanitation facilities of the buildings and structures.

(2) The code shall consist of the international residential code, the international building code, the international mechanical code, the international plumbing code published by the international code council, the national electrical code published by the national fire prevention association, and the Michigan uniform energy code with amendments, additions, or deletions as the director determines appropriate.

(3) The code shall be designed to effectuate the general purposes of this act and the following objectives and standards:

(a) To provide standards and requirements for construction and construction materials consistent with nationally recognized standards and requirements.

(b) To formulate standards and requirements, to the extent practicable in terms of performance objectives, so as to make adequate performance for the use intended the test of acceptability.

(c) To permit to the fullest extent feasible the use of modern technical methods, devices, and improvements, including premanufactured units, consistent with reasonable requirements for the health, safety, and welfare of the occupants and users of buildings and structures.

(d) To eliminate restrictive, obsolete, conflicting, and unnecessary construction regulations that tend to increase construction costs unnecessarily or restrict the use of new materials, products, or methods of construction, or provide preferential treatment to types or classes of materials or products or methods of construction.

(e) To insure adequate maintenance of buildings and structures throughout this state and to adequately protect the health, safety, and welfare of the people.

(f) To provide standards and requirements for cost-effective energy efficiency that will be effective April 1, 1997.

(g) Upon periodic review, to continue to seek ever-improving, cost-effective energy efficiencies.

(h) The development of a voluntary consumer information system relating to energy efficiencies.

(4) The code shall be divided into sections as the director considers appropriate including, without limitation, building, plumbing, electrical, and mechanical sections. The boards shall participate in and work with the staff of the director in the
preparation of parts relating to their functions. Before the promulgation of an amendment to the code, the boards whose functions relate to that code shall be permitted to draft and recommend to the director proposed language. The director shall give consideration to all submissions by the boards. However, the director has final responsibility for the promulgation of the code.

(5) The code may incorporate the provisions of a code, standard, or other material by reference. The director shall add, amend, and rescind rules to update the code not less than once every 3 years to coincide with the national code change cycle.

(6) Before the Michigan building code, the Michigan residential code, the Michigan plumbing code, the Michigan mechanical code, the Michigan uniform energy code, and the Michigan rehabilitation code may be enforced, the director shall make each Michigan-specific code available to the general public for at least 45 days in printed, electronic, or other form that does not require the user to purchase additional documents or data in any form in order to have an updated complete version of each specific code, excluding other referenced standards within each code. This subsection does not apply to any code effective before April 1, 2005.


Popular Name: Act 230

Popular Name: Uniform Construction Code

Admin Rule: R 408.30101 et seq.; R 408.31070; R 408.31087 et seq. of the Michigan Administrative Code.


Compiler's Notes: The report of the advisory committee's actions and recommendations, required by this section, was transmitted by the Director of the Department of Labor to the Clerk of the House of Representatives and the Secretary of the Senate by letters dated January 5, 1988. 1988 Journal of the House 9 (No. 1, January 13, 1988) and 1988 Journal of the Senate 5 (No. 1, January 13, 1988).

Popular Name: Act 230

Popular Name: Uniform Construction Code

125.1504b Bed and breakfast.

Sec. 4b.

(1) A bed and breakfast is considered under the code to be a single family residential structure and shall not be treated as a hotel or other facility serving transient tenants. This section is effective throughout the state without local modification, notwithstanding the exemption provisions of section 8.

(2) This section does not affect local zoning, fire safety, or housing regulations.
(3) As used in this section, "bed and breakfast" means a single family residential structure that meets all of the following criteria:

(a) Has 10 or fewer sleeping rooms, including sleeping rooms occupied by the innkeeper, 1 or more of which are available for rent to transient tenants.

(b) Serves meals at no extra cost to its transient tenants.

(c) Has a smoke detector in proper working order in each sleeping room and a fire extinguisher in proper working order on each floor.


\textbf{Popular Name:} Act 230
\textbf{Popular Name:} Uniform Construction Code

125.1504c Installation of smoke alarms in existing buildings or structures; promulgation of rules required.

Sec. 4c.

(1) Beginning 1 year after the effective date of the rules promulgated under subsection (2), the owner of an existing building or structure constructed before November 6, 1974 shall install 1 or more smoke alarms in that building or structure, as provided in those rules.

(2) The director shall promulgate rules that establish standards and requirements for the installation of smoke alarms in a building or structure described in subsection (1). The rules shall include both of the following:

(a) For a single family dwelling, 1 or 2 family detached dwelling, or multiple family dwelling, a requirement for the installation of at least 1 single-station smoke alarm in each dwelling unit.

(b) For a building or structure that is not a single family dwelling, 1 or 2 family detached dwelling, or multiple family dwelling, a requirement for the installation of smoke alarms as provided in the code.

(3) A building that is renovated, reconstructed, or added to or whose use or occupancy is changed shall meet the requirements contained in the code for installation of smoke alarms.

(4) As used in this section, "smoke alarm" and "single-station smoke alarm" mean those terms as defined in section 82a of the housing law of Michigan, 1917 PA 167, MCL 125.482a.

\textbf{Popular Name:} Act 230
\textbf{Popular Name:} Uniform Construction Code
125.1505 Powers of commission.

Sec. 5.

(1) The commission has all powers necessary or convenient to carry out and effectuate the purposes and provisions of this act, including, without limitation, the powers hereinafter set forth.

(2) The commission may sue and be sued; have a seal and alter it; make and execute contracts and other instruments; and adopt, amend and rescind bylaws for its organization and internal management.

(3) The commission may promulgate, amend and rescind rules necessary, desirable or proper to carry out its powers and duties under this act and relating to the administration and enforcement of the code by enforcing agencies and relating to the qualifications and licensing of persons making inspections provided for under this act.

(4) The commission may encourage, support or conduct, either by itself or in cooperation with enforcing agencies, associations of building code officials, or any other persons, educational and training programs for employees, agents and inspectors of enforcing agencies.

(5) The commission may study the effect of the code, and other related laws, to ascertain their effect on the cost of building construction and maintenance, and the effectiveness of their provisions for insuring the health, safety and welfare of the people of this state.

(6) The commission may determine after testing and evaluation whether a material, product, method of manufacture or method of construction or installation is acceptable under the code; issue certificates of such acceptability; and establish procedures for the testing of such devices, materials, fixtures, methods, systems or processes, including contracting with an existing testing laboratory for such testing.

(7) The commission may take testimony and hold hearings relating to any aspect or matter relative to the administration or enforcement of this act. In the enforcement of this act, it may issue subpoenas to compel the attendance of witnesses and the production of evidence. The commission may designate 1 or more of its members or employees to hold public hearings and report thereon to the commission.

Compiler's Notes: In the last sentence of subsection (7), the phrase “1 or more or its members” should evidently read “1 or more of its members.”
Popular Name: Act 230
Popular Name: Uniform Construction Code
Admin Rule: R 408.30101 et seq. of the Michigan Administrative Code.

125.1506 Rules; promulgation; copies; exceptions.

Sec. 6.
Rules promulgated by the commission shall be promulgated pursuant to Act No. 306 of the Public Acts of 1969, as amended, being sections 24.201 to 24.315 of the Michigan Compiled Laws. The commission shall send or deliver a copy of its promulgated rules to each governmental subdivision. This section shall not apply to rules adopted by the commission relating only to its organization or internal management or which fix fees to be established by the commission.

Popular Name: Act 230
Popular Name: Uniform Construction Code
Admin Rule: R 408.30101 et seq. of the Michigan Administrative Code.

125.1507 Director, subordinate officers, employees, experts, consultants, technical advisers, and advisory committees; appointment; duties; compensation; effectuating objectives of act; federal cooperation, funds, and grants.

Sec. 7.

(1) After consultation and with the approval of the commission, the director may do the following:

(a) Subject to civil service requirements, appoint subordinate officers and employees of the commission, including legal counsel, and prescribe their duties and fix their compensation.

(b) Appoint or use experts, consultants, technical advisers, and advisory committees for assistance and recommendations relative to preparation and promulgation of the code and to assist the commission and the director in carrying out this act.

(c) Subject to the advice of the commission, do those things necessary or desirable to effectuate the general purposes and specific objectives of this act.

(2) The director shall cooperate with agencies of the federal government, may enter into contracts to receive funds, and may receive grants from the federal government to carry out the purposes of this act.

Popular Name: Act 230
Popular Name: Uniform Construction Code


Compiler's Notes: The repealed section pertained to applicability of act and state construction code.
Popular Name: Act 230
Popular Name: Uniform Construction Code

**125.1508a Applicability of act and state construction code.**

Sec. 8a.

(1) This act and the code apply throughout the state.

(2) Within 10 days after the effective date of this subsection, the director shall provide a notice of intent form to all governmental subdivisions administering and enforcing a nationally recognized model code other than the code established by the commission under this act. This form shall set forth the date return receipt is required, which date shall not be less than 60 days after receipt. The chief elected official of the governmental subdivision that receives this notice shall indicate on the form the intention of the governmental subdivision as to whether it shall administer and enforce the code and transmit this notice to the director within the prescribed period. If a governmental subdivision fails to submit a notice of intent to administer and enforce the code within the date set forth in the notice, the director shall send a notice by registered mail to the clerk of that governmental subdivision. The registered notice shall indicate that the governmental subdivision has 15 additional days in which to submit a notice of intent to administer and enforce the code. If the governmental subdivision does not respond by the end of the 15 additional days, it shall be conclusively presumed that the governmental subdivision does not intend to administer and enforce the code, and the director shall assume the responsibility for administering and enforcing this act and the code in that governmental subdivision, unless the county within which that governmental subdivision is located has submitted a notice of intent to continue to administer and enforce this act and the code. Governmental subdivisions may provide by agreement for joint enforcement of the code.

(3) A governmental subdivision that has elected to assume responsibility for the administration and enforcement of this act and the code, and has submitted a notice of intent to continue to administer and enforce the code to the director pursuant to section 8b, after the effective date of this subsection, may reverse that election.

(4) A governmental subdivision that, before the effective date of this subsection, has elected to exempt itself pursuant to section 8(1) may reverse that election, making itself subject to the act and the code. However, that action shall not take effect until 60 days after passage of an ordinance to that effect. A structure commenced under an effective code shall be completed under that code.

(5) A governmental subdivision that, before the effective date of this subsection, has not administered and enforced either this act and the code or another nationally recognized model code may elect to enforce this act and the code pursuant to subsection (1) by the passage of an ordinance to that effect. A governmental subdivision that makes this election after the effective date of this subsection shall submit, in addition to the ordinance, an application to the commission for approval to administer and enforce that code within its jurisdiction. This application shall be made on the proper form to be provided by the commission. The standards for approval shall include, but not be limited to, the certification by the governmental subdivision that the enforcing agency is qualified by experience or training to
administer and enforce the code and all related acts and rules, that agency personnel are provided as necessary, administrative services are provided, plan review services are provided, and timely field inspection services shall be provided. The director shall seek additional information if the director considers it necessary. The commission shall render a decision on the application for approval to administer and enforce the code that has been adopted and transmit its findings to that governmental subdivision within 90 days of receipt of the application. The commission shall document its reasons if the commission disapproves an application. A governmental subdivision that receives a disapproval may resubmit its application for approval. Upon receipt of approval from the commission for the administration and enforcement of the code, the governmental subdivision shall administer and enforce the code within its jurisdiction pursuant to the provisions of its approved application.

(6) The code or any of its sections shall take effect 6 months after the code's initial promulgation. The 6-month delay does not apply to rules promulgated to implement sections 13a, 13b, 13c, 19, and 21 and the requirements of barrier free design and energy conservation of this act and code. The 6-month delay does not apply to amendments to the code or any of the code's sections after the initial promulgation.

(7) The standards for premanufactured housing shall not be less than the standards required for nonpremanufactured housing, except that manufactured homes labeled pursuant to the national manufactured housing construction and safety standards act of 1974, title VI of the housing and community development act of 1974, Public Law 93-383, 42 U.S.C. 5401 to 5426, shall be considered to have complied with this requirement.

(8) The commission may limit the application of a part of the code to include or exclude the following:

(a) Specified classes or types of buildings or structures, according to use, or other distinctions as may make differentiation or separate classification or regulation necessary, proper, or desirable. The commission shall consider the specific problems of the construction or alteration of a single family, owner-occupied recreational dwelling that is located in a sparsely populated area and that is to be occupied on a part-time basis.

(b) Specified areas of the state based on size, population density, special conditions prevailing in the area, or other factors as may make differentiation or separate classification or regulation necessary, proper, or desirable.

(9) A building or structure that has baby changing stations in the women's restrooms shall have baby changing stations in the men's restrooms.

(10) The code shall provide, where appropriate, for standards involving location and construction of ratwalls that are not less than those standards in existence on the effective date of this section.


**Compiler's Notes:** Enacting section 1 of Act 245 of 1999 provides: “Enacting section 1. The title and sections 2a, 3a, 8a, 8b, and 9b of the state construction code act of 1972, 1972 PA 230, the title as amended and sections 2a, 3a, 8a, 8b, and 9b as
added by this amendatory act, are effective upon enactment but apply only to 1 or more of the following codes only upon the effective date of the particular code update promulgated after October 15, 1999: “(a) The plumbing code, R 408.30701 to 408.30796 of the Michigan administrative code. [Effective July 31, 2001]”(b) The electrical code, R 408.30801 to 408.30873 of the Michigan administrative code. [Effective December 7, 1999]”(c) The mechanical code, R 408.30901a to 408.30995a of the Michigan administrative code. [Effective July 31, 2001]”(d) The building code, R 408.30401 to 408.30499 of the Michigan administrative code.” [Effective July 31, 2001]

**Popular Name:** Act 230

**Popular Name:** Uniform Construction Code

125.1508b Administration and enforcement of act and state construction code.

Sec. 8b.

(1) Except as otherwise provided in this section, the director is responsible for administration and enforcement of this act and the code. A governmental subdivision may by ordinance assume responsibility for administration and enforcement of this act within its political boundary. A county ordinance adopted pursuant to this act shall be adopted by the county board of commissioners and shall be signed by the chairperson of the county board of commissioners and certified by the county clerk.

(2) A governmental subdivision that has assumed the responsibility for administering and enforcing this act and the code may, through its chief legal officer, issue a complaint and obtain a warrant for a violation of this act or the code and prosecute the violation with the same power and authority it possesses in prosecuting a local ordinance violation. If pursuant to section 23, a governmental subdivision has by ordinance designated a violation of the act or code as a municipal civil infraction, the governmental subdivision may issue a citation or municipal ordinance violation notice pursuant to chapter 87 of the revised judicature act of 1961, 1961 PA 236, MCL 600.8701 to 600.8735, for a violation of the act or code. Unless otherwise provided by local law or ordinance, the legislative body of a governmental subdivision responsible for administration and enforcement of this act and the code shall designate an enforcing agency that shall discharge the responsibilities of the governmental subdivision under this act. Governmental subdivisions may provide by agreement for joint enforcement of this act.

(3) Subject to the other provisions of this act, an enforcing agency is any official or agent of a governmental subdivision that is registered under the building officials and inspectors registration act, 1986 PA 54, MCL 338.2301 to 338.2313, qualified by experience or training to perform the duties associated with construction code administration and enforcement.

(4) Before December 28, 1999, the director shall provide each governmental subdivision administering and enforcing this act and the code with a notice of intent form. This form shall set forth the date return receipt is required, which date shall not be less than 60 days. The chief elected official of the governmental subdivision that receives this notice shall indicate on the form the intention of the governmental subdivision as to whether it shall continue to administer and enforce this act and the code and transmit this notice to the director within the prescribed period. If a
governmental subdivision fails to submit a notice of intent to continue to administer and enforce this act and the code within the date set forth in the notice, the director shall send a notice by registered mail to the clerk of that governmental subdivision. This notice shall indicate that the governmental subdivision has 15 additional days in which to submit a notice of intent to continue to administer and enforce this act and the code. If the governmental subdivision does not respond by the end of the 15 additional days, it shall be conclusively presumed that the governmental subdivision does not intend to continue to administer and enforce this act and the code and the director shall assume the responsibility for administering and enforcing this act and the code in that governmental subdivision, unless the county within which the governmental subdivision is located submits a notice of intent to continue to administer and enforce this act and the code.

(5) A county that is administering and enforcing this act and the code on December 28, 1999 and that submits a notice of intent to continue to administer and enforce this act and the code pursuant to subsection (4) is responsible for the administration and enforcement of this act and the code for each governmental subdivision within the county that does not submit a notice of intent to continue to administer and enforce this act and the code. The director shall notify the county of those governmental subdivisions that do not submit a notice of intent.

(6) A governmental subdivision that, before December 28, 1999, did not administer and enforce this act and the code may elect to assume the responsibility for the administration and enforcement of this act and the code pursuant to subsection (1) by the passage of an ordinance to that effect. A governmental subdivision that makes this election after December 28, 1999 shall submit, in addition to the ordinance, an application to the commission for approval to administer and enforce this act and the code within its jurisdiction. This application shall be made on the proper form to be provided by the commission. The standards for approval shall include, but not be limited to, the certification by the governmental subdivision that the enforcing agency is qualified by experience or training to administer and enforce this act and the code and all related acts and rules, that agency personnel are provided as necessary, that administrative services are provided, that plan review services are provided, and that timely field inspection services will be provided. The director shall seek additional information if the director considers it necessary. The commission shall render a decision on the application for approval to administer and enforce this act and the code and transmit its findings to the governmental subdivision within 90 days of receipt of the application. The commission shall document its reasons, if the commission disapproves an application. A governmental subdivision that receives a disapproval may resubmit its application for approval. Upon receipt of approval from the commission for the administration and enforcement of this act and the code, the governmental subdivision shall administer and enforce this act and the code within its jurisdiction pursuant to the provisions of this act and the application.

(7) A governmental subdivision that elects to administer and enforce this act and the code within its jurisdiction by the adoption of an ordinance may rescind that ordinance and transfer the responsibility for the administration and enforcement of this act and the code to the director. The director shall assume the responsibility for administering and enforcing this act and the code in that governmental subdivision, unless the county within which that governmental subdivision is located has submitted a notice of intent to continue to administer and enforce the code.
However, that action shall not take effect until 12 months after the passage of an ordinance to that effect. A structure commenced under an effective code shall be completed under that code.

(8) The director is responsible for administration and enforcement of this act and the code for buildings and structures that are not under the responsibility of an enforcing agency in those governmental subdivisions that elect to administer and enforce this act and the code. A building or structure owned by the state shall not be erected, remodeled, or reconstructed in the state, except school buildings or facilities or institutions of higher education as described in section 4 of article VIII of the state constitution of 1963, until written approval of the plans and specifications has been obtained from the bureau of construction codes and safety located within the department indicating that the state owned facilities shall be designed and constructed in conformance with the state construction code. The bureau of construction codes and safety shall be the lead agency in the coordination and implementation of this subsection. The bureau of construction codes and safety shall perform required plan reviews and inspections as required by the state construction code. Each department shall secure required plan approvals and permits from the bureau. Fees charged by the bureau for permits shall be in accordance with the commission's approved schedule of fees. State departments and institutions may allow local inspectors to inspect the construction of state owned facilities. However, an inspection conducted by a local inspector shall be of an advisory nature only.

(9) This section does not affect the responsibilities of the commission for administration and enforcement of this act under other sections of this act, or responsibilities under the fire prevention code, 1941 PA 207, MCL 29.1 to 29.33; 1937 PA 306, MCL 388.851 to 388.855a; the firefighters training council act of 1966, 1966 PA 291, MCL 29.361 to 29.377; 1942 (1st Ex Sess) PA 9, MCL 419.201 to 419.205; parts 215 and 217 of the public health code, 1978 PA 368, MCL 333.21501 to 333.21799e; and section 58 of the social welfare act, 1939 PA 280, MCL 400.58.

(10) Pursuant to parts 215 and 217 of the public health code, 1978 PA 368, MCL 333.21501 to 333.21799e, the director shall develop consistent construction standards for hospitals and nursing homes. These standards shall ensure that consistent, uniform, and equitable construction requirements and state supervision of the requirements are achieved. This subsection does not preclude a state agency or a governmental subdivision from conducting plan reviews or inspections necessary to ensure compliance with approved construction plans.

(11) Except as otherwise provided in this act, this act does not limit or restrict existing powers or authority of governmental subdivisions, and this act shall be enforced by governmental subdivisions in the manner prescribed by local law or ordinance. To the extent not inconsistent with this act, local laws and ordinances relating to administration and enforcement of construction regulations enacted before the effective date of the code by or for a governmental subdivision are applicable to administration and enforcement of the code in that governmental subdivision.


**Compiler's Notes:** Enacting section 1 of Act 245 of 1999 provides:“Enacting section
1. The title and sections 2a, 3a, 8a, 8b, and 9b of the state construction code act of 1972, 1972 PA 230, the title as amended and sections 2a, 3a, 8a, 8b, and 9b as added by this amendatory act, are effective upon enactment but apply only to 1 or more of the following codes only upon the effective date of the particular code update promulgated after October 15, 1999:“(a) The plumbing code, R 408.30701 to 408.30796 of the Michigan administrative code. [Effective July 31, 2001]”(b) The electrical code, R 408.30801 to 408.30873 of the Michigan administrative code. [Effective December 7, 1999]”(c) The mechanical code, R 408.30901a to 408.30995a of the Michigan administrative code. [Effective July 31, 2001]”(d) The building code, R 408.30401 to 408.30499 of the Michigan administrative code.” [Effective July 31, 2001] 

**Popular Name:** Act 230  
**Popular Name:** Uniform Construction Code  


**Compiler's Notes:** The repealed sections pertained to administration and enforcement of act and state construction code, and performance evaluation of enforcement agency. 

**Popular Name:** Act 230  
**Popular Name:** Uniform Construction Code  

125.1509b Performance evaluation of enforcing agency.

Sec. 9b.

(1) The director, as prescribed in this section, may conduct a performance evaluation of an enforcing agency to assure that the administration and enforcement of this act and the code is being done pursuant to either section 8a or 8b. A performance evaluation may only be conducted either at the request of the local enforcing agency or upon the receipt of a written complaint. If a performance evaluation is to be conducted upon the receipt of a written complaint, the director shall first refer the written complaint to the affected enforcing agency requesting a written response within 10 days. If the local enforcing agency fails to provide a written response, or if the response is considered inadequate, the director shall consult with the commission and request approval to conduct the performance evaluation. The director shall submit a written recommendation to the commission and shall send a copy to the affected enforcing agency, along with a reasonable notice of the commission meeting at which the recommendation will be presented. The decision of the commission to proceed with a performance evaluation shall be made at a public meeting. This decision shall be mailed to the enforcing agency 10 days in advance of conducting the performance evaluation.

(2) When conducting a performance evaluation of an enforcing agency, the director may request that the local enforcing agency accompany the director or other state inspectors on inspections. The inspections shall be for the enforcement of this act and the code. The enforcing agency shall maintain all official records and documents relating to applications for permits, inspection records including correction notices, orders to stop construction, and certificates of use and occupancy. The enforcing agency shall make available for review all official records between 8 a.m. and 5 p.m. on business days.
(3) Upon completion of a performance evaluation, the director shall report the findings and any recommendations to the commission and the local enforcing agency. The commission may issue a notice of intent to withdraw the responsibility for the administration and enforcement of this act and the code from a governmental subdivision after receiving the results of a performance evaluation. The notice shall include the right to appeal within 30 business days after receipt of the notice of intent to withdraw the responsibility. The notice shall also include the findings of the director, after completion of a performance evaluation, that the enforcing agency of that governmental subdivision has failed to follow the duties recognized under this act, the code, or its ordinance. Failure by the enforcing agency or the chief elected official of that governmental subdivision to request a hearing within 30 business days after receipt of the notice of intent to withdraw the responsibility shall be considered to exhaust the enforcing agency's administrative remedies and the notice shall be considered a final order of the commission under the administrative procedures act of 1969, 1969 PA 306, MCL 24.201 to 24.328. The director shall assume responsibility for the administration and enforcement of this act and the code, unless the county within which that governmental subdivision is located has submitted a notice of intent to continue to administer and enforce this act and the code, when the notice is considered a final order of the commission. A structure commenced under an effective code shall be completed under that code.

(4) If an enforcing agency or the chief elected official of the governmental subdivision transmits an appeal of the notice of intent to withdraw the responsibility issued under subsection (3), the commission chairperson shall request appointment of a hearings officer. The hearings officer shall conduct a hearing of the appeal pursuant to the administrative procedures act of 1969, 1969 PA 306, MCL 24.201 to 24.328, and issue a proposed decision which shall be sent to the affected parties. The proposed decision shall become the final order issued by the commission, unless exceptions are filed by a party within 30 days after receipt of the proposed decision. The commission shall review the proposed decision when exceptions are filed.

(5) The commission in reviewing a proposed decision may affirm, modify, reverse, or remand the proposed decision. When the commission affirms, modifies, reverses, or remands a proposed decision, the decision of the commission shall be in writing and contain the findings of fact and conclusions of law upon which its decision is based. Other than in a case of remand, the period for seeking judicial review of the commission's decision under section 104 of the administrative procedures act of 1969, 1969 PA 306, MCL 24.304, shall begin to run upon receipt by the parties of the commission's written decision.


Compiler's Notes: Enacting section 1 of Act 245 of 1999 provides:"Enacting section 1. The title and sections 2a, 3a, 8a, 8b, and 9b of the state construction code act of 1972, 1972 PA 230, the title as amended and sections 2a, 3a, 8a, 8b, and 9b as added by this amendatory act, are effective upon enactment but apply only to 1 or more of the following codes only upon the effective date of the particular code update promulgated after October 15, 1999."(a) The plumbing code, R 408.30701 to 408.30796 of the Michigan administrative code. [Effective July 31, 2001]"(b) The electrical code, R 408.30801 to 408.30873 of the Michigan administrative code. [Effective December 7, 1999]"(c) The mechanical code, R 408.30901a to 408.30995a of the Michigan administrative code. [Effective July 31, 2001]"(d) The
building code, R 408.30401 to 408.30499 of the Michigan administrative code.”
[Effective July 31, 2001]
**Popular Name:** Act 230
**Popular Name:** Uniform Construction Code

125.1510 Application for building permit; form; fee; contents; statement; site plan; affidavit; filing written instrument designating agent, attorney, architect, engineer, or builder; additional information required for residential builder or residential maintenance and alteration contractor, master or journeyman plumber, electrical contractor or master or journeyman electrician, or mechanical contractor; statement required in building application form; filing application; availability of application and other writings to public; custody of application; imposition of requirements for additional permits; buildings for which permit not required.

Sec. 10.

(1) Except as otherwise provided in the code, before construction of a building or structure, the owner, or the owner's builder, architect, engineer, or agent, shall submit an application in writing to the appropriate enforcing agency for a building permit. The application shall be on a form prescribed by the commission and shall be accompanied by payment of the fee established by the enforcing agency. The application shall contain a detailed statement in writing, verified by affidavit of the person making it, of the specifications for the building or structure, and full and complete copies of the plans drawn to scale of the proposed work. A site plan showing the dimensions, and the location of the proposed building or structure and other buildings or structures on the same premises, shall be submitted with the application. The application shall state in full the name and residence, by street and number, of the owner in fee of the premises on which the building or structure will be constructed, and the purposes for which it will be used.

(2) If construction is proposed to be undertaken by a person other than the owner of the land in fee, the statement shall contain the full name and residence, by street and number, of the owner and also of the person proposing the construction. The affidavit shall state that the specifications and plans are true and complete and contain a correct description of the building or structure, lot, and proposed work. The statements and affidavits may be made by an owner, or the owner's attorney, agent, engineer, architect, or builder, by the person who proposes to make the construction or alteration, or by that person's agent, engineer, architect, or builder. A person shall not be recognized as the agent, attorney, engineer, architect, or builder of another person unless the person files with the enforcing agency a written instrument, which shall be an architectural, engineering or construction contract, power of attorney, or letter of authorization signed by that other person designating the person as the agent, attorney, architect, engineer, or builder and, in case of a residential builder or maintenance and alteration contractor, architect, or engineer, setting forth the person's license number and the expiration date of the license.

(3) A person licensed or required to be licensed as a residential builder or residential maintenance and alteration contractor under the occupational code, 1980 PA 299, MCL 339.101 to 339.2721, a master or journeyman plumber pursuant to 1929 PA 266, MCL 338.901 to 338.917, an electrical contractor or master or journeyman
electrician pursuant to the electrical administrative act, 1956 PA 217, MCL 338.881 to 338.892, or pursuant to a local ordinance, or as a mechanical contractor pursuant to the forbes mechanical contractors act, 1984 PA 192, MCL 338.971 to 338.988, who applies for a building permit to perform work on a residential building or a residential structure shall, in addition to any other information required pursuant to this act, provide on the building permit application all of the following information:

(a) The occupational license number of the applicant and the expiration date of the occupational license.

(b) One of the following:

(i) The name of each carrier providing worker's disability compensation insurance to the applicant if the applicant is required to be insured pursuant to the worker's disability compensation act of 1969, 1969 PA 317, MCL 418.101 to 418.941.

(ii) The reasons for exemption from the requirement to be insured if the applicant is not required to be insured under the worker's disability compensation act of 1969, 1969 PA 317, MCL 418.101 to 418.941.

(c) One of the following:

(i) The employer identification number, if the applicant is required to have an employer identification number pursuant to section 6109 of the internal revenue code.

(ii) The reasons for exemption from the requirement to have an employer identification number pursuant to section 6109 of the internal revenue code if the applicant is not required to have an employer identification number pursuant to section 6109 of the internal revenue code.

(d) One of the following:

(i) The Michigan employment security commission employer number, if the applicant is required to make contributions pursuant to the Michigan employment security act, 1936 (Ex Sess) PA 1, MCL 421.1 to 421.75.

(ii) If the applicant is not required to make contributions, the reasons for exemptions from the requirement to make contributions under the Michigan employment security act, 1936 (Ex Sess) PA 1, MCL 421.1 to 421.75.

(4) The building permit application form shall contain the following statement in 8-point boldfaced type immediately above the location for the applicant's signature:

"Section 23a of the state construction code act of 1972, 1972 PA 230, MCL 125.1523a, prohibits a person from conspiring to circumvent the licensing requirements of this state relating to persons who are to perform work on a residential building or a residential structure. Violators of section 23a are subjected to civil fines."
(5) The application for a building permit shall be filed with the enforcing agency and the application and any other writing prepared, owned, used, in the possession of, or retained by the enforcing agency in the performance of an official function shall be made available to the public in compliance with the freedom of information act, 1976 PA 442, MCL 15.231 to 15.246. An application shall not be removed from the custody of the enforcing agency after a building permit has been issued.

(6) This section shall be construed to allow the imposition of requirements in the code, or in other laws or ordinances, for additional permits for particular kinds of work, including plumbing and electrical, or in other specified situations. The requirements of the code may provide for issuance of construction permits for certain of the systems of a structure and allow construction to commence on those systems approved under that permit even though the design and approval of all the systems of the structure have not been completed and subsequent construction permits have not been issued.

(7) Notwithstanding this section, a building permit is not required for ordinary repairs of a building and structure.

(8) Notwithstanding this section, a building permit is not required for a building incidental to the use for agricultural purposes of the land on which the building is located if it is not used in the business of retail trade.


Compiler’s Notes: In subsection (3), “forbes mechanical contractors act” evidently should read “Forbes mechanical contractors act.”

Popular Name: Act 230

Popular Name: Uniform Construction Code

125.1511 Building permit; examination and approval of application; issuance; changes in plans; commencement of construction; compliance with application; suspension, revocation, or cancellation.

Sec. 11.

(1) The enforcing agency shall examine an application for a building permit. If the application conforms to this act, the code and the requirements of other applicable laws and ordinances, the enforcing agency shall approve the application and issue a building permit to the applicant. An application shall be granted, in whole or in part, or denied within 10 business days, except that in case of an unusually complicated building or structure, action shall be taken within 15 business days. Failure by an enforcing agency to grant, in whole or in part, or deny an application within these periods of time shall be deemed a denial of the application for purposes of authorizing the institution of an appeal to the appropriate board of appeals. The enforcing agency shall approve changes in plans and specifications previously approved by it, if the changes require approval and if the plans and specifications when so changed remain in conformity with law. Except as otherwise provided in this act or the code, the construction or alteration of a building or structure shall not be commenced until a building permit has been issued. The construction of a building or
structure shall comply with the approved application for a building permit, and the enforcing agency shall insure such compliance in the manner provided in section 12 and in any other way it deems appropriate.

(2) The enforcing agency may suspend, revoke or cancel a building permit in case of failure or neglect to comply with the provisions of this act or the code, or upon a finding by it that a false statement or representation has been made in the application for the building permit.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1512 Inspection of construction; consent; time; inspectors; notice of violation; stop order; injunction.

Sec. 12.

(1) An enforcing agency shall periodically inspect all construction undertaken pursuant to a building permit issued by it to insure that the construction is performed in accordance with conditions of the building permit and is consistent with requirements of the code and other applicable laws and ordinances.

(2) The owner of premises on which a building or structure is being constructed is deemed to have consented to inspection by the enforcing agency and the commission of the entire premises and of any construction being performed on it until a certificate of use and occupancy has been issued. An inspector, or team of inspectors, on presentation of proper credentials, may enter and inspect the premises and construction thereon, for purposes of insuring compliance with the building permit, the code and other applicable laws and regulations. An inspection shall be made between 8 a.m. and 6 p.m. on business days, or when construction is actually being undertaken, except if the enforcing agency has probable cause to believe that an immediate danger to life, limb or property exists, or except with permission of an owner, or his agent, architect, engineer or builder. An inspection pursuant to this section shall be solely for purposes of enforcing this act and other laws and ordinances related to construction of buildings and structures. A person other than the owner, his agent, architect, engineer or builder shall not accompany an inspector or team of inspectors on an inspection, unless his presence is necessary for the enforcement of this act, or other laws and ordinances related to construction of the building or structure, or except with the consent of an owner, or his agent, architect, engineer or builder.

(3) If construction is being undertaken contrary to a building permit, this act, or other applicable laws or ordinances, the enforcing agency shall give written notice to the holder of the building permit, or if a permit has not been issued then to the person doing the construction, notifying him of the violation of this act, or other applicable laws and ordinances, and to appear and show cause why the construction should not be stopped. If the person doing the construction is not known, or cannot be located with reasonable effort, the notice may be delivered to the person in charge of, or apparently in charge of, the construction. If the holder of the permit or the person doing the construction fails to appear and show good cause within 1 full
working day after notice is delivered, the enforcing agency shall cause a written order to stop construction to be posted on the premises. A person shall not continue, or cause or allow to be continued, construction in violation of a stop construction order, except with permission of the enforcing agency to abate the dangerous condition or remove the violation, or except by court order. If an order to stop construction is not obeyed, the enforcing agency may apply to the circuit court for the county in which the premises are located for an order enjoining the violation of the stop construction order. This remedy is in addition to, and not in limitation of, any other remedy provided by law or ordinance, and does not prevent criminal prosecution for failure to obey the order.

(4) Without limitation on other available remedies, an interested person may apply for an order, enjoining the continuation of construction undertaken in violation of a building permit, this act, the code or other applicable laws or ordinances, to the circuit court for the county in which the premises are located.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1513 Certificate of use and occupancy; issuance; contents; application; fee; temporary certificate; notice of final inspection.

Sec. 13.

A building or structure hereafter constructed shall not be used or occupied in whole or in part until a certificate of use and occupancy has been issued by the appropriate enforcing agency. A building or structure hereafter altered in whole or in part shall not be used or occupied until such a certificate has been issued, except that a use or occupancy in an already existing building or structure that was not discontinued during its alteration may be continued for 30 days after completion of the alteration without issuance of a certificate of use and occupancy. A certificate of use and occupancy shall be issued by the enforcing agency when the work covered by a building permit has been completed in accordance with the permit, the code and other applicable laws and ordinances. On request of a holder of a building permit the enforcing agency may issue a temporary certificate of use and occupancy for a building or structure, or part thereof, before the entire work covered by the building permit has been completed, if the parts of the building or structure to be covered by the certificate may be occupied before completion of all the work in accordance with the permit, the code and other applicable laws and ordinances, without endangering the health or safety of the occupants or users. When a building or structure is entitled thereto, the enforcing agency shall issue a certificate of use and occupancy within 5 business days after receipt of a written application therefor on a form to be prescribed by the enforcing agency and payment of the fee to be established by it. The certificate of use and occupancy shall certify that the building or structure has been constructed in accordance with the building permit, the code and other applicable laws and ordinances. The application for a certificate of use and occupancy for a new dwelling with a unit or units for rent shall set forth the information required in an application for a certificate of compliance for such a dwelling pursuant to the state housing law, and the certificate of use and occupancy for such a dwelling shall be deemed its initial certificate of compliance. The enforcing agency shall give the
owner of the building or structure or his agent at least 12 hours' notice of the time of any final inspection, by the enforcing agency of the work covered by the building permit, pursuant to the application for a certificate of use and occupancy.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1513a Definitions; prohibited appliances; exceptions; promulgation date.

Sec. 13a.

(1) As used in this section:

(a) "Central furnace" means a self-contained, gas-burning appliance for heating air by transfer of heat of combustion through metal to the air, and designed to supply heated air through ducts to spaces remote from, or adjacent to, the appliance location.

(b) "Clothes dryer" means a device used to dry wet laundry by means of heat derived from the combustion of fuel gases.

(c) "Household cooking gas appliance" means a gas appliance for domestic food preparation, providing any 1 or combination of the following:

(i) Top or surface cooking.

(ii) Oven cooking.

(iii) Broiling.

(2) The code shall contain, as a part of the energy conservation provisions, 1 or more provisions prohibiting the installation in a building or structure of any of the following new appliances which requires for its operation the use of a continuously burning pilot light:

(a) A central furnace having an input rate of 225,000 BTU per hour or less.

(b) A clothes dryer.

(c) A household cooking gas appliance having an electrical supply cord.

(3) The provisions of the code required by this section shall not apply to the following:

(a) A mobile home or modular home.

(b) An appliance that is designed to burn exclusively liquefied petroleum gas.
(c) An appliance which meets the energy efficiency standards prescribed by the federal regulations promulgated pursuant to the energy policy and conservation act, 42 U.S.C. 6201 to 6422.

(4) The provisions of the code required by this section shall be promulgated not later than 90 days after the effective date of this section.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1513b “Lead free” defined; pipes, pipe fittings, solder, or flux to be lead free; exception.

Sec. 13b.

(1) As used in this section, “lead free” means either of the following:

(a) Solder and flux containing not more than 0.2% lead.

(b) Pipe and pipe fittings containing not more than 8% lead.

(2) Beginning on the effective date of this section, pipes, pipe fittings, solder, or flux which are used in the installation or repair of a plumbing system in a building or structure providing water for human consumption or a public water system shall be lead free.

(3) This section shall not apply to leaded joints necessary for the repair of cast iron pipes.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1513c Definitions; minimum standards for board and room facilities; inspection; noncompliance; order; penalty; hearing; payment and recovery of civil penalty; applicability of section.

Sec. 13c.

(1) As used in this section:

(a) “Board and room facility” means a residential building that does not provide separate cooking facilities for individual occupants and that is arranged for primarily nontransient shelter and sleeping accommodations for 3 or more adults. Board and room facility does not include any of the following:

(i) A residential facility for students attending a college or university.
(ii) A facility operated, licensed, or regulated by the state or the federal government.

(iii) A bed and breakfast regulated under section 4b.

(iv) A hotel or motel.

(v) A private dwelling as that term is defined in section 2 of the housing law of Michigan, Act No. 167 of the Public Acts of 1917, being section 125.402 of the Michigan Compiled Laws.

(b) “Operator” means a person who has charge, care, control, or management of a board and room facility.

(c) “Owner” means a person who knows that a residential building in which that person has a legal or equitable interest is being used as a board and room facility, regardless of whether the person has possession of the facility. Owner includes an executor, administrator, trustee, or guardian of the estate of an owner of a residential building if the executor, administrator, trustee, or guardian knows that the residential building is being used as a board and room facility.

(d) “Person” means an individual, partnership, corporation, association, governmental entity, or other legal entity.

(2) A board and room facility shall comply with the minimum property maintenance standards set forth in this act and in the BOCA national property maintenance code, 1993 edition, as published by the building officials and code administrators international, inc., or the uniform housing code, 1991 edition, as published by the international conference of building officials, which codes are adopted by reference and made a part of this section as if fully set out in this section. In addition, a board and room facility shall comply with all of the following:

(a) Interior stairways shall be enclosed by fire separation assemblies having a 1-hour fire resistance rating with all openings protected with smoke-actuated automatic-closing or self-closing doors having a fire resistance comparable to that required for the enclosure.

(b) Vertical openings shall be protected so that no primary exit route is exposed to an unprotected vertical opening. The vertical opening is protected if the opening is cut off and enclosed in a manner that provides a smoke and fire resisting capability of not less than 1 hour. Any doors or openings shall have fire and smoke resisting capability equivalent to that of the enclosure and shall be automatic-closing on detection of smoke or shall be self-closing.

(c) A fire alarm system shall be installed in accordance with the building code, except in buildings that have a smoke detection system meeting or exceeding the requirements of subdivision (f) if that detection system includes at least 1 manual fire alarm station per floor arranged to initiate the smoke detection alarm.

(d) Initiation of the required fire protective signaling system shall be by manual means as provided by the building code, except in buildings protected throughout
with an approved fire suppression system installed in accordance with the building code, with initiation upon actuation of the extinguishing system operation.

(e) Occupant notification of a fire shall be provided automatically, without delay by internal audible alarm in accordance with the building code. Presignal systems are prohibited.

(f) Approved single station or multiple station smoke detectors powered by the building electrical service shall be installed in accordance with the building code on every level. In addition, approved single station smoke detectors powered by the building electrical service shall be provided in each sleeping room, except that existing battery powered detectors shall be accepted if, in the opinion of the code official, they are in operating condition.

(g) Portable fire extinguishers shall bear the label of an approved agency, be of an approved type, and be installed in a visible and accessible location on each occupied floor and basement.

(h) Fire exit drills shall be conducted at least once every 2 months in each facility. Each occupant shall be provided with a written evacuation plan filed with the local authority having jurisdiction. An egress plan shall be posted in each sleeping room showing the building diagram, the room location, and the location of exits.

(i) The interior finish on wall and ceilings and trim materials shall be a minimum class III, tested in accordance with ASTM E-84.

(3) An enforcing agency shall inspect a board and room facility after receiving a complaint alleging a violation by that board and room facility of the minimum standards described in subsection (2), and shall determine whether the board and room facility is in compliance with this act.

(4) If, following an inspection described in subsection (3), an enforcing agency determines that a board and room facility is not in compliance with this act, the enforcing agency shall issue an order to remedy the noncompliance and may issue an order to vacate the premises. The enforcing agency shall serve the order or orders upon the operator of the board and room facility and, if known, the owner of the residential building in which the board and room facility is situated.

(5) This section prescribes minimum standards for board and room facilities. It does not invalidate ordinances or regulations that impose higher standards or stricter requirements.

(6) The enforcing agency may adopt a schedule of monetary civil penalties, not to exceed $500.00 for each violation or day that a violation continues, which may be assessed for a violation of this section. If the enforcing agency believes that an owner or operator has violated this section, it may issue a citation after discovery of the alleged violation. The citation shall be written and shall state with particularity the nature of the violation, the civil penalty established for the violation, and the right to appeal the citation pursuant to subsection (7). The citation shall be delivered or sent by registered mail to the alleged violator.
(7) Not later than 20 days after receipt of the citation, the alleged violator may petition the enforcing agency for an administrative hearing, which shall be held within 60 days after the enforcing agency receives the petition. The administrative hearing may be conducted by a hearing officer, who may affirm, dismiss, or modify the citation. The decision of the hearing officer is final and is not subject to appeal.

(8) A civil penalty assessed by the issuance of a citation under subsection (6) becomes final if a petition is not received within the time specified in subsection (7). A civil penalty imposed shall be paid to the governmental subdivision that has the responsibility of enforcing this section. A civil penalty may be recovered in a civil action brought by the governmental subdivision in the county in which the violation occurred or the defendant resides.

(9) This section applies to a board and room facility constructed or converted for use as a board and room facility after the effective date of this section. Beginning 6 months after the effective date of this section, this section also applies to a board and room facility constructed or converted for use as a board and room facility before the effective date of this section.


Popular Name: Act 230

Popular Name: Uniform Construction Code

125.1513d Requirements for stairwell geometry.

Sec. 13d.

(1) Notwithstanding any provision in this act and until the promulgation of the complete building code update after October 15, 1999, a governmental subdivision shall not enforce a requirement for stairwell geometry in occupancies in use group R-3 structures and within dwelling units in occupancies in use group R-2 structures that differs from the stairwell geometry described in this section.

(2) As used in this section:

(a) “Stairwell geometry” refers to the configuration of a stairwell of a building in which the maximum riser height is 8-1/4 inches (210 mm), the minimum tread depth is 9 inches (229 mm), and a 1-inch (25 mm) nosing on stairwells with solid risers.

(b) “Use group R-2 structures” means all multiple-family dwellings having more than 2 dwelling units including, but not limited to, boarding houses and similar buildings arranged for shelter and sleeping accommodations in which the occupants are primarily not transient in nature and dormitory facilities that accommodate more than 5 persons over 2-1/2 years of age.

(c) “Use group R-3 structures” means all buildings arranged for occupancy as 1-family or 2-family dwelling units including, but not limited to, not more than 5 lodgers or boarders per family; multiple single-family dwellings where each unit has
an independent means of egress and is separated by a 2-hour fire separation assembly; and a child care facility that accommodates 5 or less children of any age.

**Popular Name:** Act 230  
**Popular Name:** Uniform Construction Code

### 125.1513e Sharing elevator between 2 buildings.

Sec. 13e.

This act does not prohibit the sharing of an elevator between 2 buildings as long as the buildings are in compliance with this act, the code, and the following acts and rules promulgated under those acts:

(a) The fire prevention code, 1941 PA 207, MCL 29.1 to 29.34.

(b) 1976 PA 333, MCL 338.2151 to 338.2160.

(c) 1967 PA 227, MCL 408.801 to 408.824.

(d) Any other act or rules regulating elevators in buildings.


### 125.1514 Construction board of appeals; creation; appointment, qualifications, and terms of members; appeal to board; hearing; decision; statement of reasons for decision; appeal to commission; copy of decision; additional powers or duties; procedures; conducting business at public meeting; notice; availability of certain writings to public.

Sec. 14.

(1) A construction board of appeals for each governmental subdivision enforcing the code shall be created consisting of not less than 3 nor more than 7 members, as determined by the governing body of the governmental subdivision. Unless otherwise provided by local law or ordinance, the members of the board of appeals shall be appointed for 2-year terms by the chief executive officer of a city, village, or township and the chairperson of the county board of commissioners of a county. A member of the board of appeals shall be qualified by experience or training to perform the duties of members of the board of appeals. A person may serve on the board of appeals of more than 1 governmental subdivision. If an enforcing agency refuses to grant an application for a building permit, or if the enforcing agency makes any other decision pursuant or related to this act, or the code, an interested person, or the person's authorized agent, may appeal in writing to the board of appeals. The board of appeals shall hear the appeal and render and file its decision with a statement of reasons for the decision with the enforcing agency from whom the appeal was taken not more than 30 days after submission of the appeal. Failure by the board of appeals to hear an appeal and file a decision within the time limit is a
denial of the appeal for purposes of authorizing the institution of an appeal to the commission. A copy of the decision and statement of the reasons for the decision shall be delivered or mailed, before filing, to the party taking the appeal.

(2) This act does not prevent a governmental subdivision from granting its board of appeals additional powers or duties not inconsistent with this act, or from establishing procedures to be followed by its board of appeals insofar as the procedures do not conflict with this act. Except as otherwise provided by this act, or by other laws or ordinances, a board of appeals may by rules establish its own procedures.

(3) The business which the board of appeals may perform shall be conducted at a public meeting of the board of appeals held in compliance with Act No. 267 of the Public Acts of 1976. Public notice of the time, date, and place of the meeting shall be given in the manner required by Act No. 267 of the Public Acts of 1976.

(4) A record of decisions made by the board of appeals, properly indexed, and any other writing prepared, owned, used, in the possession of, or retained by the board of appeals in the performance of an official function shall be made available to the public in compliance with Act No. 442 of the Public Acts of 1976.


**Popular Name:** Act 230

**Popular Name:** Uniform Construction Code

125.1515 Specific variance from code; requirements; breach of condition; permissible variance.

Sec. 15.

(1) After a public hearing a board of appeals may grant a specific variance to a substantive requirement of the code if the literal application of the substantive requirement would result in an exceptional, practical difficulty to the applicant, and if both of the following requirements are satisfied:

(a) The performance of the particular item or part of the building or structure with respect to which the variance is granted shall be adequate for its intended use and shall not substantially deviate from performance required by the code of that particular item or part for the health, safety and welfare of the people of this state.

(b) The specific condition justifying the variance shall be neither so general nor recurrent in nature as to make an amendment of the code with respect to the condition reasonably practical or desirable.

(2) A board of appeals may attach in writing any condition in connection with the granting of a variance that in its judgment is necessary to protect the health, safety and welfare of the people of this state. The breach of a condition shall automatically invalidate the variance and any permit, license and certificate granted on the basis of
it. In no case shall more than minimum variance from the code be granted than is necessary to alleviate the exceptional, practical difficulty.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1516 Appeal to commission; time; hearing; quorum; effect of decision; copy of decision and statement of reasons; record of decisions; public inspection; referral of certain appeals to appropriate board; review of board's decision; petition.

Sec. 16.

(1) An interested person, or the interested person's authorized agent, may appeal a decision of a board of appeals to the commission within 10 business days after filing of the decision with the enforcing agency or, in case of an appeal because of failure of a board of appeals to act within the prescribed time, at any time before filing of the decision. The hearing of an appeal based on the denial of a request for a variance by a board of appeals is within the sole discretion of the commission. If deciding an appeal, the commission may act either as a whole or by a panel of 3 or more of the commission members designated by the commission's chairperson to hear and decide the appeal. A majority of a panel constitutes a quorum and a decision by a panel requires concurrence of at least a majority of the panel's members. If an appeal has been presented to the commission within the time prescribed, the appeal shall be heard de novo by the commission. The commission may affirm, modify, or reverse a decision of the board of appeals or the enforcing agency. Except if modified or reversed by a court of competent jurisdiction, a decision of the commission made under this section is binding on the applicant and the affected board of appeals and enforcing agency. An appeal to the commission shall be decided within 30 days after receipt of the appeal by the commission. A copy of the decision and a statement of reasons for the decision shall be sent to the applicant and filed with the affected board of appeals and enforcing agency within 5 business days after the making of the decision. A record of decisions made by the commission under this section, properly indexed, shall be kept in the office of the commission, and be open to public inspection during business hours in compliance with the freedom of information act, 1976 PA 442, MCL 15.231 to 15.246.

(2) Notwithstanding subsection (1), the executive director of the commission shall refer an appeal to the commission under subsection (1) which in the executive director's judgment relates principally to a mechanical, plumbing, electrical, or barrier free design matter to the appropriate board. The board shall hear and decide the appeal in the same manner as an appeal is heard and decided by the commission under this section, except that a board shall meet as a whole and not in a panel. A person aggrieved by a decision of a board on any appeal under this subsection may petition the commission to review the decision. The commission shall act on the petition within 5 business days after receipt, and may grant the petition at the commission's discretion except that the commission shall grant the petition if it appears that the appeal involves a question of major significance to the people of this state and that the case of the appellant has substantial merit. If the commission
grants the petition, the commission acting as a whole shall review the decision in accordance with a procedure established by the commission's rules.


**Popular Name:** Act 230

**Popular Name:** Uniform Construction Code

**Admin Rule:** R 408.30101 et seq. of the Michigan Administrative Code.

### 125.1517 Effect of appeal on orders, determinations, decisions, and actions.

Sec. 17.

An appeal to a board of appeals or the commission pursuant to this act, or to a court of competent jurisdiction pursuant to Act No. 306 of the Public Acts of 1969, as amended, does not stay a stop construction order issued by an enforcing agency or prevent an enforcing agency from seeking an order in a court of competent jurisdiction enjoining the violation of a stop construction order. In other cases, an appeal to a board of appeals, or to the commission pursuant to this act, or to a court of competent jurisdiction pursuant to Act No. 306 of the Public Acts of 1969, as amended, shall act as a stay upon an order, determination, decision or action appealed from, unless the enforcing agency establishes that immediate enforcement of the order, determination, decision or action is necessary to avoid substantial peril to life or property.

**History:** 1972, Act 230, Eff. Jan. 1, 1973

**Compiler's Notes:** For provisions of Act 306 of 1969, referred to in this section, see § 24.201 et seq.

**Popular Name:** Act 230

**Popular Name:** Uniform Construction Code

### 125.1518 Filing claim of appeal or petition to review.

Sec. 18.

An appeal pursuant to Act No. 306 of the Public Acts of 1969, as amended, from a decision of the commission or a board, following an appeal from a decision of a board of appeals or enforcing agency shall be made by a claim of appeal filed with the court of appeals. An appeal pursuant to that act from any other decision of the commission or of a board shall be by petition to review filed with the Ingham county circuit court.

**History:** 1972, Act 230, Eff. Jan. 1, 1973

**Compiler's Notes:** For provisions of Act 306 of 1969, referred to in this section, see § 24.201 et seq.

**Popular Name:** Act 230

**Popular Name:** Uniform Construction Code
125.1519 Premanufactured units; certificate of acceptability; rules; building permit; fee; objections; hearing.

Sec. 19.

(1) The department shall promulgate rules establishing a procedure by which a premanufactured unit intended for use in this state may be issued a certificate of acceptability by the department at its place of manufacture.

(2) The procedure shall require that the manufacturer submit to the department detailed plans and specifications for the premanufactured unit for approval as in compliance with the code. The department may require that the manufacturer submit test results on the premanufactured unit or its components, any material or information the department considers relevant, or 1 or more of the premanufactured units for testing and evaluation by the department.

(3) Each premanufactured unit shall be inspected by the department, or a qualified person approved by the department, to determine that the premanufactured unit has been manufactured in accordance with plans and specifications submitted under subsection (2). The department may issue a certificate of acceptability for a premanufactured unit that bears the approved label of an independent, nationally recognized body having follow-up inspection service satisfactory to the commission, certifying that the premanufactured unit complies with plans and specifications submitted under subsection (2).

(4) Plans and specifications for 1- and 2-family dwelling premanufactured units may be reviewed by the department or by an independent entity approved by the commission under rules promulgated by the department. The department shall establish submission procedures for plans and specifications reviewed by an independent entity approved by the commission.

(5) A local enforcing agency may also inspect a premanufactured unit at its place of manufacture to determine that it has been manufactured in accordance with plans and specifications submitted under subsection (2) and shall advise the state inspector and the commission in writing of any deviations found.

(6) An approved independent entity shall not conduct in-plant inspections of units for which it performed plan reviews. However, the manufacturer may request a variance from the commission if the literal application of the requirements of this section would result in an exceptional, practical difficulty relating to inspection of specific units. For purposes of this subsection, “exceptional, practical difficulty” includes, but is not limited to, a geographic distance between the manufacturing facility where the units are manufactured and the primary business location of the independent entity that conducts in-plant inspections on behalf of the manufacturer of more than 250 miles and is located in another state.

(7) If an application for a building permit specifying use of a premanufactured unit with a certificate of acceptability is submitted to an enforcing agency, and if the application, except for the part calling for use of a premanufactured unit with a certificate of acceptability, complies with applicable construction regulations, zoning laws, and local ordinances, the enforcing agency shall issue the building permit within the time specified in this act.
(8) At the time of installation, a premanufactured unit with a certificate of acceptability is subject only to the nondestructive tests approved by the department necessary to determine that it has not been damaged in transit or installation, and that it has been installed in accordance with the building permit and construction regulations.

(9) The fees established for a building permit when the application specifies use of a premanufactured unit with a certificate of acceptability, or for inspection of the installation of the premanufactured unit shall bear a reasonable relation to the costs incurred by the enforcing agency in issuing a permit or performing an inspection.

(10) Notwithstanding any other provision of this section, an enforcing agency may object to use of a premanufactured unit with a certificate of acceptability on the basis that the premanufactured unit does not comply with the code. If an enforcing agency on receipt of an application for a building permit specifying the use of a premanufactured unit does object, it may set forth its objections in writing to the department before issuance of a building permit and within 10 business days after receipt of the application. Within 10 business days after receipt of the objections, the commission, or a panel of 3 or more members designated for that purpose by its chairman, shall hold a hearing on the objections in accordance with rules promulgated by the department. After the hearing, the commission, or its panel, within 3 business days shall determine 1 of the following:

(a) The premanufactured unit does not comply with the code and order that the certificate of acceptability be voided.

(b) The premanufactured unit requires additional testing and evaluation in which case the testing and evaluation shall be conducted in accordance with this section.

(c) The objections are not valid and order the enforcing agency to issue the building permit within 3 business days.

(11) A certificate of acceptability issued by the department shall not be used for advertising purposes.


Popular Name: Act 230

Popular Name: Uniform Construction Code

Admin Rule: R 408.30101 et seq. of the Michigan Administrative Code

125.1520 Examination of plans and specifications; assistance in inspection of construction or performance of duties.

Sec. 20.

At the request of an enforcing agency or the governmental subdivision, the commission may agree to examine any plans and specifications submitted to the enforcing agency or the governmental subdivision, in connection with an application for a building permit to determine whether they comply with the code. At the request
of an enforcing agency or the governmental subdivision, the commission may agree
to assist the agency or the governmental subdivision, in the inspection of any
construction of buildings or structures, or in the performance of any other duty
related to the administration and enforcement of the code.

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**Popular Name:** Act 230
**Popular Name:** Uniform Construction Code

125.1521 Petition for approval of materials, products and methods; testing
and evaluation; certificate of acceptability.

Sec. 21.

A person may petition the commission to approve the use of a particular material,
product, method of manufacture or method or manner of construction or installation.
The petition shall be in writing on a form to be prescribed by the commission
accompanied by such information and material as the commission may by rule
require and by an initial fee. On receipt of the petition, the commission shall cause to
be conducted testing and evaluation it deems desirable for the particular material,
product, method of manufacture or method or manner of construction or installation.
After the testing and evaluation, and after a hearing open to the public in which the
results of the testing and evaluation are made part of the record, and the petitioner
or any other interested party is allowed to present evidence in support of or against
the petition, the commission may reject the petition in whole or in part, may in
accordance with procedures established in this act amend the code in such manner
as the commission deems appropriate, or may grant a certificate of acceptability for
the particular material, product, method of manufacture, or method or manner of
construction or installation. A petition shall not be rejected if the application is in
proper form and the fees are paid, and if performance of the particular material,
product, method of manufacture, or method or manner of construction or installation
is adequate for its intended use and consistent with reasonable requirements for the
health, safety and welfare of the people of this state. The commission may attach
any condition it deems appropriate to a certificate of acceptability. A material,
product, method of manufacture, or method or manner of construction or installation
shall be acceptable for use throughout this state in accordance with the terms of a
certificate of acceptability issued with respect to it. A copy of each certificate of
acceptability shall be sent or delivered by the commission to each governmental
subdivision, however, failure of the commission to comply with this requirement does
not prevent or delay effectiveness of a certificate of acceptability. A certificate of
acceptability issued by the commission pursuant to this section shall not be used for
advertising purposes.

**History:** 1972, Act 230, Eff. Jan. 1, 1973
**Popular Name:** Act 230
**Popular Name:** Uniform Construction Code

125.1521a Installation or use of heating cable; application for approval;
"heating cable" defined; construction of section.
Sec. 21a.

(1) Beginning 1 year after the effective date of the amendatory act that added this section, heating cable shall not be installed or used in a building or structure in this state until approved by the commission pursuant to section 21. As provided in section 8, this section is effective throughout the state without local modification.

(2) An application for approval of heating cable submitted to the commission, which includes listing by a nationally recognized testing laboratory found to comply with established standards, shall be approved unless the commission finds it would endanger the public safety.

(3) For purposes of this section, “heating cable” means heating cable as defined in section 2 of the heating cable safety act, that is, cable designed to be secured to pipes and vessels to reduce their likelihood of freezing or to facilitate the flow of viscous liquids. Heating cable also includes products used for deicing on roofs and in gutters and downspouts. Heating cable intended for industrial and commercial use is connected to the supply system by a permanent wiring method or by an attachment plug for connection to a receptacle outlet. Heating cable intended for residential and mobile home use has an attachment plug for connection to a receptacle outlet. Heating cable is commonly known as heat tape.

(4) This section shall not be construed to limit the powers and duties granted pursuant to any other law to a state agency or official.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1522 Fees; state construction code fund; fund for purchase and sale of codes and standards.

Sec. 22.

(1) The legislative body of a governmental subdivision shall establish reasonable fees to be charged by the governmental subdivision for acts and services performed by the enforcing agency or construction board of appeals under this act, which fees shall be intended to bear a reasonable relation to the cost, including overhead, to the governmental subdivision of the acts and services, including, without limitation, those services and acts as, in case of an enforcing agency, issuance of building permits, examination of plans and specifications, inspection of construction undertaken pursuant to a building permit, and the issuance of certificates of use and occupancy, and, in case of a board of appeals, hearing appeals in accordance with this act. The enforcing agency shall collect the fees established under this subsection. The legislative body of a governmental subdivision shall only use fees generated under this section for the operation of the enforcing agency or the construction board of appeals, or both, and shall not use the fees for any other purpose.
To accomplish the objectives of this section and this act, a state construction code fund is created. The director, after approval by the commission and following a public hearing held by the commission, shall establish reasonable fees to be charged by the commission for acts and services performed by the commission including, without limitation, inspection of plans and specifications, issuance of certificates of acceptability, testing and evaluation of new products, methods and processes of construction or alteration, issuance of building permits, inspection of construction undertaken pursuant to a building permit, the issuance of certificates of use and occupancy, and hearing of appeals. Fees established by the department shall be intended to bear a reasonable relation to the cost, including overhead, of the service or act. Until the director establishes fees pursuant to this act, the fees established pursuant to this subsection shall remain in effect. The state treasurer shall be the custodian of the fund and may invest the surplus of the fund in investments as in the state treasurer's judgment are in the best interest of the fund. Earnings from those investments shall be credited to the fund. The state treasurer shall notify the director and the legislature of interest credited and the balance of the fund as of September 30 of each year. The director shall supervise and administer the fund. Fees received by the department and money collected under this act shall be deposited in the state construction code fund and shall be appropriated by the legislature for the operation of the bureau of construction codes, and indirect overhead expenses in the department. Funds that are unexpended at the end of each fiscal year shall be returned to the state construction code fund. A self-supporting fund shall be established within the commission to provide for the purchase and sale of codes and standards to the general public.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1523 Unlawful conduct; penalty; separate offenses; retention of fine by governmental subdivision; designation of violation as municipal civil infraction.

Sec. 23.

(1) Except as provided in subsection (3), a person or corporation, including an officer, director, or employee of a corporation, or a governmental official or agent charged with the responsibility of issuing permits or inspecting buildings or structures, who does any of the following is guilty of a misdemeanor punishable by a fine of not more than $500.00 or imprisonment for not more than 90 days, or both:

(a) Knowingly violates this act or the code or a rule for the enforcement of this act or code.

(b) Knowingly constructs or builds a structure or building in violation of a condition of a building permit.

(c) Knowingly fails to comply with an order issued by an enforcing agency, a construction board of appeals, a board, or the commission pursuant to this act.
(d) Knowingly makes a false or misleading written statement, or knowingly omits required information or a statement in an inspection report, application, petition, request for approval, or appeal to an enforcing agency, a construction board of appeals, a board, or the commission.

(e) Knowingly refuses entry or access to an inspector lawfully authorized to inspect any premises, building, or structure pursuant to this act.

(f) Unreasonably interferes with an authorized inspection.

(g) Knowingly issues, fails to issue, causes to be issued, or assists in the issuance of a certificate, permit, or license in violation of this act or a rule promulgated under this act or other applicable laws.

(h) Having a duty to report violations of this act or a rule promulgated under this act or other applicable laws, knowingly conceals a violation.

(2) With respect to subsection (1)(c), a person is guilty of a separate offense for each day that the person fails to comply with a stop construction order validly issued by an enforcing agency and for each week that the person fails to comply with any other order validly issued by an enforcing agency. With respect to subsection (1)(a) or (d), a person is guilty of a separate offense for each knowing violation of this act or a rule promulgated under this act and for each false or misleading written statement or omission of required information or statement knowingly made in an application, petition, request for approval, or appeal to an enforcing agency, a construction board of appeals, a board, or the commission. With respect to subsection (1)(b), a person is guilty of a separate offense for each knowing violation of a condition of a building permit.

(3) If a governmental subdivision has the responsibility of administering and enforcing this act and prosecutes a violation of this act, the governmental subdivision may retain a fine imposed upon conviction. If a governmental subdivision has the responsibility of administering and enforcing this act, the governmental subdivision may by ordinance designate a violation described in subsection (1) or (2) as a municipal civil infraction and provide a civil fine for the violation. The governmental subdivision may retain the civil fine imposed upon judgment.

Popular Name: Act 230
Popular Name: Uniform Construction Code
Admin Rule: R 408.30101 et seq. of the Michigan Administrative Code

125.1523a Civil violation; penalty; enforcement.

Sec. 23a.

(1) In addition to any other penalties or remedies provided by law, a person who is required to be licensed as a residential builder or residential maintenance and
alteration contractor, or as a master or journeyman plumber, an electrical contractor
or master or journeyman electrician, or a mechanical contractor shall not perform
work on a residential building or a residential structure without first obtaining a
license. A person who violates this section is responsible for a civil violation, and
shall be fined not less than $100.00 or more than $500.00.

(2) The prosecuting attorney of the county in which the residential building or
residential structure is located or the attorney general may enforce this section.

Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1524 Effect of existing construction regulations and permits.

Sec. 24.

Until 6 months after promulgation of the code, construction regulations heretofore or
hereafter adopted by a governmental subdivision continue in effect unless repealed
by local law or ordinance. Six months after the promulgation of the code and
thereafter, construction regulations adopted by a governmental subdivision shall be
considered repealed and invalid, except as provided in section 8. A building permit
validly issued under local construction regulations within 6 months before
promulgation of the code is valid, and the construction of a building or structure may
be completed pursuant to that building permit. The construction of a building or
structure started before promulgation of the code in an area of the state that did not
as of the date of beginning of construction require a building permit may be
completed without a building permit. Except as provided in section 28, construction
regulations incorporated in any act of this state in effect or validly promulgated by
any board, department, commission, or agency continue in effect until promulgation
of the code at which time they shall be considered to be superseded.

1980
Popular Name: Act 230
Popular Name: Uniform Construction Code

125.1525 Effect of act on functions of state plumbing and electrical
administrative boards.

Sec. 25.

This act does not affect the functions of the state plumbing board with respect to the
licensing of master or journeyman plumbers and the registration of plumbers'
apprentices, and of the electrical administrative board with respect to the issuance of
class 1, electrical contractor's licenses, class 2, master electricians' licenses and class
3, journeyman's licenses.
125.1526 Transfer of state plumbing and electrical administrative boards to commission.

Sec. 26.

Subject to other provisions of this act concerned with the relationship between the commission and the boards, the state plumbing and electrical administrative boards are transferred to the commission without alteration of their functions.

125.1528 Inconsistent or conflicting provisions; construction of act.

Sec. 28.

(1) Any provision of section 34 of Act No. 18 of the Public Acts of the Extra Session of 1933, being section 125.684 of the Michigan Compiled Laws; Act No. 266 of the Public Acts of 1929, being sections 338.901 to 338.917 of the Michigan Compiled Laws; Act No. 222 of the Public Acts of 1901, being sections 338.951 to 338.965 of the Michigan Compiled Laws; the electrical administrative act, Act No. 217 of the Public Acts of 1956, being sections 338.881 to 338.892 of the Michigan Compiled Laws; and any other public act of this state which is inconsistent or in conflict with this act is superseded to the extent of the inconsistency or conflict.

(2) This act shall not be construed to repeal, amend, supersede, or otherwise affect the powers and duties presently exercised under part 55 (air pollution) of the natural resources and environmental protection act, Act No. 451 of the Public Acts of 1994, being sections 324.5501 to 333.12434 of the Michigan Compiled Laws; the Michigan occupational safety and health act, Act No. 154 of the Public Acts of 1974, being sections 408.1001 to 408.1094 of the Michigan Compiled Laws; the boiler act of 1965, Act No. 290 of the Public Acts of 1965, being sections 408.751 to 408.776 of the Michigan Compiled Laws; or Act No. 227 of the Public Acts of 1967, being sections 408.801 to 408.824 of the Michigan Compiled Laws. This act shall not be construed to repeal, amend, or otherwise affect Act No. 306 of the Public Acts of 1937, being sections 388.851 to 388.855a of the Michigan Compiled Laws.
125.1529 Enforcement of code or construction regulations by governmental subdivision or enforcing agency.

Sec. 29.

Except as otherwise provided in this act, this act does not abrogate or impair the power of a governmental subdivision or enforcing agency to enforce the provisions of the code or any other applicable construction regulations, or to prevent violations or impose sanctions on violators.

Popular Name: Act 230  
Popular Name: Uniform Construction Code

125.1530 Saving clause; pending or subsequent prosecutions.

Sec. 30.

Proceedings pending and rights and liabilities existing, acquired or incurred under existing construction regulations as long as they remain in effect are saved. The proceedings may be consummated according to the law in force when the proceedings were commenced. Neither this act nor the code shall be construed to alter, affect or abate a pending prosecution, or prevent prosecution hereafter instituted under such repealed construction regulations for offenses committed as long as the construction regulations remain in effect. Prosecutions instituted after the repeal of existing construction regulations for offenses committed before the effective date of the repeal may be continued or instituted in accordance with construction regulations in effect at the time of the commission of the offenses.

Popular Name: Act 230  
Popular Name: Uniform Construction Code

125.1531 Effective date.

Sec. 31.

This act shall take effect January 1, 1973.

Popular Name: Act 230  
Popular Name: Uniform Construction Code
Selected State Building Code Acts

New York State:

At: http://public.leginfo.state.ny.us/menugetf.cgi

**EXC - Executive**

**Article 18 - NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE ACT**

370 - Short title.
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383 - Construction with other laws; severability.
§ 370. Short title. This article shall be known and may be cited as the "New York state uniform fire prevention and building code act".

§ 371. Statement of legislative findings and purposes. 1. The legislature hereby finds and declares that:
   a. The present level of loss of life, injury to persons, and damage to property as a result of fire demonstrates that the people of the state have yet to receive the basic level of protection to which they are entitled in connection with the construction and maintenance of buildings;
   b. There does not exist for all areas of the state a single, adequate, enforceable code establishing minimum standards for fire protection and construction, maintenance and use of materials in buildings. Instead, there exists a multiplicity of codes and requirements for various types of buildings administered at various levels of state and local government. There are, in addition, extensive areas of the state in which no code at all is in effect for the general benefit of the people of the state;
   c. The present system of enforcement of fire protection and building construction codes is characterized by a lack of adequately trained personnel, as well as inconsistent qualifications for personnel who administer and enforce those codes;
   d. Whether because of the absence of applicable codes, inadequate code provisions or inadequate enforcement of codes, the threat to the public health and safety posed by fire remains a real and present danger for the people of the state; and
   e. The multiplicity of fire protection and building construction code requirements poses an additional problem for the people of the state since it increases the cost of doing business in the state by perpetuating multiple requirements, jurisdictional overlaps and business uncertainties, and, in some instances, by artificially inducing high construction costs.
   2. The legislature declares that it shall be the public policy of the state of New York to:
      a. Immediately provide for a minimum level of protection from the hazards of fire in every part of the state;
      b. Provide for the promulgation of a uniform code addressing building construction and fire prevention in order to provide a basic minimum level of protection to all people of the state from hazards of fire and inadequate building construction. In providing for such a uniform code, it is declared to be the policy of the state of New York to:
         (1) reconcile the myriad existing and potentially conflicting regulations which apply to different types of buildings and occupancies;
         (2) recognize that fire prevention and fire prevention codes are closely related to the adequacy of building construction codes, that the
greatest portion of a building code's requirements are fire safety oriented, and that fire prevention and building construction concerns should be the subject of a single code;

(3) place public and private buildings on an equal plane with respect to fire prevention and adequacy of building construction;

(4) require new and existing buildings alike to keep pace with advances in technology concerning fire prevention and building construction, including, where appropriate, that provisions apply on a retroactive basis; and

(5) provide protection to both residential and non-residential buildings;

c. Insure that the uniform code be in full force and effect in every area of the state;

d. Encourage local governments to exercise their full powers toadminister and enforce the uniform code; and

e. Provide for a uniform, statewide approach to the training and qualification of personnel engaged in the administration and enforcement of the uniform code.

§ 372. Definitions. As used in this article, the following terms shall have the meaning ascribed to them, unless the context otherwise requires:

1. "Administrator" means the state fire administrator established pursuant to article six-C of this chapter.

2. "Areas of public assembly" means all buildings or portions of buildings used for gathering together fifty or more persons for amusement, athletic, civic, dining, educational, entertainment, patriotic, political, recreational, religious, social, or similar purposes, the entire fire area of which they are a part, and the means of egress therefrom.

3. "Building" means a combination of any materials, whether portable or fixed, having a roof, to form a structure affording shelter for persons, animals or property. The word "building" shall be construed when used herein as though followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. The term "building" shall also mean "factory manufactured home" and "mobile home". The term "building" shall not include a "temporary greenhouse".

4. "Construction" means the construction, reconstruction, alteration, conversion, repair, installation of equipment or use of buildings, and requirements or standards relating to or affecting materials used in connection therewith, including provisions for safety and sanitary conditions.

5. "Council" means the state fire prevention and building code council created by this article.
6. "Department" means the department of state.
7. "Equipment" means plumbing, heating, electrical, ventilating, air conditioning, refrigerating equipment, elevators, dumb waiters, escalators and other mechanical additions or installations.
8. "Factory manufactured home" means a structure designed primarily for residential occupancy constructed by a method or system of construction whereby the structure or its components are wholly or in substantial part manufactured in manufacturing facilities, intended or designed for permanent installation, or assembly and permanent installation, on a building site.
9. "Fire area" means the floor area of a story of a building within exterior walls, party walls, fire walls, or any combination thereof.
10. "Fire protection equipment and systems" means apparatus, assemblies, or systems, either portable or fixed, for use to detect, prevent, control, or extinguish fire.
11. "Local government" means a village, town (outside the area of any incorporated village) or city.
12. "Means of egress" means a continuous unobstructed way of exit from any point in a building or structure to a public way. A means of egress comprises the vertical and horizontal ways of travel and includes intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards.
13. "Mobile home" means a moveable or portable unit designed and constructed to be towed on its own chassis, comprised of frame and wheels, connected to utilities, and designed and constructed without a permanent foundation for year-round living. A unit may contain parts that may be folded, collapsed or telescoped when being towed and expanded later to provide additional cubic capacity as well as two or more separately towable components designed to be joined into one integral unit capable of being again separated into the components for repeated towing. "Mobile home" shall mean units designed to be used exclusively for residential purposes, excluding travel trailers.
14. "Office" means the office of fire prevention and control created pursuant to article six-C of this chapter.
15. "Secretary" means the secretary of state.
16. "State agency" means any department, bureau, commission, board, public authority or other agency of the state, including any public benefit corporation any member of whose board is appointed by the governor.
17. "Temporary greenhouse" means specialized agricultural equipment having a framework covered with demountable polyurethane materials or materials of polyurethane nature and lacking a permanent and continuous foundation, which is specifically designed, constructed and used for the culture and propagation of horticultural commodities. A "temporary
greenhouse" may include, but is not limited to, the use of heating devices, water and electrical utilities, and supporting poles embedded in non-continuous concrete. In no instance will a temporary greenhouse be used for the retail sale of any farm or non-farm products.

18. "Uniform code" or "code" means the New York state uniform fire prevention and building code promulgated pursuant to section three hundred seventy-seven of this article.

19. "Truss type construction" means a fabricated structure of wood or steel, made up of a series of members connected at their ends to form a series of triangles to span a distance greater than would be possible with any of the individual members on their own.

§ 373. Required immediate applicability of existing state codes. 1. The state building construction code provided for in article eighteen of this chapter, as added by chapter eight hundred of the laws of nineteen hundred fifty-one and the state building conservation and fire prevention code provided for in article eighteen-A of this chapter shall be applicable from and after the first day of March, nineteen hundred eighty-two in every local government that does not on such date have in effect a building or fire protection code. Said state building construction code and state building conservation and fire prevention code shall also be applicable in every local government that on the first day of March, nineteen hundred eighty-two has a building or fire prevention code in effect but which prior to the first day of January, nineteen hundred eighty-four, repeals such code, provided, however, that in the case of any such repeal, the state building construction code and the state building conservation and fire prevention code shall apply within such local government from and after the date of such repeal.

2. The secretary shall, within thirty days after the effective date of this article, notify the elective or appointive chief executive officer or, if there be none, the chairman of the legislative body of each local government and county of the provisions of this section.

3. The secretary shall, within ninety days after the effective date of this article, promulgate regulations establishing minimum standards for administration and enforcement of the state building construction code and the state building conservation and fire prevention code by local governments to which this section applies.

4. Within sixty days after the effective date of the regulations required by subdivision three of this section the elective or appointive chief executive officer of each local government to which this section applies shall report in writing to the executive or appointive chief executive officer or, if there be none, the chairman of the county legislative body of the county in which the local government is situated, the measures it has taken or contemplates taking for administration and enforcement of the state building construction code.
and the state building conservation and fire prevention code.

5. Within one hundred twenty days after the effective date of the regulations required by subdivision three of this section the elective or appointive chief executive officer or, if there be none, the chairman of the county legislative body shall forward to the secretary the reports of the local governments required by subdivision four of this section together with a report of the measures such county or local government has taken or contemplates taking for administration and enforcement of the state building construction code and the state building conservation and fire prevention code.

6. On and after the first day of March, nineteen hundred eighty-two, the provisions of subdivisions three, four and five of section three hundred eighty-one of this article shall immediately apply to the administration and enforcement of the state building construction code and the state building conservation and fire prevention code by every local government in which such codes have been made applicable pursuant to this section.

§ 373-a. Code comparison study and report. 1. Examination and study of the New York state uniform fire prevention and building code. a. The secretary, through the department of state's code division, shall perform, oversee, and/or commission a study comparing the New York state uniform fire prevention and building code to the national building and fire codes presently in force and promulgated by Building Officials and Code Administrators International, Inc (BOCA).

b. The secretary, through the department of state's code division, shall further perform, oversee and/or commission a study comparing the present New York state energy, plumbing, and mechanical codes to the energy, plumbing and mechanical code presently in force and promulgated by Building Officials and Code Administrators International, Inc (BOCA). The secretary, through the department of state's code division shall also perform, oversee and/or commission a study comparing the present New York state plumbing code to the international plumbing code and the uniform plumbing code.

c. The secretary, through the department of state's code division, shall also perform, oversee and/or commission a study comparing the present provisions of the state, uniform fire prevention and building code relating to fire safety to the provisions of the fire prevention code presently in force and promulgated by the National Fire Protection Association (NFPA1).

2. Report on the examination and study of the New York state uniform fire prevention and building code. On or before the fifteenth day of November, nineteen hundred ninety-eight, the secretary, through the department of state's code division, shall issue a report on the examinations and studies prescribed by subdivision one of this section,
and shall provide a copy of such report to the governor, the temporary president of the senate, the speaker of the assembly, the chair of the senate standing committee on housing, construction and community development, the chair of the assembly standing committee on governmental operations and the chair of the assembly standing committee on housing. Such report shall:

a. Make an express line by line comparison between the provisions of:
   (i) the present New York state uniform fire prevention and building code and national building and fire codes presently in force and promulgated by Building Officials and Code Administrators International, Inc (BOCA);
   (ii) the present New York state energy, plumbing, mechanical codes and the energy, plumbing and mechanical code presently in force and promulgated by Building Officials and Code Administrators International, Inc (BOCA);
   (iii) the present New York state plumbing code and the international plumbing code;
   (iv) the present New York state plumbing code and the uniform plumbing code;
   (v) the present provisions of the New York state uniform fire prevention and building code relating to fire safety and the provisions of the fire prevention code presently in force and promulgated by the National Fire Protection Association (NFPA1); and

b. Report on the similarities of, and differences between each such aforementioned code with respect to:
   (i) public safety;
   (ii) ease of use and clarity of understanding;
   (iii) effectiveness of enforcement;
   (iv) ease and effectiveness of administration;
   (v) user cost savings;
   (vi) compatibility with other state and international codes; and

   (vii) potential for promoting economic development.

§ 374. State fire prevention and building code council. 1. There is hereby created and established in the department of state a council, to be known as the state fire prevention and building code council. Such council shall consist of the secretary of state, as chairman, the state fire administrator and fifteen other members to be appointed as follows:

a. Two members, to be appointed by the governor, from among the commissioners of the departments of economic development, correctional services, education, health, labor, mental health and social services, office of general services, division of housing and community renewal, and the superintendent of insurance.

b. Six members, to be appointed by the governor, one of whom shall be
an elected official of a city with a population over one million, one of whom shall be an elected official of another city with a population over one hundred thousand, one of whom shall be an elected official of any other city, one of whom shall be an elected county official, one of whom shall be an elected town official, and one of whom shall be an elected village official.

c. Seven members, to be appointed by the governor with the advice and consent of the senate, one of whom shall be a fire service official, one of whom shall be a registered architect, one of whom shall be a professional engineer, one of whom shall be a code enforcement official, one of whom shall represent builders, one of whom shall represent trade unions, and one of whom shall be a person with a disability as defined in section two hundred ninety-two of this chapter who would directly benefit from the provisions of article thirteen of the state uniform fire prevention and building code. The registered architect and professional engineer shall be duly licensed to practice their respective professions in the state of New York. After the certification of code enforcement personnel pursuant to this chapter shall have begun said code enforcement official shall be so certified.

2. The members of the council, other than the ex-officio members, shall serve for terms of four years provided, however, that any member appointed pursuant to paragraph b of subdivision one of this section shall cease to be a member of the council when such member no longer holds the elective office which made such member eligible to appointment under such paragraph. Such terms shall commence on April first and expire on March thirty-first provided, however, that of the members first appointed pursuant to paragraph b of subdivision one of this section, three shall be appointed for terms of four years and three for a term of two years, of the members first appointed pursuant to paragraph c of subdivision one of this section, three shall be appointed for terms of four years and three for a term of two years, and the member first appointed pursuant to paragraph d of subdivision one of this section shall be appointed for a term of four years. Vacancies shall be filled for unexpired terms in the same manner as the original appointments.

3. The council shall meet at least quarterly at the call of the chairman. Additional meetings may be called upon at least five days notice by the chairman or by petition of five members of the council.

4. No member of the council shall be disqualified from holding any other public office, nor shall employment be forfeited by reason of the member's appointment hereunder, notwithstanding the provisions of any general, special or local law, ordinance, county or city charter.

5. Each member of the council, other than a full-time government official, shall receive per diem compensation at the rate of one hundred fifty dollars per day for each day spent in the performance of his duties. All members of the council shall receive actual and necessary
expenses incurred in the performance of their duties.

6. The governor may remove any member for inefficiency, neglect of duty or misconduct in office after giving him a copy of the charges against him and an opportunity to be heard, in person or by counsel in his defense, upon not less than ten days notice. If any member shall be so removed, the governor shall file in the office of the secretary of state a complete statement of charges made against such member, and his finding thereon, together with a complete record of the proceedings.

7. The ex-officio members of the council and the elected county and local government official members appointed pursuant to paragraph b of subdivision one of this section may, by official authority filed in their respective agencies, county or local governments and with the secretary, designate a deputy or other officer of their respective agency, county or local government to exercise their powers and perform their duties on the council.

8. The council may create such subcommittees as it may from time to time deem appropriate to provide it with advice and recommendations concerning the performance of its duties under this article.

9. a. The chairman of the council shall appoint an advisory board on assistive listening systems in places of public assembly for the purposes of providing the full council with recommendations for standards for such systems. Such advisory board shall consist of the state fire administrator, who shall serve as chairman, and six other members to be appointed as follows:

(i) three members from among the members of the state fire prevention and building code council,

(ii) three members one of whom shall represent an organization which serves as an advocate for the hearing impaired, one of whom shall represent consumers of products designed for the hearing impaired, and one of whom represents an institution of higher education with expertise in the area of assistive listening technology, who shall be entitled to be reimbursed for necessary travel and incidental expenses out of monies appropriated to the division of housing and community renewal.

b. Such advisory board shall, prior to December thirty-first, nineteen hundred eighty-nine, submit to the state fire prevention and building code council:

(i) findings on the extent of existing federal, state and local requirements for assistive listening systems,

(ii) findings on the type, design and use of existing assistive listening systems,

(iii) recommendations for design and installation standards for assistive listening systems intended for places of public assembly, and

(iv) recommendations for capacity standards for places of public assembly which shall be required to install assistive listening systems.

c. In developing such recommendations the advisory board shall take
into consideration the costs of such systems, the standardization and compatibility of such systems, if the technology permits, and the utilization of such systems by the hearing impaired consumer. Particular attention should be given to the ability of consumers to utilize a single receiver which is compatible in a variety of installations employing the same assistive listening device technology.

d. In addition, the advisory board shall ensure, to the extent possible, that the standards developed for the design and installation of assistive listening systems take into consideration the opportunity for competition among manufacturers of the same or various approved systems.

§ 375. Powers of the council. The council is authorized and empowered:
1. To subpoena witnesses, take testimony, compel production of books and records and to hold public hearings. The secretary may designate one or more members of the council, or one or more officers or employees of the department, or the administrator, on request of the secretary, may designate one or more employees of the office, to hold public hearings and report on such hearings to the council.

2. To study the operation of the uniform fire prevention and building code, the state energy conservation construction code established by article eleven of the energy law, local regulations and other laws relating to the construction of buildings and the protection of buildings from fire to ascertain their effects upon the cost of building construction and the effectiveness of their provisions for health, safety and security, particularly as such provisions relate to the protection of life and property from the dangers of fire.

3. To recommend tests and approvals or to require the testing and approval of materials, devices and methods of construction to ascertain their acceptability under the requirements of the uniform fire prevention and building code.

4. To advise and assist the secretary in carrying out the provisions and purposes of this article and to make recommendations concerning the program and activities of the office and appointments to be made by the secretary in connection with the uniform fire prevention and building code.

5. To make and establish and, from time to time, alter and amend rules for the organization and internal management of the council, and for such other purposes as may be necessary, desirable or proper in carrying out its powers and duties under this article.

6. To avoid duplication of effort and in the interest of economy, the council may make use of existing studies, surveys, plans, data and other materials in the possession of any state agency. Each such agency is hereby authorized and directed to make the same available to the council and otherwise to assist it in the performance of its functions. The
officers and personnel of such agencies may serve at the request of the council upon such advisory committees as the council shall determine to create and such officers and personnel may serve upon such committees without forfeiture of office or employment and with no loss or diminution in the compensation, status, rights and privileges which they otherwise enjoy.

7. To review and approve standards established by rules and regulations promulgated by the commissioner of health for the implementation of item (ii) of clause (a) of section three hundred twenty-two-c of the general business law.

§ 376. Powers of the secretary. The secretary is authorized and empowered: 1. To assign to the council such officers and employees of the department as he may deem necessary from time to time to assist the council in carrying out its functions and duties under this article.

2. To appoint experts, consultants, technical advisers and advisory committees for assistance and recommendations relative to the formulation and adoption of the uniform fire prevention and building code and to assist the council and the secretary in carrying out the purposes of this article.

3. To authorize or provide for the testing and approval of materials, devices and methods of construction.

4. To issue and to publish or cause to be published written interpretations of the uniform code upon written request of a permit applicant or an official responsible for the administration and enforcement of the provisions of such code. Subsequent enforcement of such code shall be consistent with such written interpretations.

5. To do all things necessary or desirable to further and effectuate the general purposes and specific objectives of this article.

§ 377. New York state uniform fire prevention and building code. 1. The council shall formulate a uniform fire prevention and building code which shall take effect on the first day of January, nineteen hundred eighty-four. The council may from time to time amend particular provisions of the uniform code and shall periodically review the entire code to assure that it effectuates the purposes of this article and the specific objectives and standards hereinafter set forth. The secretary shall conduct public hearings on said uniform code and any amendment thereto. The secretary shall review such code or amendment, together with any changes incorporated by the council as a result of such hearings, to insure that it effectuates the purposes of this article. Upon being so satisfied, the secretary shall approve said code or amendment prior to its becoming effective.

2. The uniform fire prevention and building code shall:
a. provide reasonably uniform standards and requirements for construction and construction materials for public and private buildings, including factory manufactured homes, consonant with accepted standards of engineering and fire prevention practices;
b. formulate such standards and requirements, so far as may be practicable, in terms of performance objectives, so as to make adequate performance for the use intended the test of acceptability;
c. permit to the fullest extent feasible, use of modern technical methods, devices and improvements which tend to reduce the cost of construction without substantially affecting reasonable requirements for the health, safety and security of the occupants or users of buildings;
d. encourage, so far as may be practicable, the standardization of construction practices, methods, equipment, material and techniques; and
e. eliminate restrictive, obsolete, conflicting and unnecessary building regulations and requirements which tend to increase unnecessarily construction costs or retard unnecessarily the use of new materials, or provide unwarranted preferential treatment to types or classes of material or products or methods of construction.

§ 378. Standards for New York state uniform fire prevention and building code. The uniform code shall address the following subjects:
1. Standards for the construction of all buildings or classes of buildings, or the installation of equipment therein, including standards for materials to be used in connection therewith, and standards for safety and sanitary conditions.
2. Standards for the condition, occupancy, maintenance, conservation, rehabilitation and renewal of certain existing buildings, structures and premises and for the safeguarding of life and property therein and thereabout from the hazards of fire, explosion or release of toxic gases arising from the storage, handling or use of combustible or hazardous substances, materials or devices.
3. Standards for passenger elevators to promote uniformity and ease of use for the handicapped including, but not limited to:
   a. placement and identification of operating controls,
   b. door jamb markings,
   c. operation and leveling features,
   d. operation, width, and safety features for doors,
   e. hall buttons, and
   f. hall lanterns.
4. Standards for areas of public assembly requiring:
   a. approved fire protection equipment and systems shall be installed;
   b. interior finishes shall be of appropriate grade to materially retard the spread of smoke and flame, taking into consideration the fire protection equipment and systems in place, and shall be maintained in that condition;
c. no combustible material shall be placed in such amounts and locations as would cause existing fire protection equipment and systems to be substantially overburdened, nor shall any material be placed in such manner as would cause safe exit to be significantly impeded; and
d. incorporation of the retroactivity provisions of article eighteen-AA of this chapter.

e. for buildings included in group C5 of paragraph (f) of section 900.2 of title nine of the official compilation of codes, rules and regulations of the state of New York, that water closets and urinals provided for occupants, based upon capacity, shall be deemed sanitary fixtures and shall be distributed on a basis such that the number of such sanitary fixtures provided in rest facilities for men shall be equal to the number of water closets provided in rest facilities provided for women in buildings with an occupancy of four hundred or less. For buildings consisting of more than four hundred occupants, an additional water closet shall be added to a rest facility provided for women for each sanitary fixture added to a similarly situated rest facility provided for men.

The standards shall include provisions for the type, number, spacing and location of fire protection equipment and systems, the classification and maintenance of interior finishes, and the accumulation of materials.

5. Standards for hotels, motels and lodging houses, requiring that a notice be posted in a prominent place in each guest room, including but not limited to the following information:
   a. location of nearest exits and fire alarms;
   b. procedures to be followed when the fire or smoke detector gives warning; and
   c. procedures to be followed in the event of fire or smoke development.

5-a. Standards for installation of carbon monoxide detectors requiring that every one or two-family dwelling constructed or offered for sale after July thirtieth, two thousand two, any dwelling accommodation located in a building owned as a condominium or cooperative in the state constructed or offered for sale after July thirtieth, two thousand two, or any multiple dwellings constructed or offered for sale after August ninth, two thousand five shall have installed an operable carbon monoxide detector of such manufacture, design and installation standards as are established by the council. Carbon monoxide detectors required by this section are required only where the dwelling unit has appliances, devices or systems that may emit carbon monoxide or has an attached garage. For purposes of this subdivision, multiple dwelling means a dwelling which is either rented, leased, let or hired out, to be occupied, or is occupied as the temporary or permanent residence or home of three or more families living independently of each other, including
but not limited to the following: a tenement, flat house, maisonette apartment, apartment house, apartment hotel, tourist house, bachelor apartment, studio apartment, duplex apartment, kitchenette apartment, hotel, lodging house, rooming house, boarding house, boarding and nursery school, furnished room house, club, sorority house, fraternity house, college and school dormitory, convalescent, old age or nursing homes or residences. It shall also include a dwelling, two or more stories in height, and with five or more boarders, roomers or lodgers residing with any one family. For the purposes of this section, sale shall mean the transfer of ownership of a business or property, provided however, transfer of franchises shall not be deemed a sale. New construction shall mean a new facility or a separate building added to an existing facility.

5-b. Standards for installation of single station smoke detecting alarm devices requiring that:

a. every one or two-family dwelling or any dwelling accommodation located in a building owned as a condominium or cooperative in the state used as a residence shall have installed an operable single station smoke detecting alarm device or devices,

b. such device or devices shall be installed in an area so that it is clearly audible in each bedroom or other room used for sleeping purposes, with intervening doors closed, in accordance with rules to be promulgated by the council,

c. such device or devices shall be in compliance with the uniform code, provided, however, that for purposes of this subdivision, battery operated devices shall be permitted,

d. upon conveyance of any real property containing a one or two-family dwelling or a condominium unit used as a residence and the transferor of the shares allocated to an apartment located in a building owned by a cooperative housing corporation where such apartment is used as a residence, the grantor shall deliver to the grantee at the time of conveyance an affidavit indicating that the grantor is in compliance with this subdivision. The grantee shall have ten days from the date of conveyance within which to notify the grantor if the alarm or alarms are not operable. Upon notification, the transferor shall bear any cost of compliance with the provisions of this subdivision,

e. notwithstanding any other provision of law, a failure to comply with the provisions of this subdivision shall not be a breach of any warranty in a conveyance of real property, nor shall it be a defense to any claim made under a policy of insurance issued to insure the property against fire or other casualty loss.

5-c. Standards for inspections of solid fuel burning heating appliances, chimneys and flues requiring:

a. prior to the installation of any solid fuel burning heating appliance, chimney or flue in any dwelling used as a residence, the
owner thereof, or his agent, shall first secure a building permit from the appropriate local government official;

b. an appropriate and qualified inspector, as determined by the local government, shall cause an inspection to be made of the solid fuel burning heating appliance, chimney or flue at a time when such inspection will best determine conformity of such installation with the uniform code, provided, however, that the local government official may waive such inspection for good cause shown;

c. upon approval of such installation, the appropriate local government official shall issue a certificate evidencing compliance with the appropriate provisions of the uniform code;

d. no owner of any dwelling used as a residence shall operate, or cause to be operated, any solid fuel burning heating appliance until such installation, including chimney and flue, has been approved and a certificate indicating such approval obtained from the appropriate local government official;

e. in the event of an accidental fire, requiring the services of a fire department, in a solid fuel burning heating appliance, chimney or flue, the chief of the fire department so responding may issue a temporary thirty day certificate indicating substantial conformity with the uniform code, until such time as an official inspector, as determined by local law, or in the case of a locality that relies on state inspection, a state inspector, shall cause an inspection to be made and a certificate to be issued indicating conformity of such solid fuel burning heating appliance, chimney or flue with the uniform code;

f. the issuance of such certificate of compliance shall not be deemed to give rise to any claim or cause of action for damages against the local government or local official for damages resulting from operation or use of such solid fuel burning heating appliance, chimney or flue;

g. the local government in which such property is located may establish and collect a reasonable fee for such inspection from the owner of such property or his agent;

h. any violation of this subdivision shall be deemed a violation and be punishable by a fine not to exceed two hundred fifty dollars;

i. notwithstanding the foregoing provisions of this subdivision, in the event of an emergency, where a delay occasioned by the requirement of securing a building permit could reasonably be expected to cause irreparable damage to the property or serious personal injury to the occupants or other person, the owner or his agent may commence such installation without first obtaining such building permit provided application therefore is filed within three business days after such work is commenced.

6. Standards for the use of lead in water supply systems constructed or portions added on or after January first, nineteen hundred eighty-six, including limiting the amount of lead in solder which may be utilized in piping to convey potable water to not more than two-tenths
of one percent.

7. Standards for the construction of water supply systems which shall prohibit the use of asbestos cement pipe to convey potable water for any new or modified construction on or after January first, nineteen hundred ninety-two.

8. Standards for hotels, motels and lodging houses requiring (in addition to any other requirement) portable smoke-detecting alarm devices for the deaf and hearing impaired of audible and visual design, available for three percent of all units available for occupancy, with a minimum of one unit. If any other law or regulation requires a central, closed circuit interior alarm system, such device shall be incorporated into or connected to the system so as to be capable of being activated by the system. Incorporation into the existing system shall be in lieu of the portable alarms. Standards shall require operators of any such establishment to post conspicuously at the main desk or other similar station a notice in letters at least three inches in height stating that smoke-detector alarm devices for the deaf and hearing impaired are available. The council shall mandate by rule and regulation the specific design of the smoke-detector alarm devices.

9. Standards for buildings (designated as "Group B3-senior citizens" in regulations promulgated pursuant to the New York state uniform fire prevention and building code act) housing senior citizens, intended primarily for persons sixty-two years old or more, who are in good physical condition and do not require physical assistance, requiring that a notice be posted in a prominent place in each residential unit, including but not limited to the following information:
   a. location of nearest exits and fire alarms;
   b. procedures to be followed when the fire or smoke detector gives warning; and
   c. procedures to be followed in the event of fire or smoke development.

10. Standards for assistive listening systems for new construction commenced after January first, nineteen hundred ninety-one requiring the installation of assistive listening systems at all places of public assembly so designated by the appropriate building and fire code for use by hearing impaired persons who require use of such a system to improve their reception of sound.
   a. For purposes of this subdivision, the term (i) "assistive listening system" shall mean situational-personal acoustic communication equipment designed to improve the transmission and auditory reception of sound; and
   (ii) "place of public assembly" shall mean a facility which is open to the public as a theater, meeting hall, hearing room, amphitheater, auditorium, or in any other similar capacity.
   b. Standards for such systems shall be developed by the state fire
prevention and building code council upon receiving recommendations from the advisory board on assistive listening systems in places of public assembly.

c. The appropriate building code or ordinance shall designate such places of public assembly which shall be required to install such assistive listening systems.

11. Standards for buildings shall authorize the installation of potable water heaters for all domestic uses, including space heating.

*12. a. Standards for bed and breakfast dwellings shall be promulgated for fire safety. Notwithstanding any other provision of this article, for the purposes of this subdivision a "bed and breakfast dwelling" shall include an owner-occupied residence providing at least three but not more than five rooms for temporary transient lodgers with sleeping accommodations and a meal in the forenoon of the day. Such standards shall distinguish bed and breakfast dwellings from one and two family dwellings, provide specific options for hard-wired single-station smoke detectors and provide a notice to each guest that contains:

(i) the location of nearest exits and fire alarms;
(ii) procedures to be followed when fire or smoke detectors give warning; and
(iii) procedures to be followed in the event of fire or smoke development.

b. Such standards shall also include egress design options to preserve the aesthetic charm and historical significance of such dwellings that shall be limited to one of the following:

(i) an automatic sprinkler head in the stairwell area of any means of egress;
(ii) an external second floor egress; or
(iii) a portable escape device for each guest room.

c. The standards required by this subdivision shall be promulgated and implemented not later than one hundred twenty days after the effective date of this paragraph.

* NB There are 2 sub 12's

*12. Standards for hospice residences, as defined in section four thousand two of the public health law, which shall be deemed to be either a single family dwelling or a two family dwelling for the purposes of local laws and ordinances relating to fire safety and building construction standards.

* NB There are 2 sub 12's

13. Standards for the abandonment or removal of heating oil storage tanks and related piping in connection with the conversion of liquid fuel burning appliance to alternative fuel requiring:

a. The entire contents of the heating oil storage tank and related piping shall be emptied, cleaned and purged of all vapor. The contents of the storage tank and related piping shall be removed from the
premises or property and disposed of in accordance with applicable local, state or federal rules and regulations;

b. If the heating oil storage tank is to be abandoned in place, the vent line shall remain open and intact, unless the tank is filled with an inert material. The oil fill pipe and other related piping shall either be removed, or the oil fill pipe shall be filled with concrete;

c. If the heating oil storage tank is to be removed, the vent line, oil fill pipe and related piping shall also be removed, or the oil fill pipe shall be filled with concrete;

d. An appropriate and qualified inspector, as determined by the local government, shall cause an inspection to be made of the abandonment or removal in connection with the conversion to determine conformity with the uniform code; provide, however, that the local government official may waive such inspection for good cause shown; and

e. No approval of such abandonment or removal shall be granted unless written proof of the heating oil storage tank's oil fill pipe having been removed or filled with concrete in accordance with appropriate provisions of the uniform code has been provided by the property owner to the local inspector or, in the event that an inspection has been waived for good cause shown, to the local government official.

f. For the purposes of this subdivision, "heating oil storage tank" shall mean a tank used for storing heating oil for consumptive use on the premises where stored.

g. In cities with a population of over one million, such cities' local code provisions shall be at least as stringent as the provisions of this subdivision.

14. Provide that any gates required to be provided in a swimming pool enclosure shall be self-closing and self-latching with the latch handle located within the enclosure and at least forty inches above grade, and shall be securely locked with a key, combination or other child proof lock sufficient to prevent access to such swimming pool through such gate when such swimming pool is not in use or supervised.

15. a. Except as otherwise provided by statute, no change to the building code shall become effective until at least ninety days after the date on which notice of such change has been published in the state register, unless the council finds that:

(i) an earlier effective date is necessary to protect health, safety and security; or

(ii) the change to the code will not impose any additional compliance requirements on any person.

b. Notwithstanding the provisions of paragraph a of this subdivision, the council may provide that, in the period during which changes to the code have been adopted but are not yet effective pursuant to paragraph a of this subdivision, a person shall have the option of complying with either the provisions of the code as changed or with the code provisions
§ 379. Incorporation of higher standards by council upon recommendation of local government; local building regulations. 1. Except in the case of factory manufactured homes, intended for use as one or two family dwelling units or multiple dwellings of not more than two stories in height, the legislative body of any local government may duly enact or adopt local laws or ordinances imposing higher or more restrictive standards for construction within the jurisdiction of such local government than are applicable generally to such local government in the uniform code. Within thirty days of such enactment or adoption, the chief executive officer, or if there be none, the chairman of the legislative body of such local government, shall so notify the council, and shall petition the council for a determination of whether such local laws or ordinances are more stringent than the standards for construction applicable generally to such local government in the uniform code. During the period in which the council is considering such petition, such local laws or ordinances shall remain in full force and effect.

2. If the council finds that such higher or more restrictive standards are reasonably necessary because of special conditions prevailing within the local government and that such standards conform with accepted engineering and fire prevention practices and the purposes of this article, the council shall adopt such standards, in whole or part. The council shall have the power to limit the term or duration of such standards, impose conditions in connection with the adoption thereof, and to terminate such standards at such times, and in such manner as the council may deem necessary, desirable or proper.

3. Nothing in this article shall be construed to prohibit any municipality from adopting or enacting any building regulations relating to any matter as to which the uniform fire prevention and building code does not provide, but no municipality shall have the power to supersede, void, repeal or make more or less restrictive any provisions of this article or of rules or regulations made pursuant hereto.

4. Within one hundred twenty days after the effective date of the uniform code, a local government may by resolution duly enacted petition the council for a determination as to whether an existing building and/or fire code in force in said local government is more stringent than the uniform code. During the period in which the council is considering such petition such local code shall remain in full force and effect. If, after review, the council determines that such local code is less stringent than the uniform code the council shall notify the chief executive officer or, if there be none, the chairman of the legislative body of such local government and the uniform code shall, thirty days after the date of notification, apply in such local government. If the
council finds that such local code is not less stringent than the uniform code such local code shall continue in full force and effect until the council, upon its own initiative, reviews such local code and determines that it is no longer more stringent, whereupon the council shall notify the chief executive officer or chairman of the legislative body of such local government and thirty days after the date of notification the uniform code shall apply in such local government.

5. Notwithstanding the provisions of subdivision one of this section, the legislative body of Nassau county may have duly enacted or adopted or may duly enact or adopt local laws or ordinances imposing higher or more restrictive standards for construction within the jurisdiction of the county than are applicable generally to the county in the uniform code. The chief executive officer, or if there be none, the chairman of the legislative body of the county, shall notify the council, and shall petition the council for a determination of whether such preexisting local laws or ordinances, or within thirty days of such enactment or adoption of such local laws or ordinances, are more stringent than the standards for construction applicable generally to such county in the uniform code. During the period in which the council is considering such petition, such local laws or ordinances shall remain in full force and effect.

§ 380. Granting authority. The secretary, by and through the office of fire prevention and control, shall administer a program of local assistance to aid local governments in the administration and enforcement of locally adopted or state promulgated building and fire codes. Said program of local assistance shall conform to the requirements of section fifty-four-g of the state finance law. The secretary shall adopt, amend and rescind such rules, regulations and guidelines as may be necessary for the performance of his functions, powers and duties under this section.

§ 381. Administration and enforcement of the New York state uniform fire prevention and building code. 1. The secretary shall promulgate rules and regulations prescribing minimum standards for administration and enforcement of the uniform fire prevention and building code promulgated in accordance with sections three hundred seventy-seven and three hundred seventy-eight of this article. Such rules and regulations shall become effective not later than the first day of January, nineteen hundred eighty-five. The secretary shall promulgate such regulations after public hearing and after considering reaction to initial administration and enforcement of the uniform building and fire prevention code, including how local governments have organized to
provide for such initial administration and enforcement. Such rules and regulations shall address the nature and quality of enforcement and shall include, but not be limited to the following:

a. frequency of inspections,

b. number and qualifications of staff, including requirements that inspectors be certified pursuant to this chapter,

c. required minimum fees for administration and enforcement,

d. adequacy of inspections,

e. adequacy of means for insuring compliance with the uniform code,

f. establishment of a procedure whereby any provision or requirement of the uniform code may be varied or modified in cases where strict compliance with such provision or requirement would entail practical difficulties or unnecessary hardship or would otherwise be unwarranted. Such procedure shall be designed to insure that any such variance or modification shall not substantially affect adversely provisions for health, safety and security, and that equally safe and proper alternatives may be prescribed. Requests for a variance shall be resolved within sixty days of the date of application unless a longer period is required for good cause shown, and

g. procedures for inspection of certain classes of buildings based upon design, construction, ownership, occupancy or use, including, but not limited to, mobile homes, factory manufactured homes and state-owned buildings.

Nothing in the rules shall require or be construed to require regular, periodic inspections of owner-occupied one and two-family dwellings provided, however that this shall not be a limitation on inspections conducted at the invitation of the owner or where conditions on the premises threaten or present a hazard to public health, safety, or welfare.

2. Except as may be provided in regulations of the secretary pursuant to subdivision one of this section, every local government shall administer and enforce the uniform fire prevention and building code on and after the first day of January, nineteen hundred eighty-four, provided, however, that a local government may enact a local law prior to the first day of July in any year providing that it will not enforce the uniform code on and after the first day of January next succeeding. In such event the county in which said local government is situated shall administer and enforce the uniform code within such local government from and after the first day of January next succeeding the effective date of such local law, in accordance with the provisions of paragraph b of subdivision five of this section unless the county shall have enacted a local law providing that it will not enforce the uniform code within that county. In such event the secretary in the place and stead of the local government shall, directly or by contract, administer and enforce the uniform code. A local government or a county may repeal a local law which provides that it will not enforce the uniform code and
shall thereafter administer and enforce the uniform code as provided above. Local governments may provide for joint administration and enforcement by agreement pursuant to article five-G of the general municipal law. Any local government may enter into agreement with the county in which such local government is situated to administer and enforce the uniform code within such local government. Local governments or counties may charge fees to defray the costs of administration and enforcement.

3. On and after the first day of July, nineteen hundred eighty-five, the secretary shall have power to investigate and conduct hearings relative to whether administration and enforcement of the uniform fire prevention and building code complies with the minimum standards promulgated pursuant to subdivision one of this section. At least ten days written notice of any such hearing shall be provided to the elective or appointive chief executive officer or, if there be none, the chairman of the legislative body of the local government or county whose administration and enforcement of the uniform code is at issue.

4. If the secretary determines that a local government has failed to administer and enforce the uniform fire prevention and building code in accordance with the minimum standards promulgated pursuant to subdivision one of this section, the secretary shall take any of the following actions, either individually or in combination in any sequence:
   a. The secretary may issue an order compelling compliance by such local government with the standards for administration and enforcement of the uniform code.
   b. The secretary may ask the attorney general to institute in the name of the secretary an action or proceeding seeking appropriate legal or equitable relief to require such local government to administer and enforce the uniform code.
   c. The secretary may designate the county in which such local government is located to administer and enforce the uniform code in such local government. In the case of such designation, the provisions of subdivision five of this section shall apply.
   d. The secretary may, in the place and stead of the local government, administer and enforce the uniform code in accordance with the minimum standards promulgated pursuant to subdivision one of this section. In such event, the provisions of subdivision five of this section shall apply.

5. Where the secretary has designated a county to administer and enforce the uniform fire prevention and building code within a local government or has assumed authority for administration and enforcement pursuant to subdivision two or paragraph d of subdivision four of this section:
   a. Such local government or county government shall not administer and
enforce the uniform code, and shall not charge or collect fees for such administration and enforcement.

b. Such county shall administer and enforce the uniform code within such local government from and after the date of such designation. Such administration and enforcement shall apply the minimum standards promulgated by the secretary pursuant to subdivision one of this section. Notwithstanding any other provisions of law, such county shall have full power to administer and enforce the uniform code in accordance with such minimum standards, including the power to charge and collect fees for such administration and enforcement.

c. The secretary shall designate the local government or county government to resume administration and enforcement of the uniform code when the secretary is satisfied that such local government or county will provide such administration and enforcement in compliance with the minimum standards promulgated pursuant to subdivision one of this section.

d. The provisions of subdivisions three and four of this section shall apply to counties which have been designated to administer and enforce the uniform code in such local government.

6. The secretary shall study and from time to time make recommendations to the governor and legislature concerning:

a. Appropriate means to provide encouragement, support and inducements for local governments and counties to exercise their responsibilities pursuant to this section; and

b. Appropriate means to provide encouragement, support and inducements to facilitate compliance with the provisions of the uniform code.

§ 382. Remedies. 1. In addition to and not in limitation of any power otherwise granted by law, every local government and its authorized agents shall have the power to order in writing the remedying of any condition found to exist in, on or about any building in violation of the uniform fire prevention and building code and to issue appearance tickets for violations of the uniform code.

2. Any person, having been served, either personally or by registered or certified mail, with an order to remedy any condition found to exist in, on, or about any building in violation of the uniform fire prevention and building code, who shall fail to comply with such order within the time fixed by the regulations promulgated by the secretary pursuant to subdivision one of section three hundred eighty-one of this article, such time period to be stated in the order, and any owner, builder, architect, tenant, contractor, subcontractor, construction superintendent or their agents or any other person taking part or assisting in the construction of any building who shall knowingly violate any of the applicable provisions of the uniform code or any
lawful order of a local government, a county or the secretary made thereunder regarding standards for construction, maintenance, or fire protection equipment and systems, shall be punishable by a fine of not more than one thousand dollars per day of violation, or imprisonment not exceeding one year, or both.

3. Where the construction or use of a building is in violation of any provision of the uniform code or any lawful order obtained thereunder, a justice of the supreme court at a special term in the judicial district in which the building is located, may order the removal of the building or an abatement of the condition in violation of such provisions. An application for such relief may be made by the secretary, an appropriate municipal officer, or any other person aggrieved by the violation.

§ 382-a. Buildings with truss type construction; notice requirements and enforcement. 1. All commercial and industrial structures that utilize truss type construction shall be marked by a sign or symbol in a manner sufficient to warn persons conducting fire control and other emergency operations of the existence of truss construction in the structure.

2. The council shall promulgate rules and regulations it deems necessary to carry into effect the provisions of this section, including, but not limited to:
   a. The dimensions and color of such sign or symbol;
   b. The time within which commercial and industrial structures that utilize truss type construction shall be so marked; and
   c. The location on each commercial and industrial structure that utilizes truss type construction where such sign or symbol should be posted.

3. The fee for producing the signs or symbols used to mark buildings with truss type construction shall be fifty dollars, which cost shall be borne by the owner of such building.

4. Local governments shall provide by local law for the enforcement of the provisions of this section. Local governments may provide for joint enforcement of the provisions of this section by agreement pursuant to article five-G of the general municipal law.

5. The provisions of this section shall not apply to any city with a population of one million or more persons.

§ 383. Construction with other laws; severability. 1. The provisions of this article and of the uniform fire prevention and building code shall supersede any other provision of a general, special or local law, ordinance, administrative code, rule or regulation inconsistent or in conflict therewith provided however:
   a. Nothing herein shall impair the validity of any action taken
pursuant to or in compliance with such law or regulation before the effective date of the uniform code; and

b. Any improvement, modification, alteration, adaptation, redesign or repair required by or pursuant to any general, special or local law, administrative code, rule or regulation enacted and effective before the effective date of the uniform code shall be made in the manner and within the time so required.

c. That, in cities with a population of over one million, the existing building and fire prevention codes shall continue in full force and effect beyond January one, nineteen hundred eighty-four unless the council, after analysis and consultation with the building and fire officials of such cities, shall determine that said local code provisions are less stringent than the uniform code. Existing local statutory, regulatory and administrative laws and provisions of such cities shall continue in full force and effect unless the foregoing is determined by the council. Notwithstanding this paragraph, when such factory manufactured homes are intended for use as one or two family dwelling units or multiple dwellings of not more than two stories in height, provided such multiple dwellings are not intended for use as hotels or motels, the provisions of this article and of the uniform fire prevention and building code pertaining to factory manufactured homes shall supersede any other provision of general, special or local law, ordinance, administrative code, rule or regulation inconsistent or in conflict therewith.

2. Nothing herein shall be construed as affecting the authority of the state labor department to enforce a safety or health standard issued under provisions of sections twenty-seven and twenty-seven-a of the labor law.

3. Nothing herein shall be construed to relieve a person from complying with a stricter standard issued pursuant to the Occupational Safety and Health Act of 1970, as amended.

4. If any section of this article or the application thereof to any person or circumstances shall be adjudged invalid by a court of competent jurisdiction, such order or judgment shall be confined in its operation to the controversy in which it was rendered, and shall not affect or invalidate the remainder of any provision of any section or the application of any part thereof to any other person or circumstances and to this end the provisions of each section of the article are hereby declared to be separable.
Uniform Construction Code
35 P.S. §§ 7210.101 to 7210.1103

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§ 7210.101. Short title.
This act shall be known and may be cited as the Pennsylvania Construction Code Act.

§ 7210.102. Legislative findings and purpose.

(a) Findings. - The General Assembly finds as follows:

(1) Many municipalities within this Commonwealth have no construction codes to provide for the protection of life, health, property and the environment and for the safety and welfare of the consumer, general public and the owners and occupants of buildings and structures. Consumers and occupants may be at risk from substandard construction.

(2) Likewise, in some regions of this Commonwealth a multiplicity of construction codes currently exist and some of these codes may contain cumulatively needless requirements which limit the use of certain materials, techniques or products and lack benefits to the public. Moreover, the variation of construction standards caused by the multiplicity of codes may slow the process of construction and increase the costs of construction.

(3) The way to insure uniform, modern construction standards and regulations throughout this Commonwealth is to adopt a Uniform Construction Code.

(4) The model code of the Building Officials and Code Administrators International, Inc. (BOCA), is a construction code which has been widely adopted in this Commonwealth and in the geographical region of the United States of which this Commonwealth is a part. Adoption of a nationally recognized code will insure that this Commonwealth has a uniform, modern construction code which will insure safety, health and sanitary construction.

(b) Intent and purpose. - It is the intent of the General Assembly and the purpose of this act:

(1) To provide standards for the protection of life, health, property and environment and for the safety and welfare of the consumer, general public and the owners and occupants of buildings and structures.
(2) To encourage standardization and economy in construction by providing requirements for construction and construction materials consistent with nationally recognized standards.

(3) To permit to the fullest extent feasible the use of state-of-the-art technical methods, devices and improvements consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures.

(4) To eliminate existing codes to the extent that these codes are restrictive, obsolete, conflicting and contain duplicative construction regulations that tend to unnecessarily increase costs or retard the use of new materials, products or methods of construction or provide preferential treatment to certain types or classes of materials or methods of construction.

(5) To eliminate unnecessary duplication of effort and fees related to the review of construction plans and the inspection of construction projects.

(6) To assure that officials charged with the administration and enforcement of the technical provisions of this act are adequately trained and supervised.

(7) To insure that existing Commonwealth laws and regulations, including those which would be repealed or rescinded by this act, would be fully enforced during the transition to Statewide administration and enforcement of a Uniform Construction Code. Further, it is the intent of this act that the Uniform Construction Code requirements for making buildings accessible to and usable by persons with disabilities do not diminish from those requirements previously in effect under the former provisions of the act of September 1, 1965 (P.L.459, No.235), entitled, as amended, “An act requiring that certain buildings and facilities adhere to certain principles, standards and specifications to make the same accessible to and usable by persons with physical handicaps, and providing for enforcement.”

(8) To start a process leading to the design, construction and alteration of buildings under a uniform standard.

§ 7210.103. Definitions.

The following words and phrases when used in this act shall have the meanings given to them in this section unless the context clearly indicates otherwise:

“Addition.” An extension or increase in floor area or height of a building or structure.

“Advisory board.” The Accessibility Advisory Board created in section 106.

“Agricultural building.” A structure utilized to store farm implements, hay, feed, grain or other agricultural or horticultural products or to house poultry, livestock or other farm animals and a milk house. The term includes a carriage house owned and used by members of a recognized religious sect for the purposes of housing horses and storing buggies. The term shall not include habitable space or spaces in which agricultural products are processed, treated or packaged and shall not be construed to mean a place of occupancy by the general public.

“Alteration.” Any construction or renovation to an existing structure other than repair or addition.

“Board of appeals.” The body created by a municipality or more than one municipality to hear appeals from decisions of the code administrator as provided for by Chapter 1 of the 1999 Building Officials and Code Administrators International, Inc., National Building Code, Fourteenth Edition.

“BOCA.” Building Officials and Code Administrators International, Inc.

“Code administrator.” A municipal code official, a construction code official, a third-party agency or the Department of Labor and Industry.

“Construction code official.” An individual certified by the Department of Labor and Industry in an appropriate category established pursuant to section 701(b) to perform plan review of construction documents, inspect construction or administer and enforce codes and regulations in such code category under this act or related acts.

“Department.” The Department of Labor and Industry of the Commonwealth.

“Habitable space.” Space in a structure for living, sleeping, eating or cooking. Bathrooms, toilet compartments, closets, halls, storage or utility spaces and similar areas shall not be construed as habitable spaces.

“Health care facility.” As defined in section 802.1 of the act of July 19, 1979 (P.L.130, No.48), known as the Health Care Facilities Act.
"ICC." The International Code Council.

“Industrialized housing.” The term shall have the meaning ascribed to it in the act of May 11, 1972 (P.L.286, No.70), known as the Industrialized Housing Act.

“Manufactured housing.” Housing which bears a label, as required by and referred to in the act of November 17, 1982 (P.L.676, No.192), known as the Manufactured Housing Construction and Safety Standards Authorization Act, certifying that it conforms to Federal construction and safety standards adopted under the Housing and Community Development Act of 1974 (Public Law 93-383, 88 Stat. 633).

“Municipal code official.” An individual employed by a municipality or more than one municipality and certified by the Department of Labor and Industry under this act to perform plan review of construction documents, inspect construction or administer and enforce codes and regulations under this act or related acts.

“Municipality.” A city, borough, incorporated town, township or home rule municipality.

“NCSBCS.” The National Conference of State Building Codes and Standards.

“Occupancy.” The purpose for which a building, or portion thereof, is used.

“Recreational cabin.” A structure which is:

- (1) utilized principally for recreational activity;
- (2) not utilized as a domicile or residence for any individual for any time period;
- (3) not utilized for commercial purposes;
- (4) not greater than two stories in height, excluding basement;
- (5) not utilized by the owner or any other person as a place of employment;
- (6) not a mailing address for bills and correspondence; and
- (7) not listed as an individual's place of residence on a tax return, driver's license, car registration or voter registration.

“Repair.” The reconstruction or renewal of any part of an existing building for the purpose of its maintenance.

“Residential building.” Detached one-family and two-family dwellings and multiple single-family dwellings which are not more than three stories in height with a separate means of egress which includes accessory structures.

“Secretary.” The Secretary of Labor and Industry of the Commonwealth.

“State institutions.” As defined in section 901 of the act of June 13, 1967 (P.L.31, No.21), known as the Public Welfare Code.

“Technically infeasible.” An alteration of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

“Third-party agency.” A person, firm or corporation certified by the Department of Labor and Industry as a construction code official and contracted to perform plan review of construction documents, inspect construction or administer and enforce codes and regulations under this act.

“Uniform Construction Code.” The code established in section 301.

“Utility and miscellaneous use structures.” Buildings or structures of an accessory character and miscellaneous structures not classified by the Building Officials and Code Administrators International, Inc., in any specific use group. The term includes carports, detached private garages, greenhouses and sheds having a building area less than 1,000 square feet. The term does not include swimming pools or spas.

§ 7210.104. Application.

(a) General rule. - This act shall apply to the construction, alteration, repair and occupancy of all buildings in this Commonwealth.

(b) Exclusions. - This act shall not apply to:
(1) new buildings or renovations to existing buildings for which an application for a building permit has been made to the municipality prior to the effective date of the regulations promulgated under this act;

(2) new buildings or renovations to existing buildings on which a contract for design or construction has been signed prior to the effective date of the regulations promulgated under this act on projects requiring department approval;

(3) utility and miscellaneous use structures that are accessory to detached one-family dwellings; or

(4) any agricultural building.

(5) alterations to residential buildings which do not make structural changes or changes to means of egress, except as might be required by ordinances in effect pursuant to section 303(b)(1) or adopted pursuant to section 503. For purposes of this paragraph, a structural change does not include a minor framing change needed to replace existing windows or doors;

(6) repairs to residential buildings, except as might be required by ordinances in effect pursuant to section 303(b)(1) or adopted pursuant to section 503;

(7) any recreational cabin if:

(i) the cabin is equipped with at least one smoke detector, one fire extinguisher and one carbon monoxide detector in both the kitchen and sleeping quarters; and

(ii) the owner of the cabin files with the municipality either:

(A) an affidavit on a form prescribed by the department attesting to the fact that the cabin meets the definition of a "recreational cabin" in section 103; or

(B) a valid proof of insurance for the recreational cabin, written and issued by an insurer authorized to do business in this Commonwealth, stating that the structure meets the definition of a "recreational cabin" as defined in section 103.

(b.1) Continuity of Exclusion. -

(1) If a recreational cabin is subject to exclusion under subsection (b)(7), upon transfer of ownership of the recreational cabin, written notice must be provided in the sales agreement and the deed that the recreational cabin:

(i) is exempt from this act;

(ii) may not be in conformance with the Uniform Construction Code; and

(iii) is not subject to municipal regulation.

(2) Failure to comply with the notice requirement under paragraph (1) shall render the sale voidable at the option of the purchaser.

(c) Prior permits and construction. -

(1) Subject to paragraph (2), a construction permit issued under valid construction regulations prior to the effective date of the regulations issued under this act shall remain valid, and the construction of any building or structure may be completed pursuant to and in accordance with the permit.

(2) If the requirements of the permit have not been actively prosecuted within two years of the effective date of the regulations or the period specified by a municipal ordinance, whichever is less, the former permit holder shall be required to acquire a new permit. Where construction of a building or structure commenced before the effective date of the regulations promulgated under this act and a permit was not required at that time, construction may be completed without a permit.

(d) Preemption.

(1) Except as otherwise provided in this act, construction standards provided by any statute or local ordinance or regulation promulgated or adopted by a board, department, commission, agency of State government or agency of local government shall continue in effect only until the effective date of regulations promulgated under this act, at which time they shall be preempted by regulations promulgated under this act and deemed thereafter to be rescinded.
Except as otherwise provided in this act and as specifically excepted in subparagraph (ii), a homeowners’ association or community association shall be preempted from imposing building construction standards or building codes for buildings to be constructed, renovated, altered or modified.

In municipalities which have not adopted an ordinance for the administration and enforcement of this act, a homeowners’ association or community association may adopt by board regulations the Uniform Construction Code or the ICC International One and Two Family Dwelling Code, 1998 Edition. The applicable building code shall constitute the standard governing building structures in the association’s community.

Nothing in this act shall preempt any licensure or Federal certification requirements for health care facilities, intermediate care facilities for the mentally retarded or for persons with related conditions or State institutions. This paragraph includes building and life safety code standards set forth in applicable regulations.

Nothing in this act shall limit the ability of the Department of Aging, the Department of Health or the Department of Public Welfare to promulgate or enforce regulations which exceed the requirements of this act.

Nothing in this act shall prohibit a municipality from licensing any persons engaged in construction activities or from establishing work rules or qualifications for such persons.

The provisions of this act as they relate to swimming pools and spas shall not be applicable to those constructed or installed prior to the effective date of this act.

All swimming pools and spas constructed or installed after the effective date of this act shall be governed by the requirements of this act, including section 503.

§ 7210.105. Department of Labor and Industry.

The department shall with reasonable cause review municipalities, municipal code officials, third-party agencies, construction code officials and code administrators concerning the enforcement and administration of this act, including specifically complaints concerning accessibility requirements.

The department shall make a report to the governing body of the municipality that was the subject of the review. The report shall include recommendations to address any deficiency observed by the department.

The department may require compliance with this act through proceedings in Commonwealth Court.

The department shall maintain plan and specification review and inspection authority over all State-owned buildings. State-owned buildings shall be subject to regulations promulgated under this act. The department shall notify municipalities of all inspections of State-owned buildings and give municipalities the opportunity to observe the department inspection of such buildings.

Municipalities shall notify the department of all inspection of buildings owned by political subdivisions and give the department the opportunity to observe municipal inspection of such buildings.

The department shall make available to municipalities, upon request, copies of all building plans and plan review documents in the custody of the department for State-owned buildings.

A municipality shall make available to the department, upon request, copies of all building plans and plan review documents in the custody of the municipality for buildings owned by political subdivisions.

The department shall maintain Statewide administration and inspection authority over ski lifts, inclined passenger lifts and related devices, and elevators, conveying systems and related equipment as defined in section 3002.0 (definitions) of Chapter 30 of the 1999 BOCA National Building Code, Fourteenth Edition.

Notwithstanding Chapters 3 and 5, the department may, subject to the act of June 25, 1982 (P.L.633, No.181),
known as the Regulatory Review Act, by regulation modify the 1999 BOCA National Building Code, Fourteenth Edition, Referenced Standards for elevator construction, repair, maintenance and inspection. The department shall not require reshackling more than once every two years.

(3) Nothing in this section shall be construed to disallow third-party elevator inspections.

(d) Department of Health. -

(1) Health care facilities, intermediate care facilities for the mentally retarded or for persons with related conditions and State institutions shall continue to comply with building codes and standards set forth in the applicable licensure laws and regulations. This paragraph includes the applicable edition of the National Fire Protection Association’s Life Safety Code, NFPA No. 101, and the applicable edition of the Guidelines for Construction and Equipment of Hospital and Medical Facilities.

(2) The department may delegate its responsibility for conducting plan reviews and inspections for health care facilities to the Department of Health.

(e) Limitation. - Nothing in this act, the regulations under this act or the administration of the act or the regulations by the department shall contravene the right of builders to freely compete for and perform contracts for construction of commercial buildings in this Commonwealth.

§ 7210.106. Accessibility Advisory Board.

(a) Creation and composition. -

(1) There is hereby created an Accessibility Advisory Board which shall be composed of 11 members appointed by the secretary. At least six members of the advisory board shall be public members, three of whom shall be persons with physical disabilities, one shall be an architect registered in Pennsylvania, one shall be a member of the business community, and one shall be a representative of the multifamily housing industry. One member shall be a municipal official. The chairman and minority chairman of the Labor and Industry Committee of the Senate and the chairman and minority chairman of the Labor Relations Committee of the House of Representatives, or their designees, shall be members. All members of the advisory board, except the members of the General Assembly, shall serve for a term of two years and until their successors are appointed.

(2) The members of the advisory board shall be paid traveling expenses and other necessary expenses and may receive a per diem compensation at a rate to be determined by the secretary for each day of actual service in the performance of their duties under this act.

(3) Meetings of the advisory board shall be called by the secretary. A quorum of the advisory board shall consist of four members.

(4) The initial advisory board shall be the body constituted under the former provisions of section 3.1 of the act of September 1, 1965 (P.L.459, No.235), entitled, as amended, “An act requiring that certain buildings and facilities adhere to certain principles, standards and specifications to make the same accessible to and usable by persons with physical handicaps, and providing for enforcement.”

(b) Advice on regulation. - The advisory board shall review all proposed regulations under this act and shall offer comment and advice to the secretary on all issues relating to accessibility by persons with physical disabilities, including those which relate to the enforcement of the accessibility requirements.

(c) Recommendations for modifications. - The advisory board shall review all applications from individual projects for modifications of the provisions of Chapter 11 (Accessibility) of the Uniform Construction Code and any other accessibility requirements contained in or referenced by the Uniform Construction Code and shall advise the secretary regarding whether modification should be granted or whether compliance by existing facilities with provisions of Chapter 11 (Accessibility) of the Uniform Construction Code and any other accessibility requirements contained in or referenced by the Uniform Construction Code is technically infeasible.

§ 7210.301. Adoption by regulations.

(a) Regulations. -

(1) The department shall, within 180 days of the effective date of this section, promulgate regulations adopting the 1999 BOCA National Building Code, Fourteenth Edition, as a Uniform Construction Code, except as provided in
section 105(c)(2) and this section. The department shall promulgate separate regulations which may make changes to Chapter 1 of the 1999 BOCA National Building Code, Fourteenth Edition, relating to administration that are necessary for the department’s implementation of this act.

(2) The regulations shall include a provision that all detached one-family and two-family dwellings and one-family townhouses that are not more than three stories in height and their accessory structures shall be designed and constructed either in accordance with the ICC International One and Two Family Dwelling Code, 1998 Edition, or in accordance with the requirements of the Uniform Construction Code at the option of the building permit applicant. The provision shall require that an irrevocable election be made at the time plans are submitted for review and approval. If the building permit applicant does not indicate a code, the design and construction shall be in accordance with the Uniform Construction Code.

(3) The regulations shall include a provision that the secretary shall have the exclusive power to grant modifications and decide issues of technical infeasibility under Chapter 11 (Accessibility) of the Uniform Construction Code and any other accessibility requirements contained in or referenced by the Uniform Construction Code for individual projects.

(4) The secretary shall consider the recommendations of the advisory board as provided in section 106(c). The department shall consider the comments of the advisory board with respect to accessibility issues in any proposed regulations.

(5) The regulations shall provide for a system of periodic compliance reviews conducted by the department and for enforcement procedures conducted by the department to ensure that code administrators are adequately administering and enforcing Chapter 11 (Accessibility) of the Uniform Construction Code and any other accessibility requirements contained in or referenced by the Uniform Construction Code.

(6) The regulations shall include the provisions of exception 8 to section 1014.6 (relative to stairway treads and risers) of the 1993 BOCA National Building Code, Twelfth Edition, and the provisions of section R-213.1 (relative to stairways) of the CABO One and Two Family Dwelling Code, 1992 Edition, and such provisions shall be applicable notwithstanding section 303(b), which shall not apply to the provisions of any municipal building code ordinance which equals or exceeds these provisions.

(7) The department shall consult with the Department of Health in the development of regulations relating to health care facilities, intermediate care facilities for the mentally retarded or for persons with related conditions and State institutions.

(8) The regulations shall exclude section R313.1.1 of the 2003 International Residential Code for One- and Two-Family Dwellings or its successor code from applying to existing one-family and two-family unit dwellings undergoing alterations, repairs or additions but shall include provisions requiring non-interconnected battery-operated smoke alarms in one-family and two-family dwellings in accordance with section R313.1.1 of the 2003 International Residential Code for One-and Two-Family Dwellings.

(9) Regulations under this subsection shall include the adoption of section 110.3 (temporary occupancy) of the International Building Code.

(b) International Fuel Gas Code. - The department shall, within 180 days of the effective date of this section, promulgate regulations adopting the International Fuel Gas Code for the installation of fuel gas piping systems, fuel gas utilization equipment and related accessories as the standard for the installation of piping, equipment and accessories in this Commonwealth.

(c) Prescriptive methods for energy-related standards. - The department shall, within 180 days of the effective date of this section, by regulation promulgate prescriptive methods to implement the energy-related standards of the Uniform Construction Code which take into account the various climatic conditions through this Commonwealth. In deriving these standards the department shall seek to balance energy savings with initial construction costs.

(d) Scope of regulations. -

(1) The regulations adopted by the department implementing these codes shall supersede and preempt all local building codes regulating any aspect of the construction, alteration and repair of buildings adopted or enforced by any municipality or authority or pursuant to any deed restriction, rule, regulation, ordinance, resolution, tariff or order of any public utility or any State or local board, agency, commission or homeowners’ association except as may be otherwise specifically provided in this act.

(2) The department may establish by regulation plan review and inspection fees where the department is responsible for administration and enforcement and requirements for municipal notification to the department of ordinance
adoption and repeal under Chapter 5. The department shall consult with the Department of Aging, the Department of Health or the Department of Public Welfare, as appropriate, to determine fees for health care facilities, intermediate care facilities for the mentally retarded or for persons with related conditions and State institutions.

(3) The department shall establish by regulation standards for the retention and sharing of building plans and other documents, for other than one-family or two-family dwelling units and utility and miscellaneous use structures, by the department, municipalities and third-party agencies.

§ 7210.302. Referenced standards.

(a) General rule. -

(1) Subject to paragraph (2), the standards referenced in Chapters 30 and 35 relating to elevators and conveying systems and referenced standards, respectively, or the applicable chapter, of the 1999 BOCA National Building Code, Fourteenth Edition, and the American National Standards for Passenger Tramways, Aerial Tramways, Aerial Lifts, Surface Lifts and Tows, ASME/ANSI B77.1, shall be considered part of the requirements of the Uniform Construction Code to the prescribed extent of each such reference except that BNPMC-96 BOCA National Property Maintenance Code and ASME/ANSI A17.3 (safety code for existing elevators and escalators) shall be excluded.

(2) The standards under paragraph (1) shall include the latest ANSI standards applicable to the operation of ski lifts.

(b) No preemption. - Nothing contained in this act shall be construed to preempt the ability of a municipality to adopt or enforce the codes referred to in this section to the extent not referenced, in whole or in part, in Chapter 35 relating to referenced standards or applicable chapter of the 1999 BOCA National Building Code, Fourteenth Edition.

§ 7210.303. Existing municipal building code ordinances.

(a) Failure to meet minimum requirements. -

(1) Except as provided in paragraph (2), the provisions of municipal building code ordinances in effect on the effective date of this act that do not equal or exceed the minimum requirements of the regulations promulgated under this act shall be amended by the effective date of the regulations promulgated under this act to provide for the minimum requirements.

(2) A municipal building code ordinance provision in effect in or adopted by a city of the first class on or before January 1, 1998, shall remain in effect until December 31, 2003, by which time those provisions of the ordinance which do not comply with the minimum requirements of the regulations promulgated under this act shall be amended to provide for the minimum requirements of regulations promulgated under this act.

(b) Provisions which equal or exceed the Uniform Construction Code. -

(1) Municipal building code ordinances in effect on July 1, 1999, or reenactments of provisions of simultaneously repealed ordinances which were originally adopted prior to July 1, 1999, which contain provisions which equal or exceed the specific requirements of the regulations promulgated under this act shall remain in effect until such time as any such provisions fail to equal or exceed the minimum requirements of the regulations promulgated under this act, at which time the provisions of such ordinances shall be amended to provide for the minimum requirements of the regulations promulgated under this act.

(2) Municipal building code ordinances adopted or effective after July 1, 1999, except reenactments of provisions of simultaneously repealed ordinances which were originally adopted prior to July 1, 1999, shall continue in effect only until the effective date of the regulations promulgated under this act, at which time the municipal building code ordinance shall be preempted by the regulations promulgated under this act and shall be deemed thereafter to be rescinded.

§ 7210.304. Revised or successor codes.

(a) Building code. -

(1) By December 31 of the year of the issuance of a new triennial BOCA National Building Code, or its successor building code, the department shall promulgate regulations adopting the new code as the Uniform Construction Code.

(2) By December 31 of the year of issuance of a new triennial ICC International One and Two Family Dwelling Code, or its successor building code, the department shall promulgate regulations providing that all detached one-family and two-family dwellings and one-family townhouses that are not more than three stories in height and their accessory structures may be designed in accordance with that code or the Uniform Construction Code at the option of the building permit applicant.
(b) International Fuel Gas Code. - By December 31 of the year of the issuance of a new International Fuel Gas Code, or its successor code, the department shall promulgate regulations adopting the new code.

(c) Prior permits and construction. -

1. A construction permit issued under valid construction regulations prior to the effective date of regulations for a subsequent Uniform Construction Code or International Fuel Gas Code issued under this act shall remain valid, and the construction of any building or structure may be completed pursuant to and in accordance with the permit.

2. If the permit has not been actively prosecuted within two years of the effective date of the regulation or the period specified by a municipal ordinance, whichever is less, the former permitholder shall be required to acquire a new permit.

3. Where construction of a building or structure commenced before the effective date of the regulations for a subsequent Uniform Construction Code or International Fuel Gas Code issued under this act and a permit was not required at that time, construction may be completed without a permit.

§7210.305 Existing municipality or municipal authority standards for lateral connections

(a) General rule - Municipality or municipal authority standards for lateral connections located on private property and connecting to public infrastructure owned by a municipality or municipal authority that were in effect on January 1, 2005, and contain provisions that equal or exceed the requirements of the regulations promulgated under this act, the internal residential code or under the international plumbing code shall remain in effect until such time as any such provisions fail to equal or exceed the minimum requirements of the regulations promulgated under this act, at which time the standards shall be amended to equal or exceed the minimum requirements of the regulations promulgated under this act.

(b) Filing requirement - Municipality or municipal authority standards qualifying under subsection (a) shall be filed with the department and any local governments served by the municipality or municipal authority with such standards.

§7210.501. Administration and enforcement.

(a) Adoption of ordinance. -

1. In order to administer and enforce the provisions of this act, municipalities shall enact an ordinance concurrently adopting the Uniform Construction Code as their municipal building code and the International Fuel Gas Code for the purposes described in section 302(a). Municipalities may adopt the Uniform Construction Code and incorporated codes and the International Fuel Gas Code by reference.

2. Municipalities shall have 90 days after the effective date of this act to adopt such an ordinance. Municipalities shall notify the department of the adoption of such an ordinance within 30 days. A municipality may adopt such an ordinance at any time thereafter, upon giving the department 180 days' notice of its intention to adopt such ordinance.

(a.1) Counties of the second class — Notwithstanding the provisions of subsection (a), a municipality located within a county of the second class shall not administer and enforce plumbing code provisions of an ordinance adopting the Uniform Construction Code and incorporated codes for the purposes of section 302(a). A county of the second class that has adopted a plumbing code and accompanying rules and regulations pursuant to the act of August 24, 1951 (P.L. 1304, No. 315), known as the Local Health Administration Law, shall retain the authority to promulgate and enforce such plumbing code and to make such changes as it deems necessary, provided that such changes meet the minimum requirements as defined in the Uniform Construction Code.

(b) Municipal administration and enforcement. - This act may be administered and enforced by municipalities in any of the following ways:

1. By the designation of an employee to serve as the municipal code official to act on behalf of the municipality for administration and enforcement of this act.

2. By the retention of one or more construction code officials or third-party agencies to act on behalf of the municipality for administration and enforcement of this act.

3. Two or more municipalities may provide for the joint administration and enforcement of this act through an intermunicipal agreement under 53 Pa.C.S. Ch. 23 Subch. A (relating to intergovernmental cooperation).

4. By entering into a contract with the proper authorities of another municipality for the administration and enforce-
ment of this act. When such a contract has been entered into, the municipal code official shall have all the powers and authority conferred by law in the municipality which has contracted to secure such services.

(5) By entering into an agreement with the department for plan reviews, inspections and enforcement of structures other than one-family or two-family dwelling units and utility and miscellaneous use structures.

(c) Board of appeals. -

(1) A municipality which has adopted an ordinance for the administration and enforcement of this act or municipalities which are parties to an agreement for the joint administration and enforcement of this act shall establish a board of appeals as provided by Chapter 1 of the 1999 BOCA National Building Code, Fourteenth Edition, to hear appeals from decisions of the code administrator. Members of the municipality’s governing body may not serve as members of the board of appeals.

(2) An application for appeal shall be based on a claim that the true intent of this act or regulations legally adopted under this act have been incorrectly interpreted, the provisions of this act do not fully apply or an equivalent form of construction is to be used.

(3) When a municipality cannot find persons to serve on a board of appeals who meet the minimum qualifications of Chapter 1 of the BOCA National Building Code, the municipality may fill a position on the board with a qualified person who resides outside of the municipality.

(d) Registration. - Nothing in this act shall allow a municipality to prohibit a construction code official who meets the requirements of Chapter 7 and remains in good standing from performing inspections in the municipality. This section does not alter the power and duties given to municipalities under subsection (b)(1), (3) and (4).

(e) Nonmunicipal administration. -

(1) In municipalities which have not adopted an ordinance for the administration and enforcement of this act, it shall be the duty of the municipality to notify an applicant for a construction permit that it shall be the responsibility of the permit applicant of one-family or two-family dwelling units and utility and miscellaneous use structures to obtain the services of a construction code official or third-party agency with appropriate categories of certification to conduct the plan review and inspections. For one-family and two-family dwelling units and utility and miscellaneous use structures, all of the following five inspections shall be required:

(i) Foundation inspection.
(ii) Plumbing, mechanical and electrical inspection.
(iii) Frame and masonry inspection.
(iv) Wallboard inspection.
(v) Final inspection. The final inspection shall not be deemed approved until all previous inspections have been successfully completed and passed.

(2) In municipalities which have not adopted an ordinance for the administration and enforcement of this act, it shall be the duty of the municipality to notify the department and an applicant for a construction permit that it shall be the responsibility of the owner of structures other than one-family or two-family dwelling units and utility and miscellaneous use structures to obtain the services of the department or a third-party agency with appropriate categories of certification under contract to the department to conduct the plan review and inspections required by this act.

(3) A copy of the final inspection report shall be sent to the property owner and to the builder and to a lender designated by the builder.

(4) In municipalities which require a building permit or a certificate of occupancy but do not conduct inspections, the code administrator shall also be required to submit a copy of the report to the municipality. No certificate of occupancy shall be issued for a building unless it meets all of the applicable accessibility provisions of the Uniform Construction Code or has been granted a variance for the requirements it does not meet. A certificate of partial occupancy may be issued if the space to be occupied complies with the accessibility requirements contained in the Uniform Construction Code unless a variance for the space has been obtained in accordance with this act.

(f) Private right of action. -

(1) In relation to complaints arising out of Chapter 11 (Accessibility) of the Uniform Construction Code, any individual, partnership, agency, association or corporation who reasonably believes there is a violation of the accessibility
provisions of this act and its regulations by a governmental entity or private owner may file a complaint with the
body responsible for enforcement of the Uniform Construction Code. The complaint shall be in writing, shall be
verified and shall set forth the grounds for the complaint. Within 60 days after the receipt of the complaint, the code
enforcement body shall respond to the complaint by acknowledging receipt of the complaint in writing. The enforce-
ment body shall investigate the complaint and respond to the complainant in writing with its findings, determina-
tions and any enforcement measures initiated or contemplated within 120 days after the receipt of the complaint.
For the purpose of investigating a complaint, an employee of the enforcement organization may inspect at reason-
able times the building or building site which is the subject of the complaint and may make any additional inves-
tigation deemed necessary for the full and effective determination of compliance with this act and regulations promul-
gated pursuant to it.

(2) Any individual, partnership, agency, association or corporation aggrieved by a final determination of the enforcement
agency of a complaint filed pursuant to paragraph (1) hereof may file a petition for review within 30 days of the final
determination in the Commonwealth Court pursuant to 42 Pa.C.S. § 763(a) (relating to direct appeals from govern-
ment agencies). The decision of the enforcement agency shall not be reversed unless it is found to be arbitrary,
capricious, illegal or not supported by substantial evidence.

(3) (i) Any individual, partnership, agency, association or corporation who filed a complaint pursuant to paragraph (1)
and received no written response from the enforcement agency acknowledging receipt of its complaint within 60
days or received a response from the enforcement agency indicating that a violation was found but enforcement
measures were not contemplated or enforcement measures were contemplated but such measures were not
initiated after a period of 60 days from said response may bring a civil action in the appropriate court of com-
mon pleas against the agency for failure to enforce the provisions of this act and the regulations promul-
gated thereto or a building owner or owner's agent for a violation of any provisions of this act or regulations promul-
gated pursuant to it.

(ii) If the court finds a violation of this act or of regulations adopted pursuant to it, the court may enjoin construc-
tion or remodeling of the building, direct the correction of violations within a reasonable and specified time
period or order such other relief deemed appropriate. The court, in issuing any final orders in any action brought
pursuant to this section, may award costs of litigation, attorney and expert witness fees to any party whenever
the court determines such an award is appropriate. The court may, if a temporary restraining order or prelimi-
nary injunction is sought, require the filing of a bond or equivalent security in accordance with the rules of civil
procedure.

(iii) An architect or licensed design professional who has complied with the provisions of this act and its regulations
and prepared construction documents in accordance with accepted professional standards shall have no further
liability pursuant to litigation commenced under this section.

(g) Technical assistance to municipalities - The Governor’s Center for Local Government Services in the Department of
Community and Economic Development shall be the principal agency for developing and providing technical assistance
to municipalities for implementing, administrating and enforcing the provisions of this act.

§ 7210.502. Consideration of applications and inspections.

(a) Applications for construction permits.-

(1) Every application for a construction permit for one-family and two-family dwelling units and utility and miscellaneous
use structures shall be granted or denied, in whole or in part, within 15 business days of the filing date. All other
construction permits shall be granted or denied, in whole or in part, within 30 business days of the filing date. Munici-
palities may establish different time limits to consider applications for construction permits in historic districts.

(2) If an application is denied in whole or in part, the code administrator shall set forth the reasons in writing.

(3) If the code administrator fails to act on an application for a construction permit for one-family and two-family
dwelling units and utility and miscellaneous use structures within the time prescribed, the application shall be
deemed approved. The time limits established in this section for permit applications other than one-family and two-
family dwellings may be extended upon agreement in writing between the applicant and the municipality for a
specific number of additional days.

(b) Highway occupancy permit. -

(1) No building permit shall be issued for any property which will require access to a highway under the jurisdiction of
the Department of Transportation unless the permit contains a notice that a highway occupancy permit is required pursuant to section 420 of the act of June 1, 1945 (P.L.1242, No.428), known as the State Highway Law, before driveway access to a State highway is permitted.

(2) The Department of Transportation shall, within 60 days of the date of receipt of an application for a highway occupancy permit:

(i) approve the permit;

(ii) deny the permit;

(iii) return the application for additional information or correction to conform with regulations of the Department of Transportation; or

(iv) determine that no permit is required, in which case the Department of Transportation shall notify the municipality and applicant in writing.

(3) If the Department of Transportation fails to take any action within the 60-day period, the permit shall be deemed to be issued. The permit shall be marked to indicate that access to the State highway shall be only as authorized by a highway occupancy permit.

(ii) Notwithstanding the provisions of subparagraph (i), if the highway occupancy permit requires a determination by the United States Department of Transportation, the Pennsylvania Department of Transportation shall have 60 days from the receipt of the determination to take action on the permit or the permit shall be deemed to be issued.

(4) Neither the Department of Transportation nor any municipality to which permit-issuing authority has been delegated under section 420 of the State Highway Law shall be liable in damages for any injury to persons or property arising out of the issuance or denial of a driveway permit or for failure to regulate any driveway.

(ii) The municipality from which the building permit approval has been requested shall not be held liable for damages to persons or property arising out of the issuance or denial of a driveway permit by the Department of Transportation.

(c) Financial interest prohibited. - A code administrator shall not review or approve any plans for or construction of any building or structure in which the code administrator has any financial interest.

§ 7210.503. Changes in Uniform Construction Code.

(a) Administration. - Municipalities may enact ordinances which equal or exceed the minimum requirements of Chapter 1 of the 1999 BOCA National Building Code, Fourteenth Edition, relating to administration consistent with the provisions of section 501(c).

(b) Minimum requirement. - Subject to the provisions of this act, no municipality may propose or enact any ordinance which is less than the minimum requirement of the Uniform Construction Code.

(c) Modification of minimum requirement. - Subject to the provisions of this act, the municipal governing body may propose and enact an ordinance to equal or exceed the minimum requirements of the Uniform Construction Code under the law governing the adoption of ordinances in that jurisdiction. Municipalities may enact ordinances pursuant to this section which adopt additional code requirements for alterations or repairs to residential buildings. Municipalities may enact ordinances pursuant to this section which adopt stricter code requirements than required by this act for the regulation of utility and miscellaneous use structures.

(d) Public hearing. - The municipality shall hold at least one public hearing prior to adoption of the ordinance.

(e) Notice of public hearing. - The municipality shall place notice in a newspaper of general circulation in the municipality at least seven days, but not more than 60 days, in advance of a public hearing to consider the proposed ordinance.

(f) Filing of proposed ordinance with department. - The municipality shall file a copy of the proposed ordinance with the department at least 30 days prior to public hearing. The department shall make proposed ordinances available for public inspection.

(g) Municipal action. - Following the public hearing, the municipal governing body may enact the ordinance under the law governing the adoption of ordinance in that jurisdiction.

(h) Amendment of proposed ordinance. - If the municipality proposes any substantive amendment to a proposed ordinance,
the municipal governing body shall be required to meet the advertising, filing, notice and public hearing requirements of this section before enacting the proposed ordinance.

(i) Department review. - The department shall review all proposed ordinances required to be filed with the department under subsection (f) for compliance with subsection (b). If the proposed ordinance does not comply with subsection (b), the department shall advise the municipality of its findings, setting forth the reasons in writing. The municipality shall then withdraw the proposed ordinance or revise the proposed ordinance to meet the minimum requirements of the Uniform Construction Code.

(j) Challenge of ordinance. -

(1) Aggrieved parties shall have 30 days from date of enactment of the ordinance to file a written challenge with the department and the municipality. The challenge shall state the reason or reasons for the challenge. A municipal ordinance may not take effect for a period of 35 days following its enactment. If a challenge is filed in writing with the department within 30 days, the department has five business days from the end of the 30-day filing period to notify a municipality of the challenge. There may be no enforcement of the ordinance until a ruling is issued by the secretary or 45 days after the filing date of the last challenge to the ordinance, whichever occurs first.

(2) The department shall review any ordinance which would equal or exceed the minimum requirements of the Uniform Construction Code based on the following standards:

(i) that certain clear and convincing local climatic, geologic, topographic or public health and safety circumstances or conditions justify the exception;

(ii) the exception shall be adequate for the purpose intended and shall meet a standard of performance equal to or greater than that prescribed by the Uniform Construction Code;

(iii) the exception would not diminish or threaten the health, safety and welfare of the public; and

(iv) the exception would not be inconsistent with the legislative findings and purpose described in section 102. The department shall take into consideration, in rendering the determination, the provision, code development process history, purpose and intent of relevant provisions of the 1999 BOCA National Building Code, Fourteenth Edition, ICC International One and Two Family Dwelling Code, 1998 Edition, or their successor codes.

(k) Ruling by secretary. - A ruling on a challenge by an aggrieved party shall be issued by the secretary within 45 days of receipt of the filing of the last challenge to the ordinance or within 30 days of the hearing on the challenge which must be held by the department upon the request of the municipality in the municipality wherein the ordinance is proposed, whichever last occurs. If the secretary approves the ordinance, the municipality may begin to administer and enforce the ordinance. If the secretary disapproves the ordinance, the ordinance shall be null and void. The secretary shall state the reasons for the disapproval in writing to the municipality.

§ 7210.504. Appeals.

(a) Ruling of secretary. - An appeal of the secretary’s ruling may be taken to the appropriate court of common pleas within 30 days of the date of the ruling.

(b) Application for enforcement of ordinance. - Any person aggrieved by the application or enforcement of any provision of an ordinance adopted pursuant to section 503 shall have the right to challenge the validity of the ordinance in the appropriate court of common pleas. In order to be aggrieved, a person must have a direct, immediate and substantial interest in the application or enforcement of the ordinance.

§ 7210.701. Training of inspectors.

(a) Training program. - The department, in consultation with the advisory board, BOCA, NCSBSCS and other interested parties, shall by regulation adopt a program of required training and certification for all categories of code administrators. This education program shall include accessibility requirements contained in and referenced by the Uniform Construction Code. The department may contract with third parties to provide the code training and testing programs.

(b) Categories of inspectors. -

(1) The department, in consultation with BOCA and other interested parties, shall establish appropriate categories of code administrators.
A code administrator may act in place of a lumber grading or inspection agency to satisfy the requirement set forth under section 2303.1.1 of the 2003 International Building Code or its successor code.

Certification. - Upon determination of qualification, the department shall issue a certificate to the code administrator stating that he is so certified.

Waiver. - The department shall by regulation establish a procedure for the consideration of requests for waivers of the initial training and certification requirements for individuals who present documentation that they have previously satisfied substantially similar training, testing and certification requirements. The department may also consider past work experience as an inspector when deciding a request for a waiver. Any waiver shall not apply to continuing education requirements.

Current officials. -

The department shall by regulation determine the time period for current code administrators to meet the training and certification requirements of this act. This time period shall not be less than three years and not exceed seven years from the effective date of this act for individuals conducting plan review and inspections of one-family or two-family residential property or not be less than five years and not exceed ten years for individuals conducting plan reviews and inspections on all other buildings and structures.

Notwithstanding the provisions of this subsection, the department shall adopt regulations specifically providing for the department’s administration and enforcement of the provisions of Chapter 11 (Accessibility) of the Uniform Construction Code and any other accessibility requirements contained in or referenced by the Uniform Construction Code until code administrators have been certified regarding accessibility provisions. The department shall maintain jurisdiction over the provisions of Chapter 11 (Accessibility) of the Uniform Construction Code and any other accessibility requirements contained in or referenced by the Uniform Construction Code until such time as municipal code administrators meet the requirements for certification.

Continuing education. - The department shall by regulation adopt and implement the continuing education program, and all code administrators shall participate in the department’s continuing education programs.

Remedial education. - The department is empowered to require code administrators to participate in remedial education programs for just cause.

Decertification. - The department is empowered to decertify code administrators for just cause. The department shall by regulation establish a procedure for the notification of code administrators of decertification and the right of the individual to receive a hearing before the department on decertification.

List of code administrators. - The department shall maintain a list of code administrators, indicating the categories of certifications, which shall be made available to municipalities and, upon request, the public.

Fees. - The department shall determine and approve reasonable fees for educational programs, testing and certification of code administrators. The department shall consult with the Department of Aging, the Department of Health or the Department of Public Welfare, as appropriate, to determine fees for health care facilities, intermediate care facilities for the mentally retarded or for persons with related conditions and State institutions.

Insurance. - The department shall promulgate regulations requiring code administrators in third-party agencies to carry minimum levels of liability insurance.

§ 7210.702. Reciprocity.

The department may develop reciprocity agreements with other states or jurisdictions which have established accreditations and certification requirements which the department determines to be substantially similar to those set forth in this act.

§ 7210.703. Education and training program.

Fee. - Municipalities administering and enforcing this act under section 501(a) and third-party agencies providing services under section 501(e) shall assess a fee of $2 on each construction or building permit issued under the authority of this act. The fee shall be in addition to any other fee imposed for the permit.

Municipal Code Official Training Account. - There is hereby established within the State Treasury a restricted account which shall be known as the Municipal Code Official Training Account.
(c) Deposit. - Moneys collected as authorized under subsection (a) shall be transmitted quarterly to the State Treasury and shall be deposited in the account. Moneys so deposited are hereby appropriated on approval of the Governor to the Department of Community and Economic Development for the purpose of education and training programs provided by the Pennsylvania Construction Codes Academy for municipal code officials and individuals employed by third-party agencies under contract to a municipality.

§ 7210.901. Exemptions.

(a) Manufactured housing - This act shall not apply to manufactured housing which bears a label, as required by and referred to in the act of November 17, 1982 (P.L.676, No.192), known as the Manufactured Housing Construction and Safety Standards Authorization Act, which certifies that it conforms to Federal construction and safety standards adopted under the Housing and Community Development Act of 1974 (Public Law 93-383, 88 Stat. 633), nor shall it apply to industrialized housing, as defined in the act of May 11, 1972 (P.L.286, No.70), known as the Industrialized Housing Act.

(b) Religious beliefs -

(1) An applicant for a construction permit for a dwelling unit or one-room schoolhouse utilized by a member or members of a recognized religious sect may file an application with a code administrator to be exempted from an electrical provision of the Uniform Construction Code which conflicts with the applicant's religious beliefs. The application shall state the manner in which the provision conflicts with the applicant's religious beliefs and shall include an affidavit by the applicant stating that:

   (i) the applicant is a member of a recognized religious sect;

   (ii) the religious sect has established tenets or teachings which conflict with an electrical provision of the Uniform Construction Code;

   (iii) the applicant adheres to the established tenets or teachings of the sect;

   (iv) in the case of a dwelling unit, the dwelling unit will be used solely as a residence for the applicant and the applicant's household; and

   (v) in the case of a one-room schoolhouse, the one-room schoolhouse will be used solely by members of the religious sect.

(2) A code administrator shall grant an application for an exemption if made in accordance with paragraph (1).

(3) If an applicant receives an exemption for any building under this subsection and the applicant subsequently sells or leases the building, the applicant shall bring the building into compliance with the provision of the Uniform Construction Code from which it was exempted under this subsection prior to the sale or lease of the building unless the prospective subsequent owner or lessee files an affidavit in compliance with paragraph (1)(i) through (iv).

(c) Natural cut trees - Section 804.1.1 (relating to natural cut trees) of the International Fire Code (2003) and any successor provision is excluded from this act. A municipality that elects to adopt an ordinance for the administration and enforcement of this act may, by ordinance, restrict the placement of natural cut trees in an occupancy group. The ordinance restricting the placement shall not be subject to section 503(b) through (k).

§ 7210.902. Applicability to historic buildings, structures and sites.

(a) The provisions of the 1999 BOCA National Building Code, Fourteenth Edition, relating to the construction, repair, alteration, addition, restoration and movement of structures shall not apply to existing buildings and structures, or new buildings and structures not intended for residential use on historic sites, that are identified and classified by the Federal, State or local government authority as historic buildings or sites where such buildings and structures are judged by the code official to be safe and in the interest of public health, safety and welfare.

(b) UNCERTIFIED BUILDINGS UNDER DEPARTMENT'S JURISDICTION.-- Subject to subsection (d), all of the following apply to a building subject to the jurisdiction of the department:

(1) The department shall issue a certificate of occupancy to an uncertified building if that building meets the requirements of this subsection, unless the department deems the building to be unsafe because of inadequate means of egress, inadequate light and ventilation, fire hazards or other dangers to human life or to public welfare.
(2) An uncertified building shall comply with the following:

(i) Maximum story height, minimum allowable construction type based on floor area, vertical opening and shaft protection, means of egress requirements of the International Building Code pertaining to minimum number of exits, maximum travel distances to exits, means of egress illumination, minimum egress widths and heights for exit doors, exit stairs, exit ramps and exit corridors. Waivers shall be as follows:

(A) The department may waive requirements for minimum egress widths and heights for exits, exit access doors, exit ramps and exit corridors if the department determines that any nonconforming openings provide sufficient width and height for building occupants to pass through or egress the building.

(B) The department may waive any requirements under this subparagraph if:

(I) the department determines a requirement to be technically infeasible; or

(II) the building owner demonstrates that the building met the applicable egress requirements which existed under the act of April 27, 1927 (P.L. 465, No. 299), referred to as the Fire and Panic Act.

(C) A waiver shall be documented on the certificate of occupancy.

(ii) Fire safety requirements of the International Building Code with respect to fire alarms, fire extinguishers, heat and smoke detectors, automatic sprinkler systems and occupancy and incidental use separations. If the code requires that a building have automatic sprinkler systems, the only buildings required to install automatic sprinkler systems shall be those buildings classified in use groups E (educational), H (high-hazard), I (institutional), R-1 or R-2 (residential) and those buildings which have occupied floors more than 75 feet above lowest level of fire department access. Buildings in use groups R-1 and R-2 which do not have occupied floors more than 75 feet above lowest level of fire department access may, instead of installing automatic sprinkler systems, install hard-wired interconnected heat and smoke detectors located in all lobbies, corridors, equipment rooms, storage rooms and other spaces that are not normally occupied. If construction began on a building prior to May 19, 1984, there is no requirement for the installation of automatic sprinkler systems under this subparagraph. If construction of a building began after May 18, 1984, automatic sprinkler installation required under this subparagraph shall be completed within five years of the effective date of this subsection, or an occupancy permit issued under this subsection shall be invalid.

Waivers shall be as follows:

(A) The department may waive any requirements under this subparagraph if:

(I) the department determines a requirement to be technically infeasible; or

(II) the building owner demonstrates that the building met the applicable fire safety requirements which existed under the Fire and Panic Act.

(B) A waiver shall be documented on the certificate of occupancy.

(iii) Accessibility requirements as follows:

(A) If construction of a building began before September 1, 1965, no accessibility requirements shall be imposed.

(B) If construction of a building began after August 31, 1965, and before February 18, 1989, and if the building was subject to the requirements of the former act of September 1, 1965 (P.L. 459, No. 235), entitled "An act requiring that certain buildings and facilities adhere to certain principles, standards and specifications to make the same accessible to and usable by persons with physical handicaps, and providing for enforcement," it shall have:

(I) at least one accessible entrance;

(II) an accessible route from the accessible entrance to any public spaces on the same level as the accessible entrance; and

(III) if toilet rooms are provided, at least one accessible toilet room for each sex or a unisex toilet room, complying with the accessibility requirements of the International Building Code.
(C) If construction of the building began after February 17, 1989, all accessibility requirements of the International Building Code shall be met.

(3) Structural requirements shall not be imposed unless the department determines that the building or a portion of the building has defects which are dangerous as defined in the International Existing Building Code. The department may impose only those requirements minimally necessary to remove any danger to the building’s occupants.

(4) A building owner may file an application for a variance from this subsection concerning accessibility with the advisory board under section 106. A building owner may file an application for a variance from this subsection concerning other standards. The application must be filed with the Industrial Board if any of the following apply:

(i) The building is located in a municipality where the department has jurisdiction.

(ii) The building is a State-owned building. As used in this subparagraph, the term "State-owned building" means a building owned or constructed for Commonwealth entities consisting of the General Assembly, the Unified Judicial System, the Pennsylvania Higher Education Assistance Agency, an executive agency, an independent agency, and a State-affiliated entity or State-related institution, as defined in 62 Pa.C.S. § 103 (relating to definitions).

(5) A building subject to this subsection shall be permitted to maintain its current occupancy as long as the owner demonstrates reasonable efforts to comply with this subsection.

(6) An uncertified building which was built before April 27, 1927, shall be deemed a certified building for purposes of this act.

(c) UNCERTIFIED BUILDINGS OVER WHICH THE DEPARTMENT DOES NOT HAVE JURISDICTION.--

(1) A construction code official shall issue a certificate of occupancy to an uncertified building if it meets the requirements of the latest version of the International Existing Building Code or Chapter 34 of the International Building Code, and the construction code official shall utilize the code for the municipality which, in his professional judgment, he deems to best apply.

(2) A construction code official may deny the issuance of a certificate of occupancy if the official deems that a building is unsafe because of inadequate means of egress, inadequate lighting and ventilation, fire hazards or other dangers to human life or to public welfare.

(3) A municipality subject to this subsection may utilize the standards of subsection (b) for the issuance of certificates of occupancy to uncertified buildings by adopting an ordinance adopting the standards of issuance pursuant to the procedures delineated in section 503

(d) APPLICABILITY OF UNIFORM CONSTRUCTION CODE.-- Nothing in subsection (b) shall be construed as to affect applicability of Chapter 3 if a building is subject to renovation, additions, alterations or a change in use or occupancy.

§ 7210.903. Penalties.

(a) Violation of act. -

(1) Any individual, firm or corporation that violates any provision of this act commits a summary offense and shall, upon conviction, be sentenced to pay a fine of not more than $1,000 and costs.

(2) Each day that a violation of this act continues shall be considered a separate violation.

(b) Disposition of penalties. - The amount of the penalty shall be forwarded to the entity with enforcement jurisdiction.

§ 7210.1101. Savings.

This act shall not repeal or in any way affect:

Sections 1, 3.3, 3.4, 3.5, 3.6(f)(1)(i), (f.1) and (g), 10.1, 13, 14 and 15 of the act of April 27, 1927 (P.L.465, No.299), referred to as the Fire and Panic Act.

§ 7210.2203-A of the act of April 9, 1929 (P.L.177, No.175), known as The Administrative Code of 1929.
Act of May 2, 1929 (P.L.1513, No.451), referred to as the Boiler Regulation Law.

Act of August 24, 1951 (P.L.1304, No.315), known as the Local Health Administration Law, insofar as it applies to counties of the first class and of the second class, and rules and regulations adopted by counties of the first class and of the second class under the act. Any construction standard adopted after October 31, 1996, by counties of the first class and of the second class under the authority of the Local Health Administration Law shall comply with Chapters 3 and 5 of this act.

Act of December 27, 1951 (P.L.1793, No.475), referred to as the Liquefied Petroleum Gas Act.

Act of October 27, 1955 (P.L.744, No.222), known as the Pennsylvania Human Relations Act, and regulations promulgated under the act.

Act of January 24, 1966 (1965 P.L.1535, No.537), known as the Pennsylvania Sewage Facilities Act, and regulations promulgated under the act.


Act of October 4, 1978 (P.L.851, No.166), known as the Flood Plain Management Act, and regulations and ordinances promulgated under the act.

Act of July 19, 1979 (P.L.130, No.48), known as the Health Care Facilities Act.


§ 7210.1102. Repeals.

(a) Absolute. - The following acts and parts of acts are repealed:

Sections 2, 3, 3.1, 3.2, 3.6(a), (b), (c), (d), (e), (f)(1)(ii), (iii) and (2), 4, 4.1, 4.2, 5, 6, 7, 8, 9, 10, 11, 12 and 15.1 of the act of April 27, 1927 (P.L.465, No.299), referred to as the Fire and Panic Act.

Act of May 2, 1929 (P.L.1518, No.452), referred to as the Elevator Regulation Law.

Act of September 1, 1965 (P.L.459, No.235), entitled, as amended, “An act requiring that certain buildings and facilities adhere to certain principles, standards and specifications to make the same accessible to and usable by persons with physical handicaps, and providing for enforcement.”

Act of July 9, 1976 (P.L.919, No.170), entitled “An act providing for the approval or disapproval of applications for a permit relating to the construction or maintenance of improvements to real estate.”


Act of December 17, 1990 (P.L.742, No.185), entitled “An act providing for restrooms in facilities where the public congregates; and requiring that restroom facilities be provided for women on an equitable basis.”


(b) General. - All other acts and parts of acts are repealed insofar as they are inconsistent with this act.

§ 7210.1103. Effective date.

This act shall take effect as follows:

(1) Sections 104(d)(3) and (4), 301, 302, 701 and this section shall take effect immediately.

(2) The remainder of this act shall take effect 90 days following publication of notice in the Pennsylvania Bulletin that the regulations required by this act have been finally adopted.
R156-56-101. Title.

These rules are known as the "Utah Uniform Building Standard Act Rules".

In addition to the definitions in Title 58, Chapters 1, 55 and 56, as used in Title 58, Chapter 56 or these rules:

(1) "Building permit" means, for the purpose of determining the building permit surcharge under Subsection 58-56-9(4), a warrant, license or authorization to build or construct a building or structure or any part thereof.

(2) "Building permit fee" means, for the purpose of determining the building permit surcharge under Subsection 58-56-9(4), fees assessed by an agency of the state or political subdivision of the state for the issuance of permits for construction, alteration, remodeling, and repair and installation including building, electrical, mechanical and plumbing components.

(3) "Employed by a local regulator, state regulator or compliance agency" means, with respect to Subsection 58-56-9(1), the hiring of services of a qualified inspector whether by an employer/employee relationship, an independent contractor relationship, a fee-for-service relationship or any other lawful arrangement under which the regulating agency purchases the services of a qualified inspector.

(4) "Inspector" means a person employed by a local regulator, state regulator or compliance agency for the purpose of inspecting building, electrical, plumbing or mechanical construction, alteration, remodeling, repair or installation in accordance with the codes adopted under these rules and taking appropriate action based upon the findings made during inspection.

(5) "Refuses to establish a method of appeal" means with respect to Subsection 58-56-8(3), that a compliance agency does not in fact adopt a formal written method of appealing uniform building standard matters in accordance with generally recognized standards of due process; or, that the compliance agency does not convene an appeals board and render a decision in the matter within ninety days from the date on which the appeal is properly filed with the compliance agency.

(6) "Uniform Building Standards" means the codes identified in Section R156-56-701 and as amended under these rules.

(7) "Unprofessional conduct" as defined in Title 58, Chapter 1 is further defined, in accordance with Subsection 58-1-203(5), in Section R156-56-502.

R156-56-103. Authority.

These rules are adopted by the division under the authority of Subsection 58-1-106(1) to enable the division to administer Title 58, Chapter 56.


The organization of this rule and its relationship to Rule R156-1 is as described in Section R156-1-107.
R156-56-105. Board of Appeals.

If the commission is required to act as an appeals board in accordance with the provisions of Subsection 58-56-8(3), the following shall regulate the convening and conduct of the special appeals board:

(1) If a compliance agency refuses to establish a method of appeal regarding a uniform building standard issue, the appealing party may petition the commission to act as the board of appeals.

(2) The person making the appeal shall file the request to convene the commission as an appeals board in accordance with the requirements for a request for agency action, as set forth in Subsection 63-46b-3(3)(a) and Section R151-46b-7. A request by other means shall not be considered. Any request received by the commission or division by any other means shall be returned to the appellant with appropriate instructions.

(3) A copy of the final written decision of the compliance agency interpreting or applying a code which is the subject of the dispute shall be submitted as an attachment to the request. If the person making the appeal requests, but does not timely receive a final written decision, the person shall submit an affidavit to this effect in lieu of the final written decision.

(4) The request shall be filed with the division no later than 30 days following the issuance of the disputed written decision by the compliance agency.

(5) The compliance agency shall file a written response to the request not later than 20 days after the filing of the request. The request and response shall be provided to the commission in advance of any hearing in order to properly frame the disputed issues.

(6) Except with regard to the time period specified in Subsection (7), the time periods specified in this section may, upon a showing of good cause, be modified by the presiding officer conducting the proceeding.

(7) The commission shall convene as an appeals board within 45 days after a request is properly filed.

(8) Upon the convening of the commission as an appeals board, the board members shall review the issue to be considered to determine if a member of the board has a conflict of interest which would preclude the member from fairly hearing and deciding the issue. If it is determined that a conflict does exist, the member shall be excused from participating in the proceedings.

(9) The hearing shall be a formal hearing held in accordance with the Utah Administrative Procedures Act, Title 63, Chapter 46b.

(10) Decisions relating to the application and interpretation of the code made by a compliance agency board of appeals shall be binding for the specific individual case and shall not require commission approval.
R156-56-106. Fees.

In accordance with Subsection 58-56-9(4), on April 30, July 31, October 31 and January 31 of each year, each agency of the state and each political subdivision of the state which assesses a building permit fee shall file with the division a report of building fees and surcharge for the immediately preceding calendar quarter; and, shall remit 80% of the amount of the surcharge to have been assessed to the division.

R156-56-201. Building Inspector Licensing Board.

In accordance with Section 58-56-8.5, the board shall be as follows:

(1) one member licensed as a Combination Inspector;

(2) one member licensed as an Inspector who is qualified in the electrical code;

(3) one member licensed as an Inspector who is qualified in the plumbing code;

(4) one member licensed as an Inspector who is qualified in the mechanical code; and

(5) one member shall be from the general public.


(1) There is created in accordance with Subsection 58-1-203(6) and 58-56-5(10)(e), the following committees as advisory peer committees to the Uniform Building Codes Commission:

(a) the Education Advisory Committee consisting of seven members;

(b) the Plumbing and Health Advisory Committee consisting of seven members;

(c) the Structural Advisory Committee consisting of seven members;

(d) the Architectural Advisory Committee consisting of seven members;

(e) the Fire Protection Advisory Committee consisting of five members;

(i) This committee shall join together with the Fire Advisory and Code Analysis Committee of the Utah Fire Prevention Board to form the Unified Code Analysis Council.

(ii) The Unified Code Analysis Council shall meet as directed by the Utah Fire Prevention Board or as directed by the Uniform Building Code Commission or as needed to review fire prevention and building code issues that require definitive and specific analysis.
(iii) The Unified Code Analysis Council shall select one of its members to act in the position of chair and another to act as vice chair. The chair and vice chair shall serve for one year terms on a calendar year basis. Elections for chair and vice chair shall occur at the meeting conducted in the last quarter of the calendar year.

(iv) The chair or vice chair shall report to the Utah Fire Prevention Board or Uniform Building Code Commission recommendations of the council with regard to the review of fire and building codes; and

(f) the Mechanical Advisory Committee consisting of seven members.

(2) The committees shall be appointed and serve in accordance with Section R156-1-205. The membership of each committee shall be made up of individuals who have direct knowledge or involvement in the area of code involved in the title of that committee.

(3) The duties and responsibilities of the committees shall include:

(a) review of requests for amendments to the adopted codes as assigned to each committee by the division with the collaboration of the commission;

(b) submission of recommendations concerning the requests for amendment; and

(c) the Education Advisory Committee shall review and make recommendations regarding funding requests which are submitted, and review and make recommendations regarding budget, revenue and expenses of the education fund established pursuant to Subsection 58-56-9(4).

R156-56-301. Reserved.

Reserved.

R156-56-302. Licensure of Inspectors.

In accordance with Subsection 58-56-9(1), the licensee classifications, scope of work, qualifications for licensure, and application for license are established as follows:

(1) License Classifications. Each inspector required to be licensed under Subsection 58-56-9(1) shall qualify for licensure and be licensed by the division in one of the following classifications:

(a) Combination Inspector; or

(b) Limited Inspector.

(2) Scope of Work. The scope of work permitted under each inspector classification is as follows:

(a) Combination Inspector.
(i) Inspect the components of any building, structure or work for which a standard is provided in the specific edition of the codes adopted under these rules or amendments to these codes as included in these rules.

(ii) Determine whether the construction, alteration, remodeling, repair or installation of all components of any building, structure or work is in compliance with the adopted codes.

(iii) After determination of compliance or noncompliance with the adopted codes take appropriate action as is provided in the aforesaid codes.

(b) Limited Inspector.

(i) A Limited Inspector may only conduct activities under Subsections (ii), (iii) or (iv) for which the Limited Inspector has maintained current certificates under the adopted codes as provided under Subsections R156-56-302(3)(b) and R156-56-302(2)(c)(ii).

(ii) Subject to the limitations of Subsection (i), inspect the components of any building, structure or work for which a standard is provided in the specific edition of the codes adopted under these rules or amendments to these codes as included in these rules.

(iii) Subject to the limitations under Subsection (i), determine whether the construction, alteration, remodeling, repair or installation of components of any building, structure or work is in compliance with the adopted codes.

(iv) Subject to the limitations under Subsection (i), after determination of compliance or noncompliance with the adopted codes, take appropriate action as is provided in the adopted codes.

(3) Qualifications for Licensure. The qualifications for licensure for each inspector classification are as follows:

(a) Combination Inspector.

Has passed the examination for and maintained as current the following national certifications for codes adopted under these rules:

(i) the "Combination Inspector Certification" issued by the International Code Council; or

(ii) all of the following certifications:

(A) the "Building Inspector Certification" issued by the International Code Council or both the "Commercial Building Inspector Certification" and the "Residential Building Inspector Certification" issued by the International Code Council;

(B) the "Electrical Inspector Certification" issued by the International Code Council or the "General Electrical Certification" issued by the International Association of Electrical Inspectors, or both the "Commercial Electrical Inspector Certification" and
the "Residential Electrical Inspector Certification" issued by the International Code Council;

(C) the "Plumbing Inspector Certification" issued by the International Code Council, or both the "Commercial Plumbing Inspector Certification" and the "Residential Plumbing Inspector Certification" issued by the International Code Council; and

(D) the "Mechanical Inspector Certification" issued by the International Code Council or both the "Commercial Mechanical Inspector Certification" and the "Residential Mechanical Inspector Certification" issued by the International Code Council.

(b) Limited Inspector.

Has passed the examination for and maintained as current one or more of the following national certifications for codes adopted under these rules:

(i) the "Building Inspector Certification" issued by the International Code Council;

(ii) the "Electrical Inspector Certification" issued by the International Code Council or the "General Electrical Certification" issued by the International Association of Electrical Inspectors;

(iii) the "Plumbing Inspector Certification" issued by the International Code Council;

(iv) the "Mechanical Inspector Certification" issued by the International Code Council;

(v) the "Residential Combination Inspector Certification" issued by the International Code Council;

(vi) the "Commercial Combination Certification" issued by the International Code Council;

(vii) the "Commercial Building Inspector Certification" issued by the International Code Council;

(viii) the "Commercial Electrical Inspector Certification" issued by the International Code Council;

(ix) the "Commercial Plumbing Inspector Certification" issued by the International Code Council;

(x) the "Commercial Mechanical Inspector Certification issued by the International Code Council;

(xi) the "Residential Building Inspector Certification" issued by the International Code Council;

(xii) the "Residential Electrical Inspector Certification" issued by the International Code Council;
(xiii) the "Residential Plumbing Inspector Certification" issued by the International Code Council;

(xiv) the "Residential Mechanical Inspector Certification" issued by the International Code Council;

(xv) any other special or otherwise limited inspector certifications used by the International Code Council which certifications cover a part of the codes adopted under these rules including but not limited to each of the following: Reinforced Concrete Special Inspector, Prestressed Concrete Special Inspector, Residential Energy Inspector, Commercial Energy Inspector; or

(xvi) any combination certification which is based upon a combination of one or more of the above listed certifications.

(4) Application for License.

(a) An applicant for licensure shall:

(i) submit an application in a form prescribed by the division; and

(ii) pay a fee determined by the department pursuant to Section 63-38-3.2.

(5) Code transition provisions.

(a) If an inspector or applicant obtains a new, renewal or recertification or replacement national certificate after a new code or code edition is adopted, the inspector or applicant is required to obtain that certification under the currently adopted code or code edition.

(b) After a new code or new code edition is adopted under these rules, the inspector is required to re-certify their national certification to the new code or code edition at the next available renewal cycle of the national certification.

(c) If a licensed inspector fails to obtain the national certification as required in Subsection (a) or (b), their authority to inspect for the area covered by the national certification automatically expires at the expiration date of the national certification that was not obtained as required.

(d) If an inspector recertifies a national certificate on a newer edition of the codes adopted before that newer edition is adopted under these rules, such recertification shall be considered as a current national certification as required by these rules.

(e) If an inspector complies with these transition provisions, the inspector shall be considered to have a current national certification as required by these rules.

(1) In accordance with Subsection 58-1-308(1), the renewal date for the two-year cycle applicable to licenses under Title 58, Chapter 56 is established by rule in Section R156-1-308.

(2) Renewal procedures shall be in accordance with Section R156-1-308.

R156-56-501. Reserved.

Reserved.


"Unprofessional conduct" includes:

(1) knowingly failing to inspect or issue correction notices for code violations which when left uncorrected would constitute a hazard to the public health and safety and knowingly failing to require that correction notices are complied with;

(2) the use of alcohol or the illegal use of drugs while performing duties as a building inspector or at any time to the extent that the inspector is physically or mentally impaired and unable to effectively perform the duties of an inspector;

(3) gross negligence in the performance of official duties as an inspector;

(4) the personal use of information or knowingly revealing information to unauthorized persons when that information has been obtained by the inspector as a result of their employment, work, or position as an inspector;

(5) unlawful acts or acts which are clearly unethical under generally recognized standards of conduct of an inspector;

(6) engaging in fraud or knowingly misrepresenting a fact relating to the performance of duties and responsibilities as an inspector;

(7) knowingly failing to require that all plans, specifications, drawings, documents and reports be stamped by architects, professional engineers or both as established by law;

(8) knowingly failing to report to the Division any act or omission of a licensee under Title 58, Chapter 55, which when left uncorrected constitutes a hazard to the public health and safety;

(9) knowingly failing to report to the Division unlicensed practice by persons performing services who are required by law to be licensed under Title 58, Chapter 55;

(10) approval of work which materially varies from approved documents that have been stamped by an architect, professional engineer or both unless authorized by the licensed architect, professional engineer or both; and
(11) failing to produce verification of current licensure and current certifications for the codes adopted under these rules upon the request of the Division, any compliance agency, or any contractor or property owner whose work is being inspected.

**R156-56-601. Modular Unit Construction and Set-up.**

Modular construction and set-up shall be as set forth in accordance with the following:

(1) Construction shall be in accordance with the building standards accepted by the state pursuant to Section 58-56-4.

(2) The inspection of the construction, modification of or set-up of a modular unit shall be the responsibility of the local regulator; however, nothing in these rules shall preclude the local regulator from entering into an agreement with another qualified person for the inspection of the unit(s) in the manufacturing facility.

**R156-56-602. Factory Built Housing Dealer Bonds.**

(1) Pursuant to the provisions of Subsection 58-56-16(2)(c), a factory built housing dealer shall provide a registration bond issued by a surety acceptable to the Division in the amount of $50,000. An acceptable surety is one that is listed in the Department of Treasury, Fiscal Service, Circular 570, current revision, entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies".

(2) The coverage of the registration bond shall include losses which may occur as the result of the factory built housing dealer's violation of the unprofessional or unlawful provisions contained in Title 58, Chapters 1 and 56.

**R156-56-603. Factory Built Housing Dispute Resolution Program.**

(1) Pursuant to Subsection 58-56-15(1)(f)(i), the dispute resolution program is defined and clarified as follows:

(a) Persons having disputes regarding manufactured housing issues may file a complaint with the Division.

(b) The Division shall investigate such complaints and as part of the investigation may take any of the following actions:

(i) The Division may negotiate with the parties involved for informal resolution of such complaints.

(ii) The Division may take any informal or formal action allowed by any applicable statute including, but not limited to:

(A) pursuing disciplinary proceedings under Section 58-1-401;
(B) pursing civil sanctions under Subsection 58-56-15(2); and

(C) referring matters to appropriate criminal prosecuting agencies and cooperating or assisting with the investigation and prosecution of cases by such agencies.

(c) In addition, persons having disputes regarding manufactured housing issues may also institute civil action.

R156-56-604. Factory Built Housing Continuing Education Requirements.

(1) Pursuant to Subsection 58-56-15(1)(f)(ii), continuing education required for manufactured housing installation contractors is defined and clarified as follows:

(a) the continuing education required by Subsection 58-55-501(21), which is effective July 1, 2005.


(1) In accordance with Subsection 58-56-4(3), and subject to the limitations contained in Subsection (6), (7), and (8), the following codes are hereby incorporated by reference and adopted as the construction standards to be applied to building construction, alteration, remodeling and repair and in the regulation of building construction, alteration, remodeling and repair in the state:


(b) the 2005 edition of the National Electrical Code (NEC) promulgated by the National Fire Protection Association, to become effective January 1, 2006;

(c) the 2003 edition of the International Plumbing Code (IPC) promulgated by the International Code Council and amendments adopted under these rules in Section R156-56-707 shall become effective on January 1, 2004;

(d) the 2003 edition of the International Mechanical Code (IMC) together with all applicable standards set forth in the 2003 International Fuel Gas Code (IFGC) (formerly included as part of the IMC) and amendments adopted under these rules in Section R156-56-708 shall become effective on January 1, 2004;

(e) subject to the provisions of Subsection (4), the Federal Manufactured Housing Construction and Safety Standards Act (HUD Code) as promulgated by the Department of Housing and Urban Development and published in the Federal Register as set forth in 24 CFR parts 3280 and 3282 as revised April 1, 1990; and
subject to the provisions of Subsection (4), the 1994 edition of NCSBCS A225.1 Manufactured Home Installations promulgated by the National Conference of States on Building Codes and Standards (NCSBCS).

(2) In accordance with Subsection 58-56-4(4), and subject to the limitations contained in Subsection 58-56-4(5), the following codes or standards are hereby incorporated by reference and approved for use and adoption by a compliance agency as the construction standards which may be applied to existing buildings in the regulation of building alteration, remodeling, repair, removal and rehabilitation in the state:

(a) the 1997 edition of the Uniform Code for the Abatement of Dangerous Buildings (UCADB) promulgated by the International Code Council;

(b) the 1997 edition of the Uniform Code for Building Conservation (UCBC) promulgated by the International Code Council;

(c) Guidelines for the Seismic Retrofit of Existing Buildings (GSREB) promulgated by the International Code Council;

(d) Guidelines for the Rehabilitation of Existing Buildings (GREB) promulgated by the International Code Council;


(3) Amendments adopted by rule to prior editions of the Uniform Building Standards shall remain in effect until specifically amended or repealed.

(4) In accordance with Subsection 58-56-4(2), the following is hereby adopted as the installation standard for manufactured housing:

(a) The manufacturer's installation instruction for the model being installed;

(b) The NCSBCS/ANSI 225.1-1994, Manufactured Home Installations, promulgated by the National Conference of States on Building Codes and Standards;

(c) The manufacturer, dealer or homeowner shall be permitted to design for unusual installation of a manufactured home not provided for in the manufacturer's standard installation instruction or NCSBCS/ANSI 225.1, Manufactured Home Installations, provided the design is approved in writing by a professional engineer or architect licensed in Utah; and

(d) Guidelines for Manufactured Housing Installation as promulgated by the International Code Council may be used as a reference guide.

(5) Pursuant to the Federal Manufactured Home Construction and Safety Standards Section 604(d), a manufactured home may be installed in the state of Utah which does not meet the local snow load requirements as specified in Subsection R156-56-704; however all such homes which fail to meet the standards of Subsection R156-56-704 shall have a protective structure built over the home which meets the
International Building Code and the snow load requirements under Subsection R156-56-704.

(6) To the extent that the building codes adopted under Subsection (1) establish local administrative functions or establish a method of appeal which pursuant to Section 58-56-8 are designated to be established by the compliance agency, such provisions are not included in the codes adopted hereunder but authority over such provisions are reserved to the compliance agency to establish such provisions.

(7) To the extent that the building codes adopted under Subsection (1) establish provisions, standards or references to other codes which by state statutes are designated to be established or administered by other state agencies or local city, town or county jurisdictions, such provisions are not included in the codes adopted herein but authority over such provisions are reserved to the agency or local government having authority over such provisions. Provisions excluded under this Subsection include but are not limited to:

(a) the International Property Maintenance Code;

(b) the International Private Sewage Disposal Code, authority over which would be reserved to the Department of Health and the Department of Environmental Quality;

(c) the International Fire Code which pursuant to Section 58-3-7 authority is reserved to the Utah Fire Prevention Board; and

(d) day care provisions which are in conflict with the Child Care Licensing Act, authority over which is designated to the Utah Department of Health.

(8) To the extent that the codes adopted under Subsection (1) establish provisions that exceed the authority granted to the Division, under the Utah Uniform Building Standards Act, to adopt codes or amendments to such codes by rulemaking procedures, such provisions, to the extent such authority is exceeded, are not included in the codes adopted.


(1) In the event that the director of the division rules contrary to the recommendation of the commission with respect to the provisions of Subsection 58-56-7(8), the director shall present his action and the basis for that action at the commission's next meeting or at a special meeting called by either the division or the commission.

(2) The commission may override the division's action by a two-thirds vote which equals eight votes.

(3) In the event of a vacancy on the commission, a vote of a minimum of two-thirds of the existing commissioners must be obtained to override the division.

In accordance with Subsection 58-56-7(1), the procedure and manner under which requests for amendments to codes shall be filed with the division and recommended or declined for adoption are as follows:

(1) All requests for amendments to any of the uniform building standards shall be submitted to the division on forms specifically prepared by the division for that purpose.

(2) The processing of requests for code amendments shall be in accordance with division policies and procedures.

**R156-56-704. Statewide Amendments to the IBC.**

The following are adopted as amendments to the IBC to be applicable statewide:

(1) All references to the International Electrical Code are deleted and replaced with the National Electrical Code adopted under Subsection R156-56-701(1)(b).

(2) All references to the International Existing Building Code are deleted and replaced with the codes approved under Subsection R156-56-701(2).

(3) Section 101.4.1 is deleted and replaced with the following:

101.4.1 Electrical. The provisions of the National Electrical Code (NEC) shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

(4) In Section 109, a new section is added as follows:

109.3.5 Weather-resistive barrier and flashing. An inspection shall be made of the weather-resistive barrier as required by Section 1403.2 and flashing as required by Section 1405.3 to prevent water from entering the weather-resistant exterior wall envelope.

The remaining sections will be renumbered as follows:

109.3.6 Lath or gypsum board inspection
109.3.7 Fire-resistant penetrations
109.3.8 Energy efficiency inspections
109.3.9 Other inspections
109.3.10 Special inspections
109.3.11 Final inspection.

(5) Section 114.1 is deleted and replaced with the following:
114.1 Authority. Whenever the building official finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or other pertinent laws or ordinances or dangerous or unsafe, the building official is authorized to stop work.

(6) In Section 202, the following definition is added:

ASSISTED LIVING FACILITY. See Section 308.1.1.

(7) Section 305.2 is deleted and replaced with the following:

305.2 Day care. The building or structure, or portion thereof, for educational, supervision, child day care centers, or personal care services of more than four children shall be classified as a Group E occupancy. See Section 419 for special requirements for Group E child day care centers.

Exception: Areas used for child day care purposes with a Residential Certificate, Family License or Family Group License may be located in a Group R-2 or R-3 occupancy as provided in Section 310.1 or shall comply with the International Residential Code in accordance with Section 101.2.

Child day care centers providing care for more than 100 children 2 1/2 years or less of age shall be classified as Group I-4.

(8) In Section 308 the following definitions are added:

308.1.1 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

TYPE 1 ASSISTED LIVING FACILITY. A residential facility that provides a protected living arrangement for ambulatory, non-restrained persons who are capable of achieving mobility sufficient to exit the facility without the assistance of another person.

TYPE 2 ASSISTED LIVING FACILITY. A residential facility that provides an array of coordinated supportive personal and health care services to residents who meet the definition of semi-independent.

SEMI-INDEPENDENT. A person who is:

A. Physically disabled but able to direct his or her own care; or

B. Cognitively impaired or physically disabled but able to evacuate from the facility with the physical assistance of one person.

(9) Section 308.2 is deleted and replaced with the following:

308.2 Group I-1. This occupancy shall include buildings, structures, or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency
situation without physical assistance from staff. This group shall include, but not be limited to, the following: residential board and care facilities, type 1 assisted living facilities, half-way houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers and convalescent facilities. A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as a Group R-4.

(10) Section 308.3 is deleted and replaced with the following:

308.3 Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than three persons who are not capable of self-preservation. This group shall include, but not be limited to the following: hospitals, nursing homes (both intermediate care facilities and skilled nursing facilities), mental hospitals, detoxification facilities, ambulatory surgical centers with two or more operating rooms where care is less than 24 hours, outpatient medical care facilities for ambulatory patients (accommodating more than five such patients in each tenant space) which may render the patient incapable of unassisted self-preservation, and type 2 assisted living facilities. Type 2 assisted living facilities with five or fewer persons shall be classified as a Group R-4. Type 2 assisted living facilities as defined in 308.1.1 with at least six and not more than sixteen residents shall be classified as a Group I-1 facility.

(11) Section 308.3.1 is deleted and replaced with the following:

308.3.1 Child care facility. A child care facility that provides care on a 24 hour basis to more than four children 2 1/2 years of age or less shall be classified as Group I-2.

(12) Section 308.5 is deleted and replaced with the following:

308.5 Group I-4, day care facilities. This group shall include buildings and structures occupied by persons of any age who receive custodial care less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage, or adoption, and in a place other than the home of the person cared for. A facility such as the above with four or fewer persons shall be classified as an R-3 or shall comply with the International Residential Code in accordance with Section 101.2. Places of worship during religious functions and Group E child day care centers are not included.

(13) Section 308.5.2 is deleted and replaced with the following:

308.5.2 Child care facility. A facility that provides supervision and personal care on less than a 24 hour basis for more than 100 children 2 1/2 years of age or less shall be classified as Group I-4.

(14) Section 310.1 is deleted and replaced with the following:
310.1 Residential Group "R". Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classed as an Institutional Group I. Residential occupancies shall include the following:

R-1: Residential occupancies where the occupants are primarily transient in nature (less than 30 days) including: Boarding Houses (transient), Hotels (transient), and Motels (transient).

Exception: Boarding houses accommodating 10 persons or less shall be classified as a Residential Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

R-2: Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including: Apartment Houses, Boarding houses (not transient), Convents, Dormitories, Fraternities and Sororities, Monasteries, Vacation timeshare properties, Hotels (non transient), and Motels (non transient).

Exception: Boarding houses accommodating 10 persons or less shall be classified as a Residential Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

R-3: Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I and where buildings do not contain more than two dwelling units, as applicable in Section 101.2, or adult and child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours. Adult and child care facilities that are within a single family home are permitted to comply with the International Residential Code in accordance with Section 101.2. Areas used for day care purposes may be located in a residential dwelling unit under all of the following conditions:

1. Compliance with the Utah Administrative Code, R710-8, Day Care Rules, as enacted under the authority of the Utah Fire Prevention Board.

2. Use is approved by the State Department of Health, as enacted under the authority of the Utah Child Care Licensing Act, UCA, Sections 26-39-101 through 26-39-110, and in any of the following categories:
   b. Utah Administrative Code, R430-90, Licensed Family Child Care.

3. Compliance with all zoning regulations of the local regulator.

R-4: Residential occupancies shall include buildings arranged for occupancy as Residential Care/Assisted Living Facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code or shall comply with the International Residential Code in accordance with Section 101.2.
(15) A new Section 403.9.1 is added as follows:

403.9.1 Elevator lobby. Elevators on all floors shall open into elevator lobbies that are separated from the remainder of the building, including corridors and other means of egress by smoke partitions complying with Section 710. Elevator lobbies shall have at least one means of egress complying with Chapter 10 and other provisions within the code. Elevator lobbies shall be separated from a fire resistance rated corridor with fire partitions complying with Section 708 and shall have walls of not less than one-hour fire resistance rating and openings shall conform to Section 715.

Exceptions:

1. Separations are not required from a street floor elevator lobby.

2. In atria complying with the provisions of Section 404 elevator lobbies are not required.

(16) A new section 419 is added as follows:

Section 419 Group E Child Day Care Centers. Group E child day care centers shall comply with Section 419.

419.1 Location at grade. Group E child day care centers shall be located at the level of exit discharge.

Exception: Child day care spaces for children over the age of 24 months may be located on the second floor of buildings equipped with automatic fire protection throughout and an automatic fire alarm system.

419.2 Egress. All Group E child day care spaces with an occupant load of 10 or more shall have a second means of egress. If the second means of egress is not an exit door leading directly to the exterior, the room shall have an emergency escape and rescue window complying with Section 1025.

(17) In Section 707.14.1 Exception 4 is deleted and replaced with the following:

4. See Section 403.9.1 for high rise buildings.

(18) In Section (F)902, the definition for record drawings is deleted and replaced with the following:

(F)RECORD DRAWINGS. Drawings (“as builts”) that document all aspects of a fire protection system as installed.

(19) Section (F)903.2.7 is deleted and replaced with the following:

(F)903.2.7 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.
Exception:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) constructed in accordance with the International Residential Code For One- and Two-Family Dwellings.

2. Group R-4 fire areas not more than 4,500 gross square feet and not containing more than 16 residents, provided the building is equipped throughout with an approved fire alarm system that is interconnected and receives its primary power from the building wiring and a commercial power system.

(20) Section (F)903.3.7 is deleted and replaced with the following:

(F)903.3.7 Fire department connections. The location of fire department connections shall be approved by the code official.

(21) Section 905.5.3 is deleted and replaced with the following:

905.5.3 Class II system 1-inch hose. A minimum 1-inch (25.4 mm) hose shall be permitted to be used for hose stations in light-hazard occupancies where investigated and listed for this service and where approved by the code official.

(22) Section (F)907.2.10 is deleted and replaced with the following:

(F)907.2.10 Single- and multiple-station alarms. Listed single- and multiple-station smoke alarms shall be installed in accordance with the provision of this code and the household fire-warning equipment provision of NFPA 72. Listed single- and multiple-station carbon monoxide detectors shall comply with U.L. 2034 and shall be installed in accordance with the provisions of this code and NFPA 720.

(F)907.2.10.1 Smoke alarms. Single- or multiple-station smoke alarms shall be installed in the locations described in Sections (F)907.2.10.1.1 through (F)907.2.10.1.4.

(F)907.2.10.1.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.

2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.

3. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

(F)907.2.10.1.2 Groups R-2, R-3, R-4 and I-1. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1, regardless of occupant load at all of the following locations:
1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.

2. In each room used for sleeping purposes.

3. In each story within a dwelling unit, including basements and cellars but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

(F)907.2.10.1.3 Group I-1. Single- or multiple-station smoke alarms shall be installed and maintained in sleeping areas in occupancies in Group I-1. Single- or multiple-station smoke alarms shall not be required where the building is equipped throughout with an automatic fire detection system in accordance with Section (F)907.2.6.

(F)907.2.10.2 Carbon monoxide alarms. Carbon monoxide alarms shall be installed on each habitable level of a dwelling unit or sleeping unit in Groups R-2, R-3, R-4 and I-1 equipped with fuel burning appliances.

(F)907.2.10.3. Power source. In new construction, required alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

(F)907.2.10.4 Interconnection. Where more than one alarm is required to be installed with an individual dwelling unit in Group R-2, R-3, or R-4, or within an individual sleeping unit in Group R-1, the alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. Approved combination smoke and carbon-monoxide detectors shall be permitted.

(F)907.2.10.5 Acceptance testing. When the installation of the alarm devices is complete, each detector and interconnecting wiring for multiple-station alarm devices shall be tested in accordance with the household fire warning equipment provisions of NFPA 72 and NFPA 720, as applicable.

(23) In Section 1008.1.8.3, a new subparagraph (5) is added as follows:

(5) Doors in Group I-1 and I-2 occupancies, where the clinical needs of the patients require specialized security measures for their safety, approved access controlled egress may be installed when all the following are met:

5.1 The controlled egress doors shall unlock upon activation of the automatic fire sprinkler system or automatic fire detection system.
5.2 The facility staff can unlock the controlled egress doors by either sensor or keypad.

5.3 The controlled egress doors shall unlock upon loss of power.

(24) Section 1009.3, Exception #5 is deleted and replaced with the following:

5. In occupancies in Group R-3, as applicable in Section 101.2, within dwelling units in occupancies in Group R-2, as applicable in Section 101.2, and in occupancies in Group U, which are accessory to an occupancy in Group R-3, as applicable in Section 101.2, the maximum riser height shall be 8 inches (203 mm) and the minimum tread depth shall be 9 inches (229 mm). The minimum winder tread depth at the walk line shall be 10 inches (254 mm), and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than 0.75 inch (19.1 mm) but not more than 1.25 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 10 inches (254 mm).

(25) Section 1009.11 Exception #4 is deleted and replaced with the following:

4. In occupancies in Group R-3, as applicable in Section 101.2 and in occupancies in Group U, which are accessory to an occupancy in Group R-3, as applicable in Section 101.2, handrails shall be provided on at least one side of stairways consisting of four or more risers.

(26) Section 1009.11.3 is amended to include the following exception at the end of the section:

Exception. Non-circular handrails serving an individual unit in a Group R-1, Group R-2 or Group R-3 occupancy shall be permitted to have a maximum cross sectional dimension of 3.25 inches (83 mm) measured 2 inches (51 mm) down from the top of the crown. Such handrail is required to have an indentation on both sides between 0.625 inch (16 mm) and 1.5 inches (38 mm) down from the top or crown of the cross section. The indentation shall be a minimum of 0.25 inch (6 mm) deep on each side and shall be at least 0.5 (13 mm) high. Edges within the handgrip shall have a minimum radius of 0.0625 inch (2 mm). The handrail surface shall be smooth with no cusps so as to avoid catching clothing or skin.

(27) In Section 1012.2 Exception 3 is added as follows:

3. For occupancies in Group R-3 and within individual dwelling units in occupancies in Group R-2, as applicable in Section 101.2, guards shall form a protective barrier not less than 36 inches (914 mm) in height.

(28) New sections 1109.7.1 and 1109.7.2 are added as follows:

1109.7.1 All platform (wheelchair) lifts shall be capable of independent operation without a key.

1109.7.2 Standby power shall be provided for platform lifts permitted to serve as part of the accessible means of egress.
(29) Section 1208.4 subparagraph 1 is deleted and replaced with the following:

1. The unit shall have a living room of not less than 165 square feet (15.3 m²) of floor area. An additional 100 square feet (9.3 m²) of floor area shall be provided for each occupant of such unit in excess of two.

(30) Section 1405.3 is deleted and replaced with the following:

1405.3 Flashing. Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect it to the exterior. Flashings shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projected flanges shall be installed on both sides and the ends of copings, under sills and continuously above projected trim. A flashing shall be installed at the intersection of the foundation to stucco, masonry, siding or brick veneer. The flashing shall be on an approved corrosion-resistant flashing with a 1/2" drip leg extending past exterior side of the foundation.

(31) Section 1604.5, footnote "c" is added to Table 1604.5 Classification of Buildings and Other Structures for Importance Factors:

<table>
<thead>
<tr>
<th>1604.5 Classification of Buildings and Other Structures for Importance Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. For determining &quot;W&quot; per sections 1616.4.1, 1617, 1617.5.1, or 1618.1, the Snow Factor $I_s$, may be taken as 1.0.</td>
</tr>
</tbody>
</table>

(32) In Section 1605.2.1, the formula shown as "$f_2 = 0.2$ for other roof configurations" is deleted and replaced with the following:

\[ f_2 = 0.20 + 0.025(A-5) \] for other configurations where roof snow load exceeds 30 psf

\[ f_2 = 0 \text{ for roof snow loads of 30 psf (}1.44\text{kN/m}^2\text{) or less.} \]

Where $A = \text{Elevation above sea level at the location of the structure (ft/1000)}$.

(33) In Section 1605.3.1 and section 1605.3.2, Exception number 2 in each section is deleted and replaced with the following:

Flat roof snow loads of 30 pounds per square foot (1.44 kNm²) or less need not be combined with seismic loads. Where flat roofs exceed 30 pounds per square foot (1.44 kNm²), the snow loads may be reduced in accordance with the following in load combinations including both snow and seismic loads.

\[ W_s = (0.20 + 0.025(A-5))P_r \]

Where

\[ W_s = \text{Weight of snow to be included, psf} \]

\[ A = \text{Elevation above sea level at the location of the structure (ft/1000)} \]
Pr = Design roof snow load, psf

(34) In Table 1607.1 number 6 is deleted and replaced with the following:

<table>
<thead>
<tr>
<th>TABLE 1607.1 NUMBER 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupancy or Use</td>
</tr>
<tr>
<td>6. Decks, except residential</td>
</tr>
<tr>
<td>6.1 Residential decks</td>
</tr>
</tbody>
</table>

(35) In Table 1607.1 number 27 is deleted and replaced with the following:

<table>
<thead>
<tr>
<th>TABLE 1607.1 NUMBER 27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupancy or Use</td>
</tr>
<tr>
<td>27. Residential</td>
</tr>
<tr>
<td>Group R-3 as applicable in Section 101.2</td>
</tr>
<tr>
<td>Uninhabitable attics without storage</td>
</tr>
<tr>
<td>Uninhabitable attics with storage</td>
</tr>
<tr>
<td>Habitable attics and sleeping areas</td>
</tr>
<tr>
<td>All other areas except balconies and decks</td>
</tr>
<tr>
<td>Hotels and multifamily dwellings</td>
</tr>
<tr>
<td>Private rooms</td>
</tr>
<tr>
<td>Public rooms and corridors serving them</td>
</tr>
</tbody>
</table>

(36) In Notes to Table 1607.1, Note i is added as follows:

i. This live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

(37) Section 1608.1 is deleted and replaced with the following:

Except as modified in section 1608.1.1, design snow loads shall be determined in accordance with Section 7 of ASCE 7, but the design roof load shall not be less than that determined by Section 1607.

(38) Section 7.4.5 of Section 7 of ASCE 7 referred to in Section 1608.1 of the IBC is deleted and replaced with the following:

Section 7.4.5 Ice Dams and Icicles Along Eaves. Where ground snow loads exceed 75 psf, eaves shall be capable of sustaining a uniformly distributed load of 2P_r on all overhanging portions. No other loads except dead loads shall be present on the roof when this uniformly distributed load is applied. All building exits under down-slope eaves shall be protected from sliding snow and ice.

(39) Section 1608.1.1 is added as follows:
1608.1.1 Utah Snow Loads. The ground snow load, $P_g$, to be used in the determination of design snow loads for buildings and other structures shall be determined by using the following formula: $P_g = (P_o^2 + S^2(A-A_o)^2)^{0.5}$ for $A$ greater than $A_o$, and $P_g = P_o$ for $A$ less than or equal to $A_o$.

WHERE

$P_g$ = Ground snow load at a given elevation (psf)

$P_o$ = Base ground snow load (psf) from Table No. 1608.1.1(a)

$S$ = Change in ground snow load with elevation (psf/100 ft.) From Table No. 1608.1.1(a)

$A$ = Elevation above sea level at the site (ft./1000)

$A_o$ = Base ground snow elevation from Table 1608.1.1(a) (ft./1000)

The building official may round the roof snow load to the nearest 5 psf. The ground snow load, $P_g$, may be adjusted by the building official when a licensed engineer or architect submits data substantiating the adjustments. A record of such action together with the substantiating data shall be provided to the division for a permanent record.

The building official may also directly adopt roof snow loads in accordance with Table 1608.1.1(b), provided the site is no more than 100 ft. higher than the listed elevation.

Where the minimum roof live load in accordance with section 1607.11 is greater than the design roof snow load, such roof live load shall be used for design, however, it shall not be reduced to a load lower than the design roof snow load. Drifting need not be considered for roof snow loads less than 20 psf.

(40) Table 1608.1.1(a) and Table 1608.1.1(b) are added as follows:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>$P_o$</th>
<th>$S$</th>
<th>$A_o$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver</td>
<td>43</td>
<td>63</td>
<td>6.2</td>
</tr>
<tr>
<td>Box Elder</td>
<td>43</td>
<td>63</td>
<td>5.2</td>
</tr>
<tr>
<td>Cache</td>
<td>50</td>
<td>63</td>
<td>4.5</td>
</tr>
<tr>
<td>Carbon</td>
<td>43</td>
<td>63</td>
<td>5.2</td>
</tr>
<tr>
<td>Daggett</td>
<td>43</td>
<td>63</td>
<td>6.5</td>
</tr>
<tr>
<td>Davis</td>
<td>43</td>
<td>63</td>
<td>4.5</td>
</tr>
<tr>
<td>Duchesne</td>
<td>43</td>
<td>63</td>
<td>6.5</td>
</tr>
<tr>
<td>Emery</td>
<td>43</td>
<td>63</td>
<td>6.0</td>
</tr>
<tr>
<td>Garfield</td>
<td>43</td>
<td>63</td>
<td>6.0</td>
</tr>
<tr>
<td>Grand</td>
<td>36</td>
<td>63</td>
<td>6.5</td>
</tr>
<tr>
<td>Iron</td>
<td>43</td>
<td>63</td>
<td>5.8</td>
</tr>
<tr>
<td>County</td>
<td>Roof Snow Load (PSF)</td>
<td>Ground Snow Load (PSF)</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>Juab</td>
<td>43</td>
<td>63</td>
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<td>Kane</td>
<td>36</td>
<td>63</td>
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<td>43</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Morgan</td>
<td>57</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Piute</td>
<td>43</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Rich</td>
<td>57</td>
<td>63</td>
<td></td>
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<td>Salt Lake</td>
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<tr>
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<td>Summit</td>
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<tr>
<td>Weber</td>
<td>43</td>
<td>63</td>
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</tr>
</tbody>
</table>

**TABLE NO. 1608.1.1(b)**

**RECOMMENDED SNOW LOADS FOR SELECTED UTAH CITIES AND TOWNS(2)**

<table>
<thead>
<tr>
<th>County</th>
<th>Roof Snow Load (PSF)</th>
<th>Ground Snow Load (PSF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver</td>
<td>5920 ft.</td>
<td>43</td>
</tr>
<tr>
<td>Box Elder County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brigham City</td>
<td>4300 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Tremonton</td>
<td>4290 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Cache County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logan</td>
<td>4530 ft.</td>
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<tr>
<td>Smithfield</td>
<td>4595 ft.</td>
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</tr>
<tr>
<td>Carbon County</td>
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</tr>
<tr>
<td>Price</td>
<td>5550 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Davis County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bountiful</td>
<td>4300 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Farmington</td>
<td>4270 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Layton</td>
<td>4400 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Fruit Heights</td>
<td>4500 ft.</td>
<td>40</td>
</tr>
<tr>
<td>Duchesne County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duchesne</td>
<td>5510 ft.</td>
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</tr>
<tr>
<td>Roosevelt</td>
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</tr>
<tr>
<td>Emery County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Castledale</td>
<td>5660 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Green River</td>
<td>4070 ft.</td>
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</tr>
<tr>
<td>Garfield County</td>
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<td></td>
</tr>
<tr>
<td>Panguitch</td>
<td>6600 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Grand County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moab</td>
<td>3965 ft.</td>
<td>25</td>
</tr>
<tr>
<td>Iron County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cedar City</td>
<td>5831 ft.</td>
<td>30</td>
</tr>
<tr>
<td>Juab County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nephi</td>
<td>5130 ft.</td>
<td>30</td>
</tr>
<tr>
<td>County</td>
<td>City</td>
<td>Altitude (ft)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Kane County</td>
<td>Kanab</td>
<td>5000</td>
</tr>
<tr>
<td>Millard County</td>
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<td>5000</td>
</tr>
<tr>
<td></td>
<td>Delta</td>
<td>4623</td>
</tr>
<tr>
<td>Morgan County</td>
<td>Morgan</td>
<td>5064</td>
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<td>Piute County</td>
<td>Piute</td>
<td>5996</td>
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<td>West Jordan</td>
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<td></td>
<td>West Valley</td>
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</tr>
<tr>
<td>San Juan County</td>
<td>Blanding</td>
<td>6200</td>
</tr>
<tr>
<td></td>
<td>Monticello</td>
<td>6820</td>
</tr>
<tr>
<td>Sanpete County</td>
<td>Fairview</td>
<td>6750</td>
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<tr>
<td></td>
<td>Mt. Pleasant</td>
<td>5900</td>
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<td></td>
<td>Manti</td>
<td>5740</td>
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<td></td>
<td>Ephraim</td>
<td>5540</td>
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<td>Gunnison</td>
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<td>Sevier County</td>
<td>Salina</td>
<td>5130</td>
</tr>
<tr>
<td></td>
<td>Richfield</td>
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</tr>
<tr>
<td>Summit County</td>
<td>Coalville</td>
<td>5600</td>
</tr>
<tr>
<td></td>
<td>Kamas</td>
<td>6500</td>
</tr>
<tr>
<td></td>
<td>Park City</td>
<td>6800</td>
</tr>
<tr>
<td></td>
<td>Park City</td>
<td>8400</td>
</tr>
<tr>
<td></td>
<td>Summit Park</td>
<td>7200</td>
</tr>
<tr>
<td>Tooele County</td>
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<td>5100</td>
</tr>
<tr>
<td>Uintah County</td>
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<td>5280</td>
</tr>
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<td>Utah County</td>
<td>American Fork</td>
<td>4500</td>
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<tr>
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<tr>
<td></td>
<td>Pleasant Grove</td>
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<td>Provo</td>
<td>5000</td>
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<tr>
<td></td>
<td>Spanish Fork</td>
<td>4720</td>
</tr>
<tr>
<td>Wasatch County</td>
<td>Heber</td>
<td>5630</td>
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<tr>
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<td>5209</td>
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<tr>
<td></td>
<td>Dameron</td>
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</tr>
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<td>Leeds</td>
<td>3460</td>
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<td></td>
<td>Rockville</td>
<td>3700</td>
</tr>
<tr>
<td></td>
<td>Santa Clara</td>
<td>2850</td>
</tr>
<tr>
<td></td>
<td>St. George</td>
<td>2750</td>
</tr>
<tr>
<td>Wayne County</td>
<td>Loa</td>
<td>7080</td>
</tr>
<tr>
<td></td>
<td>Hanksville</td>
<td>4308</td>
</tr>
</tbody>
</table>
NOTES

(1) The IBC requires a minimum live load - See 1607.11.2.

(2) This table is informational only in that actual site elevations may vary. Table is only valid if site elevation is within 100 feet of the listed elevation.

(41) Section 1608.2 is deleted and replaced with the following:

1608.2 Ground Snow Loads. The ground snow loads to be used in determining the design snow loads for roofs in states other than Utah are given in Figure 1608.2 for the contiguous United States and Table 1608.2 for Alaska. Site-specific case studies shall be made in areas designated CS in figure 1608.2. Ground snow loads for sites at elevations above the limits indicated in Figure 1608.2 and for all sites within the CS areas shall be approved. Ground snow load determination for such sites shall be based on an extreme value statistical analysis of data available in the vicinity of the site using a value with a 2-percent annual probability of being exceeded (50-year mean recurrence interval). Snow loads are zero for Hawaii, except in mountainous regions as approved by the building official.

(42) Section 1608.3.2 is deleted and replaced with the following:

1608.3.2 Thermal Factor. The value for the thermal factor, Ct, used in calculation of p\textsubscript{f} shall be determined from Table 1608.3.2.

Exception: Except for unheated structures, the value of Ct need not exceed 1.0 when ground snow load, P_{g}, is calculated using Section 1608.1.1 as amended.

(43) Section 1614.2 is deleted and replaced with the following:

1614.2 Change in Occupancy. When a change of occupancy results in a structure being reclassified to a higher Seismic Use Group, or when such change of occupancy results in a design occupant load increase of 100% or more, the structure shall conform to the seismic requirements for a new structure.

Exceptions:

1. This is not required if the design occupant load increase is less than 25 persons and the Seismic Use Group does not change.

2. Specific detailing provisions required for a new structure are not required to be met where it can be shown an equivalent level of performance and seismic safety contemplated for a new structure is obtained. Such analysis shall consider the regularity, overstrength, redundancy and ductility of the structure within the context of the specific detailing provided. Alternatively, the building official may allow the structure to be upgraded in accordance with the latest edition of the "Guidelines for
Seismic Rehabilitation of Existing Buildings" or another nationally recognized standard for retrofit of existing buildings.

(44) In Section 1616.4.1, Definition of W, Item 4 is deleted and replaced with the following:

4. Roof snow loads of 30 psf or less need not be included. Where the roof snow load exceeds 30 psf, the snow load shall be included, but may be adjusted in accordance with the following formula: \( W_s = (0.20 + 0.025(A-5))P_f \)

WHERE:

\( W_s \) = Weight of snow to be included in seismic calculation;

\( A \) = Elevation above sea level at the location of the structure (ft/1000)

\( P_f \) = Design roof snow load, psf

For the purposes of this section, snow load shall be assumed uniform on the roof footprint without including the effects of drift or sliding.

(45) Section 1617.4 is deleted and replaced with the following:

1617.4 Equivalent lateral force procedure for seismic design of buildings. The provisions given in Section 9.5.5 of ASCE 7 shall be used. Roof snow loads to be included in the seismic dead load \((W)\) may be adjusted as outlined in Section 1616.4.1, Item 4, as amended.

(46) In Section 1617.5.1, Definition of W, Item 4 is deleted and replaced with the following:

4. Roof snow loads to be included shall be as outlined in section 1616.4.1, Definition of W, Item 4, as amended.

(47) Section 1618.1 is deleted and replaced with the following:

1618.1 Dynamic analysis procedures. The following dynamic analysis procedures are permitted to be used in lieu of the equivalent lateral force procedure of Section 1617.4:


2. Linear Time-history Analysis.


The dynamic analysis procedures listed above shall be performed in accordance with the requirements of Section 9.5.6, 9.5.7, and 9.5.8 respectively, of ASCE 7. Roof snow loads to be included in the seismic dead load \((W)\) may be adjusted as outlined in Section 1616.4.1, Item 4, as amended.
(48) Section 1621.1 is deleted and replaced with the following:

1621.1 Component design. Architectural, mechanical, electrical and nonstructural systems, components and elements permanently attached to structures, including supporting structures and attachments (hereinafter referred to as "components"), and nonbuilding structures that are supported by other structures, shall meet with requirements of Section 9.6 of ASCE 7 except as modified in Sections 1621.1.1, 1621.1.2, 1621.1.3, and 1621.1.4, excluding Section 9.6.3.11.2, of ASCE 7, as amended in this section.

(49) A new Section 1621.1.4 is added as follows:

1621.1.4 ASCE 7, Section 9.6.2.6.2.2 paragraph (e) is modified to read as follows:

(e) Penetrations shall have a sleeve or adapter through the ceiling tile to allow for free movement of at least 1 inch (25 mm) in all horizontal directions.

Exceptions:

1. Where rigid braces are used to limit lateral deflections.

2. At fire sprinkler heads in frangible surfaces per NFPA 13.

(50) Section 1805.2.1 is deleted and replaced with the following:

1805.2.1 Frost protection. Except where otherwise protected from frost, foundation walls, piers and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

(1) Extending below the frost line of the locality;

(2) Constructed in accordance with ASCE-32; or

(3) Erected on solid rock.

Exception: Freestanding buildings meeting all of the following conditions shall not be required to be protected:

1. Classified in Importance Category I (see Table 1604.5), or Occupancy Group U (see Section 312);

2. Area of 1,000 square feet (93m²) or less;

3. Eave height of 10 feet (3048 mm) or less; and


Footings shall not bear on frozen soil unless such frozen condition is of a permanent character.
Section 1805.5 is deleted and replaced with the following:

1805.5 Foundation walls. Concrete and masonry foundation walls shall be designed in accordance with Chapter 19 or 21. Foundation walls that are laterally supported at the top and bottom and within the parameters of Tables 1805.5(1) through 1805.5(4) are permitted to be designed and constructed in accordance with Sections 1805.5.1 through 1805.5.5. Concrete foundation walls may also be constructed in accordance with Section 1805.5.8.

A new section 1805.5.8 is added as follows:

1805.5.8 Empirical foundation design. Group R, Division 3 Occupancies three stories or less in height, and Group U Occupancies, which are constructed in accordance with Section 2308, or with other methods employing repetitive wood-frame construction or repetitive cold-formed steel structural member construction, shall be permitted to have concrete foundations constructed in accordance with Table 1805.5(5).

Table 1805.5(5) is added as follows:

Table 1805.5(5), entitled "Empirical Foundation Walls, dated September 1, 2002, published by the Department of Commerce, Division of Occupational and Professional Licensing is hereby adopted and incorporated by reference. Table 1805.5(5) identifies foundation requirements for empirical walls.

A new section 2306.1.4 is added as follows:

2306.1.4 Load duration factors. The allowable stress increase of 1.15 for snow load, shown in Table 2.3.2, Frequently Used Load Duration Factors, C_d, of the National Design Specifications, shall not be utilized at elevations above 5,000 feet (1524 M).

Section 2308.6 is deleted and replaced with the following:

2308.6 Foundation plates or sills. Foundations and footings shall be as specified in Chapter 18. Foundation plates or sills resting on concrete or masonry foundations shall comply with Section 2304.3.1 and shall be bolted or anchored by one of the following:

1. Foundation plates or sill shall be bolted or anchored to the foundation with not less than 1/2 inch (12.7 mm) diameter steel bolts or approved anchors. Bolts shall be embedded at least 7 inches (178 mm) into concrete or masonry, and spaced not more than 6 feet (1829 mm) apart. There shall be a minimum of two bolts or anchor straps per piece with one bolt or anchor strap located not more than 12 inches (305 mm) or less than 4 inches (102 mm) from each end of each piece.

2. Foundation plates or sills shall be bolted or anchored to the foundation with not less than 1/2 inch (12.7 mm) diameter steel bolts or approved anchors. Bolts shall be embedded at least 7 inches (178 mm) into concrete or masonry, and spaced not more than 32 inches (816 mm) apart. There shall be a minimum of two bolts or anchor straps per piece located not less than 4 inches (102 mm) from each end of each piece.
A properly sized nut and washer shall be tightened on each bolt to the plate.

(56) Section 2506.2.1 is deleted and replaced with the following:

2506.2.1 Other materials. Metal suspension systems for acoustical and lay-in panel ceilings shall conform with ASTM C635 listed in Chapter 35 and Section 9.6.2.6 of ASCE 7, as amended in Section 1621.1.4, for installation in high seismic areas.

(57) In Section 2902.1, the title for Table 2902.1 is deleted and replaced with the following and footnote f is added as follows: Table 2902.1, Minimum Number of Plumbing Facilities¹.

FOOTNOTE: f. When provided, in public toilet facilities there shall be an equal number of diaper changing facilities in male toilet rooms and female toilet rooms.

(58) A new section 2902.1.1 is added as follows:

2902.1.1 Unisex toilets and bath fixtures. Fixtures located within unisex toilet and bathing rooms complying with section 2902 are permitted to be included in determining the minimum number of fixtures for assembly and mercantile occupancies.

(59) Section 3006.5 Shunt Trip, the following exception is added:

Exception: Hydraulic elevators and roped hydraulic elevators with a rise of 50 feet or less.

(60) A new section 3403.5 is added as follows:

3403.5 Parapets and other appendages. Building constructed prior to 1975 with parapet walls, cornices, spires, towers, tanks, signs, statuary and other appendages shall have such appendages evaluated by a licensed engineer to determine resistance to design loads specified in this code when said building is undergoing reroofing, or alteration of or repair to said feature.

EXCEPTION: Group R-3 an U occupancies.

Original Plans and/or structural calculations may be utilized to demonstrate that the parapet or appendages are structurally adequate. When found to be deficient because of design or deteriorated condition, the engineer shall prepare specific recommendations to anchor, brace, reinforce or remove the deficient feature.

The maximum height of an unreinforced masonry parapet above the level of the diaphragm tension anchors or above the parapet braces shall not exceed one and one-half times the thickness of the parapet wall. The parapet height may be a maximum of two and one-half times its thickness in other than Seismic Design Categories D, E, or F. If the required parapet height exceeds this maximum height, a bracing system designed using the coefficients specified in ASCE 7-02 Table 9.6.2.2 shall support the top of the parapet. When positive diaphragm connections are absent, tension roof anchors shall be added. Approved alternative methods of
equivalent strength will be considered when accompanied by engineer sealed drawings, details and calculations.

(61) The exception in 3409.1 is deleted and replaced with the following:

Exception: Type B dwelling or sleeping units required by section 1107 are not required to be provided in existing buildings and facilities, except when an existing occupancy is changed to R-2.

(62) In Section 3409.3, number 7 is added as follows:

7. When a change of occupancy in a building or portion of a building results in multiple dwelling or sleeping units as determined in section 1107.6.2, not less than 20 percent of the dwelling or sleeping units shall be Type B dwelling or sleeping units. These dwelling or sleeping units may be located on any floor of the building provided with an accessible route. Two percent, but not less than one, of the dwelling or sleeping units shall be Type A dwelling units.

(63) The following referenced standard is added under NFPA in chapter 35:

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Referenced in code</th>
</tr>
</thead>
<tbody>
<tr>
<td>720-99</td>
<td>Recommended Practice for the Installation of Household Carbon Monoxide (CO) Warning Equipment</td>
<td>907.2.10.1, 907.2.10.5</td>
</tr>
</tbody>
</table>

(64) In Chapter 35, Referenced Standards, the following NFPA referenced standards are deleted and replaced with the current versions as follows:

<table>
<thead>
<tr>
<th>DELETED</th>
<th>REPLACED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 - 99</td>
<td>13 - 02 Installation of Sprinkler Systems</td>
</tr>
<tr>
<td>13D - 99</td>
<td>13D - 02 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes</td>
</tr>
<tr>
<td>13R - 99</td>
<td>13R - 02 Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height</td>
</tr>
<tr>
<td>72 - 99</td>
<td>72 - 02 National Fire Alarm Code</td>
</tr>
<tr>
<td>101 - 00</td>
<td>101 - 03 Life Safety Code</td>
</tr>
</tbody>
</table>

**R156-56-705. Local Amendments to the IBC.**

The following are adopted as amendments to the IBC to be applicable to the following jurisdictions:

(1) City of Farmington:

Section (F)903.2.14 is adopted as follows:
(F)903.2.14 Group R, Division 3 Occupancies. An automatic sprinkler system shall be installed throughout every dwelling in accordance with NFPA 13-D, when any of the following conditions are present:

1. The structure is over two stories high, as defined by the building code;

2. The nearest point of structure is more than 150 feet from the public way;

3. The total floor area of all stories is over 5,000 square feet (excluding from the calculation the area of the basement and/or garage); or

4. The structure is located on a street constructed after March 1, 2000 that has a gradient over 12% and, during fire department response, access to the structure will be gained by using such street. (If the access is intended to be from a direction where the steep gradient is not used, as determined by the Chief, this criteria shall not apply).

Such sprinkler system shall be installed in basements, but need not be installed in garages, under eves or in enclosed attic spaces, unless required by the Chief.

(2) City of North Salt Lake

Section (F)903.2.14 is adopted as follows:

(F)903.2.14 Group R, Division 3 Occupancies. An automatic sprinkler system shall be installed throughout every dwelling in accordance with NFPA 13-D, when the following condition is present:

1. The structure is over 6,200 square feet.

Such sprinkler system shall be installed in basements, but need not be installed in garages, under eves, or in enclosed attic spaces, unless required by the fire chief.

(3) Park City Corporation and Park City Fire District:

Section (F)903.2 is deleted and replaced with the following:

(F)903.2 Where required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the location described in this section.

All new construction having more than 6,000 square feet on any one floor, except R-3 occupancy.

All new construction having more than two (2) stories, except R-3 occupancy.

All new construction having three (3) or more dwelling units, including units rented or leased, and including condominiums or other separate ownership.

All new construction in the Historic Commercial Business zone district, regardless of occupancy.
All new construction and buildings in the General Commercial zone district where there are side yard setbacks or where one or more side yard setbacks is less than two and one half (2.5) feet per story of height.

All existing building within the Historic District Commercial Business zone.

In Table 1505.1, the following is added as footnotes d and e:

d. Wood roof covering assemblies are prohibited in R-3 occupancies in areas with a combined rating of more than 11 using Tables 1505.1.1 and 1505.1.2 with a score of 9 for weather factors.

e. Wood roof covering assemblies shall have a Class A rating in occupancies other than R-3 in areas with a combined rating of more than 11 using Tables 1505.1.1 and 1505.1.2 with a score of 9 for weather factors. The owner of the building shall enter into a written and recorded agreement that the Class A rating of the roof covering assembly will not be altered through any type of maintenance process.

<table>
<thead>
<tr>
<th>TABLE 1505.1.1</th>
<th>WILDFIRE HAZARD SEVERITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATING</td>
<td>SLOPE</td>
</tr>
<tr>
<td>1</td>
<td>less than or equal to 10%</td>
</tr>
<tr>
<td>2</td>
<td>10.1 - 20%</td>
</tr>
<tr>
<td>3</td>
<td>greater than 20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE 1505.1.2</th>
<th>PROHIBITION(ALLOWANCE) OF WOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>R-3 Occupancy</td>
</tr>
<tr>
<td>less than or</td>
<td>wood roof covering assemblies per Table 1505.1 are allowed</td>
</tr>
<tr>
<td>equal to 11</td>
<td>wood roof covering assemblies per Table 1505.1 are allowed</td>
</tr>
<tr>
<td>greater than or</td>
<td>wood roof covering is prohibited</td>
</tr>
<tr>
<td>equal to 12</td>
<td>wood roof covering assemblies with a Class A rating are allowed</td>
</tr>
</tbody>
</table>

Appendix C is adopted.

(4) Sandy City

Section (F)903.2.14 is added as follows:
(F)903.2.14 An automatic sprinkler system shall be installed in accordance with NFPA 13 throughout buildings containing all occupancies where fire flow exceeds 2,000 gallons per minute, based on Table B105.1 of the 2003 International Fire Code. Exempt locations as indicated in Section 903.3.1.1.1 are allowed.

Exception: Automatic fire sprinklers are not required in buildings used solely for worship, Group R Division 3, Group U occupancies and buildings complying with the International Residential Code unless otherwise required by the International Fire Code.

R156-56-706. Statewide Amendments to the NEC.

The following are adopted as amendments to the NEC to be applicable statewide:

R156-56-707. Statewide Amendments to the IPC.

The following are adopted as amendments to the IPC to be applicable statewide:

(1) In Section 202, the definition for "Backflow Backpressure, Low Head" is deleted in its entirety.

(2) In Section 202, the definition for "Backsiphonage" is deleted and replaced with the following:

Backsiphonage. The backflow of potentially contaminated, polluted or used water into the potable water system as a result of the pressure in the potable water system falling below atmospheric pressure of the plumbing fixtures, pools, tanks or vats connected to the potable water distribution piping.

(3) In Section 202, the following definition is added:

Certified Backflow Preventer Assembly Tester. A person who has shown competence to test Backflow prevention assemblies to the satisfaction of the authority having jurisdiction under Subsection 19-4-104(4), Utah Code Ann. (1953), as amended.

(4) In Section 202, the definition for "Cross Connection" is deleted and replaced with the following:

Cross Connection. Any physical connection or potential connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other either water of unknown or questionable safety or steam, gas or chemical, whereby there exists the possibility for flow from one system to the other, with the direction of flow depending on the pressure differential between the two systems (see "Backflow").

(5) In Section 202, the following definition is added:

Heat Exchanger (Potable Water). A device to transfer heat between two physically separated fluids (liquid or steam), one of which is potable water.
(6) In Section 202, the definition for "Potable Water" is deleted and replaced with the following:

Potable Water. Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming to the Titles 19-4 and 19-5, Utah Code Ann. (1953), as amended and the regulations of the public health authority having jurisdiction.

(7) In Section 202, the following definition is added:

S-Trap. A trap having its weir installed above the inlet of the vent connection.

(8) In Section 202, the following definition is added:

Trap Arm. That portion of a fixture drain between a trap weir and the vent fitting.

(9) In Section 202, the definition for "Water Heater" is deleted and replaced with the following:

Water Heater. A closed vessel in which water is heated by the combustion of fuels or electricity and is withdrawn for use external to the system at pressures not exceeding 160 psig (1100 kPa (gage)), including the apparatus by which heat is generated, and all controls and devices necessary to prevent water temperatures from exceeding 210 degrees Fahrenheit (99 degrees Celsius).

(10) Section 304.3 Meter Boxes is deleted.

(11) Section 304.4 is deleted and replaced with the following:

304.4 Opening of Pipes. In or on the exterior habitable envelop of structures where openings have been made in walls, floors, or ceilings for the passage of pipes, the annular space between the opening and the pipe shall not exceed 1/2 inch (12.7 mm). Openings exceeding 1/2 inch (12.7 mm) shall be closed and protected by the installation of approved metal collars that are securely fastened to the adjoining structure.

(12) Section 305.5 is deleted and replaced with the following:

305.5 Pipes through or under footings or foundation walls. Any pipe that passes under or through a footing or through a foundation wall shall be protected against structural settlement.

(13) Section 305.8 is deleted and replaced with the following:

305.8 Protection against physical damage. In concealed locations where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1 1/2 inches (38 mm) from the nearest edge of the member, the pipe shall be protected by shield plates. Protective shield plates shall be minimum of 1/16 inch-thick (1.6 mm) steel, shall cover the area of the pipe where the member is notched or bored, and shall be at least the thickness of the framing member penetrated.
(14) Section 305.10 is added as follows:

Section 305.10 Improper Connections. No drain, waste, or vent piping shall be drilled and tapped for the purpose of making connections.

(15) Sections 308.7 and 308.7.1 are deleted and replaced with the following:

308.7 Anchorage. All drainage piping except ABS, PVC, CPVC, PP or any other approved piping material having solvent weld or heat fused joints shall be anchored and restrained to prevent axial movement.

308.7.1 Location. Restraints specified by an engineer and approved by the code official shall be provided for pipe sizes greater than 4 inches (102 mm), having changes in direction greater than 45 degrees and at all changes in diameter greater than two pipe sizes.

(16) Section 311.1 is deleted.

(17) Section 312.9 is deleted in its entirety and replaced with the following:

312.9 Backflow assembly testing. The premise owner or his designee shall have backflow prevention assemblies operation tested at the time of installation, repair and relocation and at least on an annual basis thereafter, or more frequently as required by the authority having jurisdiction. Testing shall be performed by a Certified Backflow Preventer Assembly Tester. The assemblies that are subject to this paragraph are the Spill Resistant Vacuum Breaker, the Pressure Vacuum Breaker Assembly, the Double Check Backflow Prevention Assembly, the Double Check Detector Assembly Backflow Preventer, the Reduced Pressure Principle Backflow Preventer, and Reduced Pressure Detector Assembly.

(18) In Section 403.1, the title for Table 403.1 is deleted and replaced with the following title and footnote f is added as follows: Table 403.1, Minimum Number of Plumbing Facilities\(^{a,f}\), (see Sections 403.2 and 403.3).

FOOTNOTE: f. When provided, in public toilet facilities there shall be an equal number of diaper changing facilities in male toilet rooms and female toilet rooms.

(19) In Section 406.3, an exception is added as follows:

Exception: Gravity discharge clothes washers, when properly trapped and vented, shall be allowed to be directly connected to the drainage system or indirectly discharge into a properly sized catch basin, trench drain, or other approved indirect waste receptor installed for the purpose of receiving such waste.

(20) A new section 406.4 is added as follows:

406.4 Automatic clothes washer metal safe pans. Metal safe pans, when installed under automatic clothes washers, shall only be allowed to receive the unintended discharge from a leaking appliance, valve, supply hose, or overflowing waste water from the clothes washer standpipe. Clothes washer metal safe pans shall not be used as indirect waste receptors to receive the discharge of waste water from any other
equipment, appliance, appurtenance, drain pipe, etc. Each safe pan shall be provided
with an approved trap seal primer, conforming to ASSE 1018 or 1044 or a deep seal
trap. The sides of the safe pan shall be no less than 1 1/2" high and shall be soldered
at the joints to provide a water tight seal.

406.4.1 Safe pan outlet. The safe pan outlet shall be no less than 1 1/2" in diameter
and shall be located in a visible and accessible location to facilitate cleaning and
maintenance. The outlet shall be flush with the surface of the pan so as not to allow
water retention within the pan.

(21) Section 412.1 is deleted and replaced with the following:

412.1 Approval. Floor drains shall be made of ABS, PVC, cast-iron, stainless steel,
brass, or other approved materials that are listed for the use.

(22) Section 412.5 is added as follows:

412.5 Public toilet rooms. All public toilet rooms shall be equipped with at least one
floor drain.

(23) Section 417.5.2 is deleted and replaced with the following:

(Subsections 417.5.2.1 to 417.5.2.4 are not changed)

417.5.2 Shower lining. Floors under shower compartments, except where
prefabricated receptors have been provided, shall be lined and made water tight
utilizing material complying with Sections 417.5.2.1 through 417.5.2.4. Such liners
shall turn up on all sides at least three inches (76.2 mm) above the finished
threshold level. Liners shall be recessed and fastened to an approved backing so as
not to occupy the space required for wall covering, and shall not be nailed or
perforated at any point less than two inches (50.8 mm) above finished threshold.
Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent
slope) and shall be sloped towards the fixture drains and be securely fastened to the
waste outlet at the seepage entrance, making a watertight joint between the liner
and the outlet.

Exception: Floor surfaces under shower heads provided for rinsing laid directly on the
ground are not required to comply with this section.

(24) Section 418.1 is deleted and replaced with the following:

418.1 Approval. Sinks shall conform to ANSI Z124.6, ASME A112.19.1M, ASME
A112.19.2M, ASME A112.19.3M, ASME A112.19.4M, ASME A112.19.9M, CSA B45.1,
CSA B45.2, CSA B45.3, CSA B45.4 or NSF 2.

(25) Section 424.3 is deleted and replaced with the following:

424.5 Shower Valves. Shower and tub-shower combination valves shall be balanced
pressure, thermostatic or combination balanced-pressure/thermostatic valves that
conform to the requirements of ASSE 1016 or CSA B125. Multiple (gang) showers
supplied with a single tempered water supply pipe shall have the water supply for
such showers controlled by an approved master thermostatic mixing valve complying with ASSE 1017. Shower and tub-shower combination valves and master thermostatic mixing valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120 degrees F (49 degrees C), which shall be field adjusted in accordance with the manufacturer's instructions. The water heater thermostat shall not be used as a water tempering device to meet this requirement.

(26) Section 502.4 is deleted and replaced with the following:

502.4 Water Heater Seismic Bracing. Water heaters shall be anchored or strapped in the upper third of the appliance to resist a horizontal force equal to one third the operating weight of the water heater, acting in any horizontal direction, or in accordance with the appliance manufacturers recommendations.

(27) Section 504.6.2 is deleted and replaced with the following:

504.6.2 Material. Relief valve discharge piping shall be of those materials listed in Table 605.5 and meet the requirements for Section 605.5 or shall be tested, rated and approved for such use in accordance with ASME A112.4.1. Piping from safety pan drains shall meet the requirements of Section 804.1 and be constructed of those materials listed in Section 702.

(28) Section 504.7.1 is amended as follows:

The measurement of "3/4 inch" in the last sentence of the paragraph is replaced with the measurement "1 1/2 inch".

(29) Section 504.7.2 is deleted and replaced with the following:

504.7.2 Pan drain termination. The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor, floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface. When permitted by the administrative authority, the pan drain may be directly connected to a soil stack, waste stack, or branch drain. The pan drain shall be individually trapped and vented as required in Section 907.1. The pan drain shall not be directly or indirectly connected to any vent. The trap shall be provided with a trap primer conforming to ASSE 1018 or ASSE 1044.

(30) A new section 504.7.3 is added as follows:

504.7.3 Pan Designation. A water heater pan shall be considered an emergency receptor designated to receive the discharge of water from the water heater only and shall not receive the discharge from any other fixtures, devises or equipment.

(31) Section 602.3 is deleted and replaced with the following:

602.3 Individual water supply. Where a potable public water supply is not available, individual sources of potable water supply shall be utilized provided that the source has been developed in accordance with Sections 73-3-1, 73-3-3, and 73-3-25, Utah
Code Ann. (1953), as amended, as administered by the Department of Natural Resources, Division of Water Rights. In addition, the quality of the water shall be approved by the local health department having jurisdiction. The source shall supply sufficient quantity of water to comply with the requirements of this chapter.

(32) Sections 602.3.1, 602.3.2, 602.3.3, 602.3.4, 602.3.5 and 602.3.5.1 are deleted in their entirety.

(33) Section 604.4.1 is added as follows:

604.4.1 Metering faucets. Self closing or metering faucets shall provide a flow of water for at least 15 seconds without the need to reactivate the faucet.

(34) Section 606.5 is deleted and replaced with the following:

606.5 Water pressure booster systems. Water pressure booster systems shall be provided as required by Section 606.5.1 through 606.5.11.

(35) Section 606.5.11 is added as follows:

606.5.11 Prohibited installation. In no case shall a booster pump be allowed that will lower the pressure in the public main to less than 20 psi.

(36) In Section 608.1, the following sentence is added at the end of the paragraph:

Connection without an air gap between potable water piping and sewer-connected waste shall not exist under any condition.

(37) Table 608.1 is deleted and replaced with the following:

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Degree of Hazard</th>
<th>Application</th>
<th>Installation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Gap (ASME A112.1.2)</td>
<td>High or Low</td>
<td>Backsiphonage</td>
<td>See Table 608.15.1</td>
</tr>
<tr>
<td>Reduced Pressure Principle Backflow Preventer</td>
<td></td>
<td>Backsiphonage 1/2&quot; - 16&quot;</td>
<td>a. The bottom of each RP assembly shall be a minimum of 12 inches above the ground or floor.</td>
</tr>
<tr>
<td>C511, USC-FCCCHR, ASSE 1013</td>
<td></td>
<td></td>
<td>b. RP assemblies shall NOT be installed in a pit.</td>
</tr>
<tr>
<td>CSA CNA/CSA-B64.4) and Reduced Pressure Detector Assembly</td>
<td></td>
<td></td>
<td>c. The relief valve on each RP assembly shall not be directly connected to any waste disposal line,</td>
</tr>
<tr>
<td>(ASSE 1047, USC-FCCCHR)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
including sanitary sewer, storm drains, or vents.

d. The assembly shall be installed in a horizontal position only unless listed or approved for vertical installation.

<table>
<thead>
<tr>
<th>Double Check Backflow Prevention Assembly (AWWA C510, USC-FCCCHR, ASSE 1015)</th>
<th>Double Check Detector Assembly Backflow Preventer (ASSE 1048, USC-FCCCHR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backflow or Backsiphonage 1/2&quot; - 16&quot;</td>
<td>a. If installed in a pit, the DC assembly shall be installed with a minimum of 12 inches of clearance between all sides of the vault including the floor and roof or ceiling with adequate room for testing and maintenance.</td>
</tr>
<tr>
<td>a. Shall be installed in a horizontal position unless listed or approved for vertical installation.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure Vacuum Breaker Assembly (ASSE 1020, USC-FCCCHR)</th>
<th>a. Shall not be installed in an area that could be subjected to backpressure or back drainage conditions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High or Low</td>
<td>b. Shall be installed a minimum of 12 inches above all downstream piping and the highest point of use.</td>
</tr>
<tr>
<td>Backsiphonage 1/2&quot; - 2&quot;</td>
<td>c. Shall not be installed below ground or in a vault or pit.</td>
</tr>
<tr>
<td></td>
<td>d. Shall be installed in a vertical position only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spill Resistant Vacuum Breaker (ASSE 1056, USC-FCCCHR)</th>
<th>a. Shall not be installed in an area that could be subjected to backpressure or back drainage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High or Low</td>
<td>b. Shall be installed a minimum of 12 inches above all downstream piping and the highest point of use.</td>
</tr>
<tr>
<td>Backsiphonage 1/4&quot; - 2&quot;</td>
<td>c. Shall not be installed below ground or in a vault or pit.</td>
</tr>
<tr>
<td></td>
<td>d. Shall be installed in a vertical position only.</td>
</tr>
</tbody>
</table>
Atmospheric High or Backsiphonage Vacuum Low Breaker (ASSE 1001 USC-FCCCHR, CSA CAN/CSA-B64.1.1

General Installation Criteria

a. Shall not be installed in an area that could be subjected to backpressure or back drainage conditions.
b. Shall not be installed where it may be subjected to continuous pressure for more than 12 consecutive hours at any time.
c. Shall be installed a minimum of six inches above all downstream piping and the highest point of use.
d. Shall be installed on the discharge (downstream) side of any valves.
e. The AVB shall be installed in a vertical position only.

The assembly owner, when necessary, shall provide devices or structures to facilitate testing, repair, and/or maintenance and to insure the safety of the backflow technician. Assemblies shall not be installed more than five feet conditions.
b. Shall be installed a minimum of 12 inches above all downstream piping and the highest point of use.
c. Shall not be installed below ground or in a vault or pit.
d. Shall be installed in a vertical position only.

d. Shall be installed on the discharge (downstream) side of any valves.
e. The AVB shall be installed in a vertical position only.
off the floor unless a permanent platform is installed.

The body of the assembly shall not be closer than 12 inches to any wall, ceiling or incumbrance, and shall be accessible for testing, repair and/or maintenance.

In cold climates, assemblies shall be protected from freezing by a means acceptable to the code official.

Assemblies shall be maintained as an intact assembly.

(38) Table 608.1.1 is added as follows:

<table>
<thead>
<tr>
<th>Device</th>
<th>Degree of Hazard</th>
<th>Application</th>
<th>Applicable Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antisiphon-type</td>
<td>Low</td>
<td>Backsiphonage</td>
<td>ASSE 1002</td>
</tr>
<tr>
<td>Water Closet Flush</td>
<td></td>
<td></td>
<td>CSA CAN/ CSA-B125</td>
</tr>
<tr>
<td>Tank Ball Cock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual check valve</td>
<td>Low</td>
<td>Backsiphonage or Backpressure</td>
<td>ASSE 1024</td>
</tr>
<tr>
<td>Backflow Preventer</td>
<td></td>
<td></td>
<td>1/4&quot; - 1&quot;</td>
</tr>
<tr>
<td>Backflow Preventer with Intermediate</td>
<td>Low</td>
<td>Backsiphonage or Backpressure</td>
<td>ASSE 1012</td>
</tr>
<tr>
<td>Atmospheric Vent</td>
<td>Residential</td>
<td></td>
<td>CSA CAN/ CSA-B64.3</td>
</tr>
<tr>
<td>Boiler</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual check valve type Backflow</td>
<td>Low</td>
<td>Backsiphonage or Backpressure</td>
<td>ASSE 1022</td>
</tr>
<tr>
<td>Preventer for Carbonated Beverage</td>
<td></td>
<td></td>
<td>1/4&quot; - 3/8&quot;</td>
</tr>
<tr>
<td>Dispensers/Post Mix Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hose-connection Vacuum Breaker</td>
<td>Low</td>
<td>Backsiphonage</td>
<td>ASSE 1011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/2&quot;, 3/4&quot;, 1&quot;</td>
<td>CSA CAN/ CSA-B64.2</td>
</tr>
</tbody>
</table>
Vacuum Breaker          Low        Backsiphonage   ASSE 1019
Wall Hydrants,         3/4", 1"        CSA CAN/
Frost-resistant,       CSA-B64.2.2
Automatic Draining    Type

Laboratory Faucet     Low        Backsiphonage   ASSE 1035
Backflow Preventer    CSA CAN/
                       CSA-B64.7

Hose Connection       Low        Backsiphonage   ASSE 1052
Backflow Preventer    1/2" - 1"

Installation Guidelines: The above specialty devices shall be installed in accordance with their listing and the manufacturer's instructions and the specific provisions of this chapter.

(39) In Section 608.3.1, the following sentence is added at the end of the paragraph:

All piping and hoses shall be installed below the atmospheric vacuum breaker.

(40) Section 608.7 is deleted in its entirety.

(41) In Section 608.8, the following sentence is added at the end of the paragraph:

In addition each nonpotable water outlet shall be labeled with the words "CAUTION: UNSAFE WATER, DO NOT DRINK".

(42) In Section 608.11, the following sentence is added at the end of the paragraph:

The coating shall conform to NSF Standard 61 and application of the coating shall comply with the manufacturers instructions.

(43) Section 608.13.3 is deleted and replaced with the following:

608.13.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012 or CAS CAN/CAS-B64.3. These devices shall be permitted to be installed on residential boilers only where subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.

(44) Section 608.13.4 is deleted in its entirety.

(45) Section 608.15.3 is deleted and replaced with the following:

608.15.3 Protection by a backflow preventer with intermediate atmospheric vent. Opening and outlets to residential boilers only shall be protected by a backflow preventer with an intermediate atmospheric vent.
(46) Section 608.15.4 is deleted and replaced with the following:

608.15.4 Protection by a vacuum breaker. Openings and outlets shall be protected by atmospheric-type or pressure-type vacuum breakers. The critical level of the atmospheric vacuum breaker shall be set a minimum of 6 inches (152 mm) above the flood level rim of the fixture or device. The critical level of the pressure vacuum breaker shall be set a minimum of 12 inches (304 mm) above the flood level rim of the fixture or device. Ball cocks shall be set in accordance with Section 425.3.1. Vacuum breakers shall not be installed under exhaust hoods or similar locations that will contain toxic fumes or vapors. Pipe-applied vacuum breakers shall be installed not less than 6 inches (152 mm) above the flood level rim of the fixture, receptor or device served. No valves shall be installed downstream of the atmospheric vacuum breaker.

(47) Section 608.15.4.2 is deleted and replaced with the following:

608.15.4.2 Hose connections. Sillcocks, hose bibbs, wall hydrants and other openings with a hose connection shall be protected by an atmospheric-type or pressure-type vacuum breaker or a permanently attached hose connection vacuum breaker. Add-on-type backflow prevention devices shall be non-removable. In climates where freezing temperatures occur, a listed self-draining frost proof hose bibb with an integral backflow preventer shall be used.

(48) In Section 608.16.2, the first sentence of the paragraph is deleted and replaced as follows:

608.16.2 The potable water supply to the residential boiler shall be equipped with a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012 or CSA CAN/CSA B64.3.

(49) Section 608.16.3 is deleted and replaced with the following:

608.16.3 Heat exchangers. Heat exchangers shall be separated from potable water by double-wall construction. An air gap open to the atmosphere shall be provided between the two walls.

Exceptions:

1. Single wall heat exchangers shall be permitted when all of the following conditions are met:

a. It utilizes a heat transfer medium of potable water or contains only substances which are recognized as safe by the United States Food and Drug Administration (FDA);

b. The pressure of the heat transfer medium is maintained less than the normal minimum operating pressure of the potable water system; and

c. The equipment is permanently labeled to indicate only additives recognized as safe by the FDA shall be used.
2. Steam systems that comply with paragraph 1 above.

3. Approved listed electrical drinking water coolers.

(50) In Section 608.16.4.1, add the following exception:

Exception: All class 1 and 2 systems containing chemical additives consisting of strictly glycerine (C.P. or U.S.P. 96.5 percent grade) or propylene glycol shall be protected against backflow with a double check valve assembly. Such systems shall include written certification of the chemical additives at the time of original installation and service or maintenance.

(51) Section 608.16.5 is deleted and replaced with the following:

608.16.5 Connections to lawn irrigation systems. The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker, or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

(52) Section 608.16.7 is deleted and replaced with the following:

608.16.7 Chemical dispensers. Where chemical dispensers connect to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, Section 608.13.2, Section 608.13.5, Section 608.13.6 or Section 608.13.8.

(53) Section 608.16.8 is deleted and replaced with the following:

608.16.8 Portable cleaning equipment. Where the portable cleaning equipment connects to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, Section 608.13.2 or Section 608.13.8.

(54) Section 608.16.9 is deleted and replaced with the following:

608.16.9 Dental pump equipment or water syringe. Where dental pumping equipment or water syringes connects to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, Section 608.13.2, Section 608.13.5, Section 608.13.6 or Section 608.13.8.

(55) Section 608.16.10 is added as follows:

608.16.10 Automatic and coin operated car washes. The water supply to an automatic or coin operated car wash shall be protected in accordance with Section 608.13.1 or Section 608.13.2.

(56) Section 608.17 is deleted in its entirety.
(57) Section 701.2 is deleted and replaced with the following:

701.2 Sewer required. Every building in which plumbing fixtures are installed and all premises having drainage piping shall be connected to a public sewer where the sewer is within 300 feet of the property line in accordance with Section 10-8-38, Utah Code Ann., (1953), as amended; or an approved private sewage disposal system in accordance with Rule R317-4, Utah Administrative Code, as administered by the Department of Environmental Quality, Division of Water Quality.

(58) Section 802.3.2 is deleted in its entirety and replaced with the following:

802.3.2 Open hub waste receptors. Waste receptors for clear water waste shall be permitted in the form of a hub or pipe extending not more than 1/2 inch above a water impervious floor and are not required to have a strainer.

(59) Section 904.1 is deleted and replaced with the following:

904.1 Roof extensions. All open vent pipes that extend through a roof shall be terminated at least 12 inches (304.8 mm) above the roof, except that where a roof is to be used for any purpose other than weather protection, the vent extension shall be run at least 7 feet (2134 mm) above the roof.

(60) In Section 904.6, the following sentence is added at the end of the paragraph:

Vents extending through the wall shall terminate not less than 12 inches from the wall with an elbow pointing downward.

(61) In Section 905.4, the following sentence is added at the end of the paragraph:

Horizontal dry vents below the flood level rim shall be permitted for floor drain and floor sink installations when installed in accordance with Sections 702.2, 905.2 and 905.3 and provided with a wall clean out.

(62) Section 1002.2 is deleted and replaced with the following:

1002.2 Design of traps. Fixture traps shall be self-scouring. Fixture traps shall not have interior partitions, except where such traps are integral with the fixture or where such traps are constructed of an approved material that is resistant to corrosion and degradation. Slip joints shall be made with an approved elastomeric gasket and shall only be installed on the trap inlet, trap outlet and within the trap seal. One slip joint fitting shall be allowed to be installed downstream of the trap.

(63) Section 1002.8 is deleted and replaced with the following:

1002.8 Recess for trap connection. A recess provided for connection of the underground trap, such as one serving a bathtub in slab-type construction, shall have sides and a bottom of corrosion-resistant, insect- and vermin-proof construction. The annular space between the pipe and the penetration shall not exceed 1/2 inch (12.7 mm).

(64) Section 1003.3.5 is added as follows:
1003.3.5 Grease trap restriction. Unless specifically required or permitted by the code official, no food waste grinder or dishwasher shall be connected to or discharge into any grease trap.

(65) Section 1104.2 is deleted and replaced with the following:

1104.2 Combining storm and sanitary drainage prohibited. The combining of sanitary and storm drainage systems is prohibited.

(66) Section 1108 is deleted in its entirety.

(67) Chapter 13, Referenced Standards, is amended as follows:

NSF - Standard Reference Number 61-99 - The following referenced in code section number is added: 608.11

The following reference standard is added:

<table>
<thead>
<tr>
<th>TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>USC-   Foundation for Cross-Connection Table 608.1</td>
</tr>
<tr>
<td>FCCCHR Control and Hydraulic Research</td>
</tr>
<tr>
<td>9th    University of Southern California</td>
</tr>
<tr>
<td>Edition Kaprielian Hall 300</td>
</tr>
<tr>
<td>Manual Los Angeles CA 90089-2531</td>
</tr>
<tr>
<td>of Cross Connection</td>
</tr>
<tr>
<td>Control</td>
</tr>
</tbody>
</table>

(68) Appendix C of the IPC, Gray Water Recycling Systems as amended herein shall not be adopted by any local jurisdiction until such jurisdiction has requested Appendix C as amended to be adopted as a local amendment and such local amendment has been approved as a local amendment under these rules.

(69) In jurisdictions which have adopted Appendix C as amended as a local amendment as provided herein, Section 301.3 of the IPC is deleted and replaced with the following:

301.3 Connection to the drainage system. All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the drainage system of the building or premises, in accordance with the requirements of this Code. This section shall not be construed to prevent indirect waste systems provided for in Chapter 8.

Exception: Bathtubs, showers, lavatories, clothes washers and laundry sinks shall not be required to discharge to the sanitary drainage system where such fixtures discharge to a gray water recycling system meeting all the requirements as specified in Appendix C as amended by these rules.

C101.1 General, recycling gray water within a building. In R1, R2 and R4 occupancies and one- and two-family dwellings, gray water recycling systems are prohibited.

In commercial occupancies, recycled gray water shall only be utilized for the flushing of water closets and urinals that are located in the same building as the gray water recycling system, provided the following conditions are met:

1. Such systems comply with Sections C101.1 through C101.14 as amended by these rules.

2. The commercial establishment demonstrates that it has and will have qualified staff to oversee the gray water recycling systems. Qualified staff is defined as level 3 waste water treatment plan operator as specified by the Department of Environmental Quality.

3. Gray water recycling systems shall only receive non hazardous waste discharge of bathtubs, showers, lavatories, clothes washers and laundry sinks such as chemicals having a pH of 6.0 to 9.0, or non flammable or non combustible liquids, liquids without objectionable odors, non-highly pigmented liquids, or other liquids that will not interfere with the operation of the sewer treatment facilities.

C101.2 Permit required. A permit for any gray water recycling system shall not be issued until complete plans prepared by a licensed engineer, with appropriate data satisfactory to the Code Official, have been submitted and approved. No changes or connections shall be made to either the gray water recycling system or the potable water system within any site containing a gray water recycling system, without prior approved by the Code Official. A permit may also be required by the local health department to monitor compliance with this appendix for system operator standards and record keeping.

C101.3 Definition. The following term shall have the meaning shown herein.

GRAY WATER. Waste water discharged from lavatories, bathtubs, showers, clothes washers and laundry sinks.

C101.4 Installation. All drain, waste and vent piping associated with gray water recycling systems shall be installed in full compliance with this code.

C101.5 Gray Water Reservoir. Gray water shall be collected in an approved reservoir construction of durable, nonabsorbent and corrosion-resistant materials. The reservoir shall be a closed and gas-tight vessel. Gas tight access openings shall be provided to allow inspection and cleaning of the reservoir interior. The holding capacity of the reservoir shall be a minimum of twice the volume of water required to meet the daily flushing requirements of the fixtures supplied by the gray water, but
not less than 50 gallons (189 L). The reservoir shall be sized to limit the retention time of gray water to 72 hours maximum.

C101.6 Filtration. Gray water entering the reservoir shall pass through an approved cartridge filter or other method approved by the Code Official.

C101.7 Disinfection. Gray water shall be disinfected by an approved method that employs one or more disinfectants such as chlorine, iodine or ozone. A minimum of 1 ppm free residual chlorine shall be maintained in the gray water recycling system reservoir. Such disinfectant shall be automatically dispensed. An alarm shall be provided to shut down the gray water recycling system if disinfectant levels are not maintained at the required levels.

C101.8 Makeup water. Potable water shall be supplied as a source of makeup water for the gray water recycling system. The potable water supply to any building with a gray water recycling system shall be protected against backflow by an RP backflow assembly installed in accordance with this code. There shall be full-open valve on the makeup water supply to the reservoir. The potable water supply to the gray water reservoir shall be protected by an air gap installed in accordance with this code.

C101.9 Overflow. The reservoir shall be equipped with an overflow pipe of the same diameter as the influent pipe for the gray water. The overflow shall be directly connected to the sanitary drainage system.

C101.10 Drain. A drain shall be located at the lowest point of the reservoir and shall be directly connected to the sanitary drainage system. The drain shall be the same diameter as the overflow pipe required by Section C101.9 and shall be provided with a full-open valve.

C101.11 Vent required. The reservoir shall be provided with a vent sized in accordance with Chapter 9 based on the size of the reservoir influent pipe.

C101.12 Coloring. The gray water shall be automatically dyed blue or green with a food grade vegetable dye before such water is supplied to the fixtures.

C101.13 Identification. All gray water distribution piping and reservoirs shall be identified as containing non-potable water. Gray water recycling system piping shall be permanently colored purple or continuously wrapped with purple-colored Mylar tape. The tape or permanently colored piping shall be imprinted in black, upper case letters with the words "CAUTION: GRAY WATER, DO NOT DRINK."

All equipment areas and rooms for gray water recycling system equipment shall have a sign posted in a conspicuous place with the following text: TO CONSERVE WATER, THIS BUILDING USES GRAY WATER TO FLUSH TOILETS AND URINALS, DO NOT CONNECT TO THE POTABLE WATER SYSTEM. The location of the signage shall be determined by the Code Official.

C101.14 Removal from service. All gray water recycling systems that are removed from service shall have all connections to the reservoir capped and routed back to the building sewer. All gray water distribution lines shall be replaced with new materials.
C201.1 Outside the building. Gray water reused outside the building shall comply with the requirements of the Department of Environmental Quality Rule R317.

**R156-56-708. Statewide Amendments to the IMC.**

The following are adopted as amendments to the IMC to be applicable statewide:

**R156-56-709. Statewide Amendments to the IFGC.**

The following are adopted as amendments to the IFGC to be applicable statewide:

(1) The following paragraph is added at the end of Section 305.1

305.1 General. After natural gas, space and water heating appliances have been adjusted for altitude and the Btu content of the natural gas, the installer shall apply a sticker in a visible location indicating that the proper adjustments to such appliances have been made. The adjustments for altitude and the Btu content of the natural gas shall be done in accordance with the manufacturer's installation instructions and the gas utility's approved practices.

(2) Chapter 4, Section 401 General, a new section 401.9 is added as follows:

401.9 Meter protection. Gas meters shall be protected from physical damage, including falling ice and snow.

**R156-56-710. Statewide Amendments to the IECC.**

The following are adopted as amendments to the IECC to be applicable statewide:

(1) In Section 504.7, the following exception is added:

Exception: Heat traps, other than the arrangement of piping and fittings, shall be prohibited unless a means of controlling thermal expansion can be ensured as required in the IPC Section 607.3.

**R156-56-711. Statewide Amendments to the IRC.**

The following are adopted as amendments to the IRC to be applicable statewide:

(1) All amendments to the IBC under Section R156-56-704, local amendments under Section R156-56-705, the NEC under Section R156-56-706, the IPC under Section R156-56-707, the IMC under Section R156-56-708, the IFGC under Section R156-56-709 and the IECC under Section R156-56-710 which may be applied to detached one and two family dwellings and multiple single family dwellings shall be applicable to the corresponding provisions of the IRC. All references to the International Electrical Code are deleted and replaced with the National Electrical Code adopted under Section R156-56-701(1)(b). Should there be any conflicts between the NEC and the IRC, the NEC shall prevail.
(2) In Section 109, a new section is added as follows:

R109.1.5 Weather-resistive barrier and flashing inspections. An inspection shall be made of the weather-resistive barrier as required by Section R703.1 and flashings as required by Section R703.8 to prevent water from entering the weather-resistant exterior wall envelope.

The remaining sections are renumbered as follows:

R109.1.6 Other inspections

R109.1.6.1 Fire-resistance-rated construction inspection

R109.1.7 Final inspection.

(3) Section R114.1 is deleted and replaced with the following:

R114.1 Notice to owner. Upon notice from the building official that work on any building or structured is being prosecuted contrary to the provisions of this code or other pertinent laws or ordinances or in an unsafe and dangerous manner, such work shall be immediately stopped. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's agent or to the person doing the work; and shall state the conditions under which work will be permitted to resume.

(4) In Section R202, the definition of "Backsiphonage" is deleted and replaced with the following:

BACKSIPHONAGE: The backflow of potentially contaminated, polluted or used water into the potable water system as a result of the pressure in the potable water system falling below atmospheric pressure of the plumbing fixtures, pools, tanks or vats connected to the potable water distribution piping.

(5) In Section R202 the following definition is added:

CERTIFIED BACKFLOW PREVENTER ASSEMBLY TESTER: A person who has shown competence to test Backflow prevention assemblies to the satisfaction of the authority having jurisdiction under Subsection 19-4-104(4), Utah Code Ann. (1953), as amended.

(6) In Section R202 the definition of "Cross Connection" is deleted and replaced with the following:

CROSS CONNECTION. Any physical connection or potential connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other either water of unknown or questionable safety or steam, gas or chemical, whereby there exists the possibility for flow from one system to the other, with the direction of flow depending on the pressure differential between the two systems(see "Backflow, Water Distribution").

(7) In Section R202 the following definition is added:
HEAT exchanger (Potable Water). A device to transfer heat between two physically separated fluids (liquid or steam), one of which is potable water.

(8) In Section R202 the definition of "Potable Water" is deleted and replaced with the following:

POTABLE WATER. Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming to the Titles 19-4 and 19-5, Utah Code Ann. (1953), as amended and the regulations of the public health authority having jurisdiction.

(9) In Section R202, the following definition is added:

S-Trap. A trap having its weir installed above the inlet of the vent connection.

(10) In Section R202 the definition of "Water Heater" is deleted and replaced with the following:

WATER HEATER. A closed vessel in which water is heated by the combustion of fuels or electricity and is withdrawn for use externally to the system at pressures not exceeding 160 psig (1100 kPa (gage)), including the apparatus by which heat is generated, and all controls and devices necessary to prevent water temperatures from exceeding 210 degrees Fahrenheit (99 degrees Celsius).

(11) Section R301.5 is deleted and replaced with the following:

R301.5 Live Load. The minimum uniformly distributed live load shall be as provided in Table R301.5.

<table>
<thead>
<tr>
<th>USE</th>
<th>LIVE LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attics with storage (b), (e)</td>
<td>20</td>
</tr>
<tr>
<td>Attics without storage (b), (e), (g)</td>
<td>10</td>
</tr>
<tr>
<td>Decks (f)</td>
<td>60</td>
</tr>
<tr>
<td>Exterior balconies</td>
<td>60</td>
</tr>
<tr>
<td>Fire escapes</td>
<td>40</td>
</tr>
<tr>
<td>Guardrails and handrails (d)</td>
<td>200</td>
</tr>
<tr>
<td>Guardrails in-fill components (f)</td>
<td>50</td>
</tr>
<tr>
<td>Passenger vehicle garages (a)</td>
<td>50(a)</td>
</tr>
<tr>
<td>Rooms other than sleeping rooms</td>
<td>40</td>
</tr>
<tr>
<td>Sleeping rooms</td>
<td>30</td>
</tr>
<tr>
<td>Stairs</td>
<td>40(c)</td>
</tr>
</tbody>
</table>

For SI: 1 pound per square foot = 0.0479kN/m², 1 square inch = 645 mm² 1 pound = 4.45N.
(a) Elevated garage floors shall be capable of supporting a 2,000-pound load applied over a 20-square-inch area.

(b) No storage with roof slope not over 3 units in 12 units.

(c) Individual stair treads shall be designed for the uniformly distributed live load or a 300-pound concentrated load acting over an area of 4 square inches, whichever produces the greater stresses.

(d) A single concentrated load applied in any direction at any point along the top.

(e) Attics constructed with wood trusses shall be designated in accordance with Section R802.10.1.

(f) See Section R502.2.1 for decks attached to exterior walls.

(g) This live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

(12) Section R304.3 is deleted and replaced with the following:

R304.3 Minimum dimensions. Habitable rooms shall not be less than 7 feet (2134 mm) in any horizontal dimension.

Exception: Kitchens shall have a clear passageway of not less than 3 feet (914 mm) between counter fronts and appliances or counter fronts and walls.

(13) Section R311.5.3 is deleted and replaced with the following:

R311.5.3 Stair treads and risers.

R311.5.3.1 Riser height. The maximum riser height shall be 8 inches (203 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

R311.5.3.2 Tread depth. The minimum tread depth shall be 9 inches (228 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Winder treads shall have a minimum tread depth of 10 inches (254 mm) measured as above at a point 12 inches (305 mm) from the side where the treads are narrower. Winder treads shall have a minimum tread depth of 6 inches (152 mm) at any point. Within any flight of stairs, the greatest winder tread depth at the 12 inch (305 mm) walk line shall not exceed the smallest by more than 3/8 inch (9.5 mm).

R311.5.3.3 Profile. The radius of curvature at the leading edge of the tread shall be no greater than 9/16 inch (14.3 mm). A nosing not less than 3/4 inch (19 mm) but not more than 1 1/4 inches (32 mm) shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by
more than 3/8 inches (9.5 mm) between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed 1/2 inch (12.7 mm). Risers shall be vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch diameter (102 mm) sphere.

Exceptions.

1. A nosing is not required where the tread depth is a minimum of 10 inches (254 mm).

2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less.

(14) Section R311.5.6 is deleted and replaced with the following:

R311.5.6 Handrails. Handrails shall be provided on at least one side of stairways consisting of four or more risers. Handrails shall have a minimum height of 34 inches (864 mm) and a maximum height of 38 inches (965 mm) measured vertically from the nosing of the treads. All required handrails shall be continuous the full length of the stairs from a point directly above the top riser to a point directly above the lowest riser of the stairway. The ends of the handrail shall be returned into a wall or shall terminate in newel post or safety terminals. A minimum clear space of 1 1/2 inches (38 mm) shall be provided between the wall and the handrail.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at a turn.

2. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.

(15) Section R311.5.6.3 is deleted and replaced with the following:

R311.5.6.3 Handrail grip size. The handgrip portion of handrails shall have a circular cross section of 1 1/4 inches (32mm) minimum to 2 5/8 inches (67mm) maximum. Edges shall have a minimum radius of 1/8 inch (3.2mm).

Exception: Non-circular handrails shall be permitted to have a maximum cross sectional dimension of 3.25 inches (83mm) measured 2 inches (51 mm) down from the top of the crown. Such handrail is required to have an indentation on both sides between 0.625 inch (16mm) and 1.5 inches (38mm) down from the top or crown of the cross section. The indentation shall be a minimum of 0.25 inch (6mm) deep on each side and shall be at least 0.5 inch (13 mm) high. Edges within the handgrip shall have a minimum radius of 0.0625 inch (2 mm). The handrail surface shall be smooth with no cusps so as to avoid catching clothing or skin.

(16) Section R313 is deleted and replaced with the following:
R313.1 Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be installed in the following locations:

1. In each sleeping room.

2. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.

3. On each additional story of the dwelling, including basements and cellars but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

All smoke alarms shall be listed and installed in accordance with the provisions of this code and the household fire warning equipment provision of NFPA 72.

R313.2 Carbon monoxide alarms. In new residential structures regulated by this code that are equipped with fuel burning appliances, carbon monoxide alarms shall be installed on each habitable level. All carbon monoxide detectors shall be listed and comply with U.L. 2034 and shall be installed in accordance with provisions of this code and NFPA 720.

R313.3 Interconnection of alarms. When multiple alarms are required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. Approved combination smoke- and carbon-monoxide detectors shall be permitted.

R313.4 Power source. In new construction, the required alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs, or additions regulated by Section R313.5

R313.5 Alterations, repairs and additions. When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be provided with alarms located as required for new dwellings; the alarms shall be interconnected and hard wired.

Exceptions:

1. Alarms in existing areas shall not be required to be interconnected and hard wired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space, or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.
2. Repairs to the exterior surfaces of dwellings are exempt from the requirements of this section.

(17) In Section 317.3.2 Exception 1.1 is deleted and replaced with the following:

1.1 By a horizontal distance of not less than the width of a stud space regardless of stud spacing, or

(18) In Section R403.1.4.1 exception 1 is deleted and replaced with the following:

1. Freestanding accessory structures, not intended for human occupancy, with an area of 1,000 square feet (93m²) or less, of wood framed construction, with an eave height of 10 feet (3048 mm) or less shall not be required to be protected.

(19) In Section R403.1.6 the exception is deleted and replaced with the following exceptions:

Exceptions:

1. Foundation anchor straps, spaced as required to provide equivalent anchorage to 1/2 inch diameter (12.7 mm) anchor bolts.

2. When anchor bolt spacing does not exceed 32 inches (813 mm) apart, anchor bolts may be placed with a minimum of two bolts per plate section located not less than 4 inches (102 mm) from each end of each plate section at interior bearing walls, interior braced wall lines and at all exterior walls.

(20) In Section R403.1.6.1 the following exception is added at the end of Item 2 and Item 3:

Exception: When anchor bolt spacing does not exceed 32 inches (816 mm) apart, anchor bolts may be placed with a minimum of two bolts per plate section located not less than 4 inches (102 mm) from each end of each plate section at interior bearing walls, interior braced wall lines and at all exterior walls.

(21) Section R703.6 is deleted and replaced with the following:

R703.6 Exterior plaster.

R703.6.1 Lath. All lath and lath attachments shall be of corrosion-resistant materials. Expanded metal or woven wire lath shall be attached with 1 1/2 inch-long (38 mm), 11 gage nails having 7/16 inch (11.1 mm) head, or 7/8-inch-long (22.2 mm), 16 gage staples, spaced at no more than 6 inches (152 mm), or as otherwise approved.

R703.6.2 Weather-resistant barriers. Weather-resistant barriers shall be installed as required in Section R703.2 and, where applied over wood-based sheathing, shall include a weather-resistive vapor permeable barrier with a performance at least equivalent to two layers of Grade D paper.

R703.6.3 Plaster. Plastering with portland cement plaster shall be not less than three coats when applied over metal lath or wire lath and shall be not less than two coats
when applied over masonry, concrete or gypsum backing. If the plaster surface is completely covered by veneer or other facing material or is completed concealed, plaster application need be only two coats, provided the total thickness is as set forth in Table R702.1(1). On wood-frame construction with an on-grade floor slab system, exterior plaster shall be applied in such a manner as to cover, but not extend below, lath, paper and screed.

The proportion of aggregate to cementitious materials shall be as set forth in Table R702.1(3).

(22) In Section R703.8, number 8 is added as follows:

8. At the intersection of foundation to stucco, masonry, siding, or brick veneer with an approved corrosive-resistance flashing with a 1/2" drip leg extending past exterior side of the foundation.

(23) A new Section G2401.2 is added as follows:

G2401.2 Meter Protection. Gas meters shall be protected from physical damage, including falling ice and snow.

(24) Section P2602.3 is added as follows:

P2602.3 Individual water supply. Where a potable public water supply is not available, individual sources of potable water supply shall be utilized provided that the source has been developed in accordance with Sections 73-3-1 and 73-3-25, Utah Code Ann. (1953), as amended; or administered by the Department of Natural Resources, Division of Water Rights. In addition, the quality of the water shall be approved by the local health department having jurisdiction.

(25) Section P2602.4 is added as follows:

P2602.4 Sewer required. Every building in which plumbing fixtures are installed and all premises having drainage piping shall be connected to a public sewer where the sewer is within 300 feet of the property line in accordance with Section 10-8-38, Utah Code Ann., (1953), as amended; or an approved private sewage disposal system in accordance with Rule R317-501 through R317-513 and Rule R317-5, Utah Administrative Code, as administered by the Department of Environmental Quality, Division of Water Quality.

(26) Section P2603.2.1 is deleted and replaced with the following:

P2603.2.1 Protection against physical damage. In concealed locations where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters, or similar members less than 1 1/2 inch (38 mm) from the nearest edge of the member, the pipe shall be protected by shield plates. Protective shield plates shall be a minimum of 1/16 inch-thick (1.6 mm) steel, shall cover the area of the pipe where the member is notched or bored, and shall be at least the thickness of the framing member penetrated.

(27) Section P2801.2.1 is added as follows:
P2801.2.1 Water heater seismic bracing. In Seismic Design Categories C, D₁ and D₂, water heaters shall be anchored or strapped in the upper third of the appliance to resist a horizontal force equal to one third the operating weight of the water heater, acting in any horizontal direction, or in accordance with the appliance manufacturers recommendations.

(28) Section P2902.1.1 is added as follows:

P2902.1.1 Backflow assembly testing. The premise owner or his designee shall have backflow prevention assemblies operation tested at the time of installation, repair and relocation and at least on an annual basis thereafter, or more frequently as required by the authority having jurisdiction. Testing shall be performed by a Certified Backflow Preventer Assembly Tester. The assemblies that are subject to this paragraph are the Spill Resistant Vacuum Breaker, the Pressure Vacuum Breaker Assembly, the Double Check Backflow Prevention Assembly, the Double Check Detector Assembly Backflow Preventer, the Reduced Pressure Principle Backflow Preventer, and Reduced Pressure Detector Assembly.

(29) Section P3003.2.1 is added as follows:

Section P3003.2.1 Improper Connections. No drain, waste, or vent piping shall be drilled and tapped for the purpose of making connections.

(30) In Section P3103.6, the following sentence is added at the end of the paragraph:

Vents extending through the wall shall terminate not less than 12 inches from the wall with an elbow pointing downward.

(31) In Section P3104.4, the following sentence is added at the end of the paragraph:

Horizontal dry vents below the flood level rim shall be permitted for floor drain and floor sink installations when installed below grade in accordance with Chapter 30, and Sections P3104.2 and P3104.3. A wall cleanout shall be provided in the vertical vent.

(32) Chapter 43, Referenced Standards, is amended as follows:

The following reference standard is added:

<table>
<thead>
<tr>
<th>USC-</th>
<th>Foundation for Cross-Connection</th>
<th>Section P2902</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCCCHR</td>
<td>Control and Hydraulic Research</td>
<td></td>
</tr>
<tr>
<td>9th</td>
<td>University of Southern California</td>
<td></td>
</tr>
<tr>
<td>Edition</td>
<td>Kaprielian Hall 300</td>
<td></td>
</tr>
<tr>
<td>Manual</td>
<td>Los Angeles CA 90089-2531</td>
<td></td>
</tr>
</tbody>
</table>
In Chapter 43, the following standard is added under NFPA as follows:

**TABLE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>720-98</td>
<td>Recommended Practice for the Installation</td>
<td>R313.2</td>
</tr>
<tr>
<td></td>
<td>of Household Carbon Monoxide (CO) Warning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment</td>
<td></td>
</tr>
</tbody>
</table>

**R156-56-712. Local Amendments to the IRC.**

The following are adopted as amendments to the IRC to be applicable to the following jurisdictions:

(1) City of Farmington:

Sections R324.1 and R324.2 are added as follows:

R324.1 When required. An automatic sprinkler system shall be installed throughout every dwelling in accordance with NFPA 13-D, when any of the following conditions are present:

1. the structure is over two stories high, as defined by the building code;
2. the nearest point of structure is more than 150 feet from the public way;
3. the total floor area of all stories is over 5,000 square feet (excluding from the calculation the area of the basement and/or garage); or
4. the structure is located on a street constructed after March 1, 2000 that has a gradient over 12% and, during fire department response, access to the structure will be gained by using such street. (If the access is intended to be from a direction where the steep gradient is not used, as determined by the Chief, this criteria shall not apply).

R324.2 Installation requirements and standards. Such sprinkler system shall be installed in basements, but need not be installed in garages, under eves or in enclosed attic spaces, unless required by the Chief. Such system shall be installed in accordance with NFPA 13-D.

(2) Morgan City Corp:

Section R105.2 Work Exempt From Permit, the following is added:

10. Structures intended to house farm animals, or for the storage of feed associated with said farm animals when all the following criteria is met:

a. The parcel of property involved is zoned for the keeping of farm animals or has grand fathered animal rights.
b. The structure is setback not less than 50 feet from the rear or side of dwellings, and not less than 10 feet from property lines and other structures.

c. The structure does not exceed 1000 square feet of floor area, and is limited to 20 feet in height. Height is measured from the average grade to the highest point of the structure.

d. Before construction, a site plan is submitted to, and approved by the building official.

Electrical, plumbing, and mechanical permits shall be required when that work is included in the structure.

(3) Morgan County:

Section R105.2 Work Exempt From Permit, the following is added:

10. Structures intended to house farm animals, or for the storage of feed associated with said farm animals when all the following criteria is met:

a. The parcel of property involved is zoned for the keeping of farm animals or has grand fathered animal rights.

b. The structure is set back not less than required by the Morgan County Zoning Ordinance for such structures, but not less than 10 feet from property lines and other structures.

c. The structure does not exceed 1000 square feet of floor area, and is limited to 20 feet in height. Height is measured from the average grade to the highest point of the structure.

d. Before construction, a Land Use Permit must be applied for, and approved, by the Morgan County Planning and Zoning Department.

Electrical, plumbing, and mechanical permits shall be required when that work is included in the structure.

(4) City of North Salt Lake:

Sections R324.1 and R324.2 are added as follows:

R324.1 When Required. An automatic sprinkler system shall be installed throughout every dwelling when the following condition is present:

1. The structure is over 6,200 square feet.

R324.2 Installation requirements and standards. Such sprinkler system shall be installed in basements, but need not be installed in garages, under eves, or in enclosed attic spaces, unless required by the fire chief. Such system shall be installed in accordance with NFPA 13-D.
(5) Park City Corporation and Park City Fire District:

Section R905.7 is deleted and replaced with the following:

R905.7 Wood shingles. The installation of wood shingles shall comply with the provisions of this section.

Wood roof covering is prohibited in areas with a combined rating of more than 11 using the following tables with a score of 9 for weather factors.

<table>
<thead>
<tr>
<th>WILDFIRE HAZARD SEVERITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCALE</td>
</tr>
<tr>
<td>RATING</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

PROHIBITION/EXEMPTION

| RATING | WOOD ROOF PROHIBITION |
| less than or equal to 11 | wood roofs are allowed |
| greater than or equal to 12 | wood roofs are prohibited |

Section R905.8 is deleted and replaced with the following:

R905.8 Wood Shakes. The installation of wood shakes shall comply with the provisions of this section. Wood roof covering is prohibited in areas with a combined rating of more than 11 using the following tables with a score of 9 for weather factors.

<table>
<thead>
<tr>
<th>WILDFIRE HAZARD SEVERITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCALE</td>
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<td>3</td>
</tr>
</tbody>
</table>

PROHIBITION/EXEMPTION

| RATING | WOOD ROOF PROHIBITION |
| less than or equal to 11 | wood roofs are allowed |
| greater than or equal to 12 | wood roofs are prohibited |

Appendix K is adopted.

KEY
contractors, building codes, building inspection, licensing

Date of Enactment or Last Substantive Amendment

January 1, 2006

Notice of Continuation

May 16, 2002

Authorizing, Implemented, or Interpreted Law

58-1-106(1)(a); 58-1-202(1)(a); 58-56-1; 58-56-4(2); 58-56-6(2)(a)

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comprehensive - coordinated - contemporary

Codes and Standards Committee
NFPA 5000 Report

The American Institute of Architects
October 18, 2002
The AIA Continues to Demand "One Code"

The National Fire Protection Association's (NFPA) production of a building code in a two-year period is an impressive effort. The American Institute of Architects' (AIA) analysis of the new NFPA 5000 Building Code (NFPA 5000) and its 'C3' family of codes did not provide any impetus for AIA to change its current policy calling for a single code. (Do not confuse NFPA's C3 family of codes with AIA's C3 report.) The fact that there are no significant technical differences between the International Building Code and NFPA's 5000 Building Code only reinforces the need for a "one code" approach to building regulations. The AIA policy now states:

Policy Statement. The AIA supports building regulations that:

1. Set forth only the minimum standards for safety, health, and welfare in building construction;
2. Are developed by rationally conceived criteria;
3. Are designed to serve performance rather than prescriptive criteria wherever practicable;
4. Consist of a single set of comprehensive, coordinated, and contemporary codes for the nation (emphasis added);
5. Are without favoritism or bias to any special interest; and
6. Are cost-effective in relation to public benefit.

It is item 4 in the policy that was the impetus for the title to AIA's C3, comprehensive, coordinated and contemporary issued originally in 1999 and reinforced with this update report; C3<sub>2002</sub>.

AIA's Codes and Standards Committee authorized a technical review of NFPA 5000 which found several problems with NFPA 5000 and questions of cost effectiveness for specific occupancies and design features. The document that has now been released by NFPA has serious technical flaws which are of particular concern if it should be adopted and applied. The provisions of Chapters 1 and 4 of NFPA 5000 make it difficult, if not impossible, to imagine how the code can be effectively used by an architect in order to meet the requirements for life safety as administered by a building code. These shortcomings in the code create significant problems for owners, architects, and the entire construction industry.

Despite efforts by AIA leadership to bring both NFPA and ICC back to the table to resolve their problems and to achieve the goal of "one code," NFPA has remained entrenched in its position to not discuss moving toward such a goal. With no better measuring stick to use to understand the rationale for such a position, AIA concluded in 1999, and continues to believe, that such a position is solely based on economic self interest.
The Task Force Background

The American Institute of Architects has participated in the development of codes and standards since its inception. Following long-held concerns regarding the need for a single code, in 1975 the AIA put forth the concept of a single set of codes in the white paper titled *One Code; a Program of Regulatory Reform for the United States*. In 1991, the three model building code organizations began bringing their codes closer together using a common code format which AIA participated in developing.

Following five years of development, the International Code Council published its series of codes with the completion of the 2000 edition of the *International Building Code*. Following three months of review by the AIA Codes Task Force, the AIA Board accepted the *C" Report* (comprehensive, coordinated, contemporary) in December of 1999, which endorsed the majority of the International Codes and the NFPA *National Electrical Code*.

In August of 1999, the National Fire Protection Association announced its intent to develop a family of codes along with International Association of Plumbers and Mechanical Officials (IAPMO), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the Western Fire Chiefs, including a new building code to be called NFPA 5000. Final action on that code took place at the NFPA Standards Council meetings in July of 2002. An AIA technical review committee convened in September 2002, in order to evaluate the new building code.

Members of the Technical Review Committee were:

Perry Haviland, FAIA  
Vernon Woodworth, AIA  
David Frable, FPE  
Jerry Tepe, FAIA  
Jim Sealy, FAIA  
Carl Lamping, AIA  
David Collins, FAIA

The charge to the Technical Review Committee was to evaluate NFPA 5000 and its family of codes to determine how they can be used by architects. Criteria used in the evaluation included current AIA public policy as well as the usefulness and usability of the new document. The Technical Review Committee met for two days and reviewed significant elements of the code, including an analysis of administrative definitions, existing structures, and height and area chapters as well as eight occupancy chapters.

The Technical Review Committee forwarded its report to the AIA Codes and Standards Committee. Following the Codes and Standards Committee's analysis of the report and the code, the committee members determined that there is no need to modify AIA's policy on codes and recommended the continued call for a single set of comprehensive, coordinated, and contemporary codes for the United States.
The Codes and Standards Committee determined that the family of codes that is currently recommended by the AIA through its governance policy should be retained and provide the focus for continuing efforts to achieve the goal of "one code."

1.223. The health, safety and welfare of society are protected, and global interdependence, business, and the professional community are enriched, by the participation of AIA architects in developing a single set of comprehensive, coordinated and contemporary codes.

1.2231. Performance-based Codes. Innovation in design and public protection is best served through the development, adoption and use of performance based codes.

1.2232. Prescriptive Codes. Certain prescriptive codes also serve the needs of the public and provide guidance to performance-based codes. Uniform adoption of the following codes without technical amendment is in the public interest:

(i) The International Building Code
(ii) The National Electrical Code (National Fire Protection Administration)
(iii) The International Plumbing Code
(iv) The International Mechanical Code
(v) ICC Model Energy Code
(vi) International Residential Code
(vii) International Zoning Code
(viii) International Property Maintenance Code
Within the parameters of the AIA's policy supporting the C³ approach, the following concerns with NFPA 5000 have been identified:

Comprehensive

- The architect's ability to participate in the process of IAPMO remains unanswered to date. Active participation in the NFPA process is costly and difficult at best. The 5000 code alone consists of multiple specialty committees in addition to the overlap with NFPA 101 occupancy committees. Attending all committee meetings is impossible for an individual because they often meet simultaneously. Committees meet at various locations throughout the US, making it an expensive proposition to monitor and even more expensive to participate as required by NFPA criteria.
- Other documents in the NFPA family have not yet been finalized and published, leaving significant gaps in their system of codes. These documents include NFPA 1 and ASHRAE's energy code criteria.

Coordinated

- Questions remain as to how the NFPA family of codes will be coordinated since the system has not been fully vetted. The current documents that are referenced are not coordinated with NFPA 5000, and IAPMO's process does not meet AIA's criteria for consensus.
- The majority of AIA members are more familiar with the International codes, and therefore, the common code format is easier to use for that majority. However, some members are familiar with NFPA 101 and may be equally comfortable with the 5000 format.
- For many years, AIA has been critical of the lack of administrative coordination between the building and fire codes that directly affects the business and practice of architects. NFPA 5000 and NFPA 1 have made no effort to improve the circumstances surrounding their application in the field, therefore leaving architects with the burden of having to wonder if, when, and most importantly, how these documents may or may not be applied to a project. This situation leaves the owner, the architect and the contractor with the burden of resolving the administrative and technical conundrum at the end of the project when it is most difficult and costly to do so.
- NFPA's Standards Council is continuing to review and determine how the 5000 document will be administered as a part of the NFPA family of documents.

Contemporary

- The family of codes being promoted by NFPA does not recognize contemporary methods and materials, thereby making their use less cost effective.
Process

The Technical Review Committee received copies of the NFPA 5000 code when they arrived at their meeting in September. A great deal of the committee's time involved studying the final format of the new code even though most of the members of the committee had reviewed copies of the final draft of the code prior to the meeting in order to familiarize themselves with the code's structure.

As part of their work, each Technical Review Committee member examined different occupancies with which they were most familiar. Using a matrix, each member examined the major questions and issues that an architect would typically use to begin the design process. The notes from those reviews are included in the appendix to this report. Following the review, the members of the group discussed their findings and shared their concerns for the type of projects in the occupancy category they reviewed.

On the second day of the meeting, the committee examined AIA's policy and the procedures of NFPA, the International Code Council (ICC), and the American National Standards Institute (ANSI) to better understand how they align with AIA policy. In addition, the committee examined the C³ report.

Conclusions/Recommendations

Currently, the AIA endorses a series of codes that closely meet AIA policy. The Technical Review Committee determined that the NFPA family of codes can not be endorsed because they include various technical and functional problems that are contrary to AIA policy. Based on the technical review of NFPA 5000, it is even more apparent that there is not a need for two building codes. It would benefit AIA members more than anything else to have a single set of codes.

As a result of the original C³ report, AIA undertook several avenues to achieve a single set of codes. The committee reaffirmed the need to move aggressively forward with many of those efforts to assist architects to more effectively participate in the legislative and administrative process of code adoption in order to assure appropriate code development, affirm appropriate code adoption, and encourage appropriate code enforcement and application.
Specific Items

Significant problems exist with Chapter 1 of NFPA 5000 because of a lack of clarity with the intent and application of the code. Simple aspects of a code such as consistency of language and clarity of application to various building conditions are not evident. For example, in one section "finishes" are noted as not requiring a permit, and yet a similar section elsewhere appears to require a permit for such "finish" work. Other sections identify any existing building that does not conform to the current code as a hazard.

Chapter 4 is perhaps the most troubling portion of the NFPA 5000 building code. This chapter contains a plethora of conceptual ideas that could best be described as a "god, motherhood and apple pie" approach to safety. In an enforcement environment, this approach would wreak havoc on consistency of interpretation. However, a much greater concern involves the potential liability problems these concepts would pose to both owners and architects because of their open-ended approach to safety in what are often finite construction questions.

Many of these concepts are found in performance codes where some basis for measuring performance exists, and a "deemed to comply" standard is established. In most cases, the prescriptive code that parallels the performance code is identified as that product. However, there is no such clarity provided by the NFPA 5000 code.

Also, specific items appear to be missing from the body of the code. No requirements for design to meet energy standards exist except for mechanical equipment. The code uses different terms to describe what appears to be the same work associated with an existing building and leaves significant gaps and overlaps, making it difficult to form a clear picture of what the code intends. Responsibility for compliance and the wide range of authority given to the "Authority Having Jurisdiction" leaves predictable enforcement questionable.
General Comments

Included in an appendix to this report are the notes on the specific occupancies that were reviewed as well as other notes taken by the participants during the technical review process. In addition, attached are the review pages that the committee used as a whole to try to bring some focus to the disparate questions that their individual reviews created. One of the key elements is the critical flow chart that attempts to establish a means by which an architect can chart a path through this code.

NFPA has for years been regarded as a premiere developer of standards. It has been able to work with very broad industry groups to develop technical criteria for systems which are very valuable and useful. However, NFPA’s experience with the development of codes is limited as is evident when examining NFPA 54 (fuel gas), NFPA 101 (life safety) and NFPA 70 (electrical), for example. These codes are significantly limited in their scope and dominated by special interest groups and specialists who work in and with those industries. (By industries, we mean the technical experts on the subjects such as fuel gas, life safety and electrical.) These experts are often actively involved in the business of manufacturing devices and systems or for operating affected facilities. Few enforcement or design professionals can afford to directly participate in the NFPA process, which forces the organization to use consultants and association representatives to cover these areas of influence. Because of their limited numbers and resources, enforcement officials are often overwhelmed by the industry interests on a given subject.
<table>
<thead>
<tr>
<th>Category</th>
<th>Applicable Section(s)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupancy Mercantile Chapter 27</td>
<td>27.1.3.2.1</td>
<td>Mercantile A, B &amp; C</td>
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<tr>
<td></td>
<td></td>
<td>A) 30,000    B) 3,000    C) 3,000</td>
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<td>Special Occupancy</td>
<td>27.4.4</td>
<td>Mall buildings are distinct from the rest of mercantile</td>
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<tr>
<td></td>
<td>27.4.5</td>
<td>Bulk mercantile</td>
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<td>Fire Separation/ Mixed Use Requirements</td>
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<td>Separation from parking garage</td>
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<td>27.1.3.2.4</td>
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<td>27.4.3.5.2</td>
<td>Tenant separation in mall</td>
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<td>Fire Suppression Requirements</td>
<td>27.3.5.1</td>
<td>3 stories or 12,000 SF, no fire area concept</td>
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<td>Type of Construction Limitations</td>
<td>27.1.5</td>
<td>Minimum const. per specific chapters</td>
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<tr>
<td>Means of Egress</td>
<td>27.2.1.2</td>
<td>No inside open stair or ramp</td>
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<td>See: A27.2.2.7.2</td>
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<td>Number of exits tied to A, B or C (above)</td>
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<td>27.4.4</td>
<td>Limit of plastic signs</td>
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<tr>
<td>Occupancy</td>
<td>6.1.8</td>
<td>Has distinct definitions for each “2” (ok)-Just Different</td>
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<tr>
<td>Residential Chapters 22, 23, 24, 25</td>
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<td>First time townhouses appear</td>
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<td>6.1.9</td>
<td>Residential Board &amp; Care-Refers to Chapter 26 (Pg. 224)</td>
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<td>25.1.1.3</td>
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<tr>
<td>Fire Suppression Requirements</td>
<td>22.3.5</td>
<td>Not required for one &amp; two dwellings</td>
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<td>23.3.6.3</td>
<td>Required in lodging or rooming houses</td>
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<td>24.3.5.2</td>
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<td>25.3.5.2</td>
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<td></td>
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<td>Hazardous first appears in Hotel</td>
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<td>Refers back to other chapters</td>
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<td>Means of Egress</td>
<td>22.2.4</td>
<td>Doors-min of 24” or 28” (should be 32”)</td>
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<td>22.2.5</td>
<td>Stairs etc. 22.2.5.4 is confusing</td>
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<td>Means of Escape</td>
<td>Chap. 24</td>
<td>Hotels means of escape &amp; MOE F82 first time</td>
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<td>22.2.2</td>
<td>Overboard &amp; confusing - just like MOE, but more confusing</td>
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<td></td>
<td>(See all pg. 211)</td>
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<td>Occupant Load Factors</td>
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<td>None for 1 &amp; 2</td>
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<td>Travel Distance</td>
<td>23.2.1.4</td>
<td>75 in sprinkler lodging</td>
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<td>Not in 1&amp;2</td>
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<td>Lodging/Rooming refers back to other chapters</td>
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<td>Not in Lodge or Rooming</td>
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<td>Number of Exits</td>
<td>24.2 MOE</td>
<td>Refers to Chapter 12 which in turn refers to ICC/ANSI</td>
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<td>23.2 Escape</td>
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<td>HVAC Refer to Chapter 50</td>
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<td>Refers to Chapter 15</td>
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<td></td>
<td>17.1.1.3 to 12</td>
<td>Classrooms &gt;50=Assembly Occupancy (Ch 16)-Business-Assembly</td>
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<td>17.3.2</td>
<td>Specific Hazardous Areas. General Cooking facilities, labs, stages</td>
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<td>Fire Separation/ Mixed Use Requirements</td>
<td>6.2 17.1.2.2</td>
<td>2 hr. from Assembly: special exception 17.1.2.2, with simultaneous</td>
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<td>occupancy, A&amp;E uses not separated but separation is required by</td>
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<td>6.2 unless accessory</td>
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<td>Fire Protection Requirements</td>
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<td>17.3.5 (Ch. 55.3)</td>
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<td>17.7.1.2 7.7.1.3</td>
<td>Special MOE requirements for Preschool--&gt;2nd grade</td>
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<td>17.1.5.3</td>
<td>Type U-V not located below</td>
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<td>17.1.5.2</td>
<td>Educational Occupancies are not permitted more than one level</td>
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<td>below level of exit discharge</td>
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<td>Occupant Load Factors</td>
<td>Table 11.3.1.2</td>
<td>Per person required, except awaiting areas</td>
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<tr>
<td></td>
<td></td>
<td>No 3/5 SF</td>
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<td>20 SF Classroom</td>
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<td>Travel Distance</td>
<td>17.2.11</td>
<td>Windows for Rescue: All student occupied rooms&gt;250 SF</td>
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<td>17.2.6</td>
<td>Travel Distance 150'--&gt;200' w/ sprinklers, w/ exceptions</td>
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<td>17.2.5.4</td>
<td>Exit Access: Student occupancy Direct Access to corridor</td>
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<td>17.2.5.3</td>
<td>Common Path 75'--&gt;100' w/sprinklers</td>
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<td>17.2.5.2</td>
<td>Dead end. 20'--&gt;50' w/ sprinklers.</td>
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<td>Number of Exits</td>
<td>17.2.4</td>
<td>2 required: 1)Every Story  2) accessible from every part</td>
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<td>17.2.2.2.2.5</td>
<td>Only one locking or latching device per door</td>
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<td>17.2.2.2.2&gt;100</td>
<td>&gt;100 = Panic hardware or “Fire Exit Hardware”</td>
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<td>17.2.2.2.3</td>
<td>Special locking = 11.2.1.6</td>
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<td>Mechanical System</td>
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<td>49.8:Special Requirements: Tbl 49.8.1</td>
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<td>Detection, Alarm, communication fire protection</td>
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<td>17.3.5</td>
<td>requirement&gt;20,000 St</td>
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<td></td>
<td>17.3.7.1</td>
<td>Smoke compartments:&gt;30,000 SF or 300 Ft. building Length</td>
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<td>(w/exception)</td>
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<td>Educational Use</td>
<td>17.1.3.1</td>
<td>Definition of Educational space (all buildings used for educational</td>
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<td>purposes through the 12th grade)</td>
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<td>Aisle Requirement in Educational</td>
<td>17.2.5.6</td>
<td>Aisle requirement in educational occupancy</td>
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<td>21 Detention and Correction</td>
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<td>18.4.3.2</td>
<td>Flexible plan and open plan</td>
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<td>(Day Care is not considered Special Occupancy)</td>
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<tr>
<td>Detection, Alarm Communication</td>
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<td>18.2.2.10</td>
<td>Permitted in Day Care! (18.2.2.9)</td>
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<td>Capacity 11.3</td>
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<td>11.3.1.2</td>
<td>Some flexibility in 18.1.6.2</td>
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<td>18.2.6.2</td>
<td>Shall not exceed 100/150</td>
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<td>Number of Exits</td>
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<td>And 2000 Uniform Plumbing Code</td>
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Notes:

- No Differentiation of requirements according to age (2 yrs. 9 mos/Adult & Child Day Care) 305.2 & 308.5
- Chapter 1 Administration
  - 1.5 Equivalency more extensive and comprehensive than BOCA (IBC)?
  - 1.7.1.3 Right of entry recourse to remedy provided by law to secure entry
  - 1.7.1.4 Stop work orders no specification that order be in writing
  - 1.7.3.1 Board of appeals shall be appointed by the chief appointing authority of the jurisdiction establishes term of office, terms of removal
  - 1.7.4 Establishes terms of liability
  - 1.7.4.2 Establishes liability of building owners
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<td>Occupancy Industrial</td>
<td>6.1.12</td>
<td>Occupancy definition</td>
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<td>29.1.3.1</td>
<td>Subclassification – general &amp; special purpose</td>
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<td>Unclear about low and ordinary hazard subdivision in this section. It</td>
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<td>refers to both in general, and refers to 6.3.2 for Classification of</td>
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<td>Hazard of Contents, but only in Table 7.4.1 does it actually refer to</td>
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<td>both as distinct elements.</td>
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<td>Special Occupancy</td>
<td>29.6</td>
<td>Why these provisions for aircraft servicing hangars? In general</td>
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<td>there is a reference to NFPA 409 in 6.4.25 and I do not think there</td>
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<td>is a difference to this section.</td>
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<td>Fire Separation/ Mixed Use</td>
<td>6.2 / 6.2.4.1</td>
<td>Mostly 3 hr. / 2 hr. w/ M&amp;B / 1 hr. w/ S – ordinary hazard</td>
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<tr>
<td>Requirements</td>
<td>29.1.2</td>
<td>Mostly 2 hr. w/ some 3 / 1 hr. w/ S – low hazard</td>
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<td>Fire Suppression Requirements</td>
<td>29.3.4</td>
<td>FA unless &lt; 100 occupants or &gt; 25 above/below LED</td>
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<td>29.3.5</td>
<td>AS &gt; 12,000 SF / &gt; 24,000 SF total / &gt; 3 stories</td>
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<td>55.4</td>
<td>Standpipe &gt;= 4 stories</td>
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<td>Means of Egress</td>
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<td>29.2.2.9</td>
<td>Fire escape ladders permitted</td>
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<td>29.2.2.10</td>
<td>Slide escape permitted</td>
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<td>Occupant Load Factors</td>
<td>11.3.1.2</td>
<td>100 sf gross. Also refers here to general and high hazard industrial.</td>
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<td>High hazard not defined in Chapter 29 other than reference to Chapter</td>
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<td>11.3.3.1</td>
<td>0.3” stairs / 0.2” level &amp; ramp</td>
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<td>Travel Distance</td>
<td>29.2.5.1</td>
<td>DE 50/50 CPT 100/50</td>
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<td>29.2.6</td>
<td>250/400 general – 200/300 special</td>
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<td>Number of Exits</td>
<td>29.2.4</td>
<td>Two – three &gt; 500</td>
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<td>Nothing special</td>
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<tr>
<td>Occupancy</td>
<td>16.1.3 (Classification of Assembly Occupancy)</td>
<td>Defined in Section 6.1.2.</td>
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<td>Assembly</td>
<td>16.1.2 (Multiple Occupancies)</td>
<td>All multiple occupancies in accordance with Section 6.2 (Multiple Occupancies) and 16.1.2 (Multiple Occupancies). Where there are differences in requirements for this chapter &amp; provisions for mixed occupancies (section 6.2.3) or separated occupancies (section 6.2.4), the requirements of Chapter 16 shall apply. See section 4.3.2.2 (prescriptive based option).</td>
</tr>
<tr>
<td>Chapter 16</td>
<td>16.1.2.3 (Assembly &amp; Mercantile Occupancies in Mall Buildings)</td>
<td>The provisions of this Chapter shall apply to the assembly occupancy tenant space. The provisions of 27.4.4 (Mall Buildings) shall be permitted to be used outside the assembly occupancy tenant space.</td>
</tr>
<tr>
<td>Special Occupancy</td>
<td>16.4.3 (Limited Access or Underground Buildings)</td>
<td>Limited access of underground buildings shall comply with 16.4.3.2 through 16.4.3.5.</td>
</tr>
<tr>
<td></td>
<td>16.4.4 (High Rise Buildings)</td>
<td>High rise assembly occupancy buildings and high-rise mixed occupancy buildings that house assembly occupancies in the high rise portions of the building shall comply with Chapter 33 (High Rise Buildings)</td>
</tr>
<tr>
<td></td>
<td>16.4.5 (Stages &amp; Platforms)</td>
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<tr>
<td></td>
<td>16.4.6 (Projection Rooms)</td>
<td></td>
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<td></td>
<td>16.4.7 (Special Amusement Buildings)</td>
<td>Special amusement buildings, regardless of occupant load, shall meet the requirements for assembly occupancies in addition to the requirements of 16.4.7, unless the special amusement building is a multilevel play structure that is more than 10 ft. in height &amp; has aggregate horizontal projections not exceeding 160 sq. ft.</td>
</tr>
<tr>
<td></td>
<td>16.4.8 (Grandstands)</td>
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<tr>
<td></td>
<td>16.4.8.2 (Seating)</td>
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<td></td>
<td>16.4.8.3 (Wood Grandstands)</td>
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<td>16.4.8.4 (Portable Grandstands)</td>
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<tr>
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<td>16.4.8.5 (Spaces Underneath Grandstands)</td>
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<td>16.4.8.6 (Guards &amp; Railings)</td>
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<td>16.4.9 (Folding &amp; Telescopic Seating)</td>
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<tr>
<td></td>
<td>16.4.9.2 (Seating)</td>
<td></td>
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<td></td>
<td>16.4.9.3 (Guards &amp; Railings)</td>
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</tr>
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</tr>
<tr>
<td>Fire Separation/Mixed Use Requirements</td>
<td>16.4.10 (Airport Loading Walkways)</td>
<td>Airport loading walkways shall conform with NFPA 415, Standard on Airport Terminal Buildings, Fueling Ramp Drainage, &amp; Loading Walkways, and the provisions of 16.4.10.2 &amp; 16.4.10.3.</td>
</tr>
<tr>
<td>Type of Construction Limitations</td>
<td>16.1.5 (Minimum Construction Requirements.)</td>
<td>Construction shall be in accordance with all the following except as otherwise modified by 16.1.5.2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Chap. 7: Construction Types &amp; Height/Area Req.</td>
</tr>
<tr>
<td></td>
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<td>- Chap. 8: Fire Resistive Materials &amp; Construction</td>
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<td>- Chap. 13: Encroachments into Public Right of Way</td>
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<td>- Chap. 14: Safeguards During Construction</td>
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<td></td>
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<td>- Chap. 31: Occupancies in Special Structures</td>
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<td>- Chap. 35: Structural Design</td>
</tr>
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<td>- Chap. 36: Soils, Foundations, &amp; Retaining Walls</td>
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<td>- Chap. 37: Exterior Wall Construction</td>
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<td>- Chap. 38: Roof Assemblies &amp; Roof Structure</td>
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<td>- Chap. 39: Flood Resistant Design &amp; Construction</td>
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<td>- Chap. 40: Quality Assurance During Construction</td>
</tr>
<tr>
<td></td>
<td>16.1.5.2</td>
<td>The location of an assembly occupancy shall be limited in accordance with Chapter 7 or Table 16.1.5.2, whichever is more stringent.</td>
</tr>
<tr>
<td></td>
<td>Table 16.1.5.2</td>
<td>Construction type limitations</td>
</tr>
<tr>
<td>Occupant Load Factors</td>
<td>16.1.6 (Occupant Load)</td>
<td>See Table 11.3.1.2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concentrated use without fixed seating: 7 net sq. ft.</td>
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<td>Less concentrated use without fixed seating: 15 net</td>
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<td></td>
<td></td>
<td>Bench type seating: 1 person/18 inches</td>
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<tr>
<td></td>
<td></td>
<td>Fixed seating: number of fixed seats</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waiting spaces: See 16.1.6.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kitchens: 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Library stacks: 100</td>
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<tr>
<td></td>
<td></td>
<td>Library reading rooms: 50 net</td>
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<tr>
<td></td>
<td></td>
<td>Swimming pools: 50 sf of water surface</td>
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<td></td>
<td></td>
<td>Swimming pool decks: 30</td>
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<tr>
<td></td>
<td></td>
<td>Exercise rooms with equipment: 50</td>
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<tr>
<td></td>
<td></td>
<td>Exercise rooms without equipment: 30</td>
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<tr>
<td></td>
<td></td>
<td>Stages: 15 net</td>
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<td></td>
<td></td>
<td>Lighting &amp; access catwalks, galleries, gridirons: 100 net</td>
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<tr>
<td></td>
<td></td>
<td>Casinos &amp; similar gaming areas: 11</td>
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<tr>
<td></td>
<td></td>
<td>Skating rinks: 50</td>
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<tr>
<td></td>
<td></td>
<td>In areas not in excess of 10,000 sq. ft, the occupant load shall not exceed 1 person in 5 sq. ft.</td>
</tr>
<tr>
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<td></td>
<td>In areas in excess of 10,000 sq. ft., the occupant load shall not exceed 1 person in 7 sq. ft.</td>
</tr>
<tr>
<td></td>
<td>16.1.6.1 (Waiting Spaces)</td>
<td>Exits shall be provided for such waiting spaces on the basis of 1 person for each 3 sq. ft. of waiting space area.</td>
</tr>
</tbody>
</table>
### NFPA 5000 Technical Review

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<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td><strong>Means of Egress (MOE)</strong></td>
<td>16.2 (General)</td>
<td>All means of egress shall be in accordance with Chapter 11 (Means of Egress) and requirements in Chapter 16.</td>
</tr>
<tr>
<td><strong>Means of Egress Components</strong></td>
<td>16.2.2.1 (General)</td>
<td>MOE components are limited to types described in 16.2.2.2 thru 16.2.2.10. (i.e., Doors, Stairs, Smoke Proof Enclosures, Horizontal Exits, Ramps, Exit Passageways, Fire Escape Ladders, Alternating Tread Devices, Areas of Refuge)</td>
</tr>
<tr>
<td>16.2.2.2 (Doors)</td>
<td>Assembly occupancies with occupant loads of 300 or less in malls (see 27.4.4.5) shall be permitted to have horizontal or vertical security grilles or doors complying with Exception 2 to 11.2.1.4.1 (Swing &amp; Force to Open) on the main entrance/exits.</td>
<td></td>
</tr>
<tr>
<td>16.2.2.3 (Doors)</td>
<td>Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if it is panic hardware or fire exit hardware complying with 11.2.1.7 (Panic hardware &amp; Fire Exit hardware).</td>
<td></td>
</tr>
<tr>
<td>Exception 1: The requirement of 16.2.2.2.3 shall not apply to delayed egress locks as permitted in 16.2.2.2.5.</td>
<td></td>
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<tr>
<td>Exception 2: The requirement of 16.2.2.2.3 shall not apply to access-controlled egress doors as permitted in 16.2.2.2.6.</td>
<td></td>
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</tr>
<tr>
<td>16.2.2.4 (Doors)</td>
<td>Locking devices complying with exception 2 to 11.2.1.5.1 (Locks, Latches &amp; Alarm Devices) shall be permitted to be used on a single door or a single pair of doors serving as the main exit from assembly occupancies having an occupancy load not greater than 500. Any latching devices on such doors from assembly occupancies having an occupant load of 100 or more shall be released by panic hardware or fire exit hardware.</td>
<td></td>
</tr>
<tr>
<td>16.2.2.5 (Doors)</td>
<td>Delayed-egress locks complying with 11.2.1.6.1 (Delayed-Egress Locks) SHALL BE permitted on doors other than main entrance/exit doors.</td>
<td></td>
</tr>
<tr>
<td>16.2.2.6 (Doors)</td>
<td>Doors in the means of egress shall be permitted to be equipped with an approved access-control system complying with 11.2.1.6.2 (Access-controlled Egress Doors). Doors shall not be locked from egress side when assembly occupancy is occupied.</td>
<td></td>
</tr>
<tr>
<td>16.2.2.7 (Doors)</td>
<td>Revolving doors complying with the requirements of 11.2.1.10 (Revolving Doors) shall be permitted. The exceptions to 11.2.1.11.1 (Turnstiles) that permit turnstiles where revolving doors are permitted shall not apply.</td>
<td></td>
</tr>
<tr>
<td>16.2.2.8 (Doors)</td>
<td>No turnstiles or other devices that restrict the movement of persons shall be installed in any assembly occupancy in such a manner as to interfere in any way with required means of egress facilities.</td>
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</tr>
<tr>
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</tbody>
</table>
|          | 16.2.2.3.1 (Stairs)  | Stairs complying with 11.2.2 (Stairs) shall be permitted.  
Exception 1: Stairs serving seating that is designed to be repositioned shall not be required to comply with 11.2.2.3.1 (Stair Construction).  
Exception 2: The requirement of 16.2.2.3.1 shall not apply to stages & platforms as permitted by 16.4.5. |
|          | 16.2.2.3.2 (Catwalks, Gallery, & Gridiron Stairs) | Noncombustible grated stair treads & landing floors shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons. |
|          | 16.2.2.3.2.2 | Spiral stairs complying with 11.2.2.2.3 shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons. |
|          | 16.2.2.6 (Ramps) | Ramps complying with 11.2.5 shall be permitted.  
Exception: Ramps not part of an accessible means of egress and serve only stages or nonpublic areas and ramped aisles shall be permitted to have a slope not steeper than 1 in 8. |
<p>|          | 16.2.2.8 (Fire Escape Ladders) | Buildings protected by AS, 2 rooms or spaces separated from each other by smoke-resistant partitions in accordance with the definition of Area of refuge SHALL NOT BE REQUIRED. |
| Capacity of Means of Egress | 16.2.3 |
| Number of Exits | 16.2.4 |
| Dead Ends | 16.2.5 (Arrangement of Means of Egress) |
| Common Paths of Travel (CPT) | 16.2.5.1.1 |
| Travel Distance |  |
| Emergency Lighting |  |
| Protection | 16.3.1 (Protection of Vertical Openings) |
| Hazardous Area Protection | 16.3.2.1 (Service Equipment, Hazardous Operations or Processes, and Storage Facilities) |
| Interior Finish Requirements | 16.3.3 |
| Detection, Alarm, &amp; Communication Systems | 16.3.4 |
|            | 16.3.4.3 (Notification) |
| Extinguishment Requirements | 16.3.5.1 (Sprinkler Systems) |
|            | 16.3.5.2 (Standpipes) |
|            | 16.3.5.3 (Portable Fire Extinguishers) |
| Corridors | 16.3.6 |</p>
<table>
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<tr>
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<tr>
<td>Accessibility Requirements</td>
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<td>Performance Requirements</td>
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</tr>
<tr>
<td>Plumbing Requirements</td>
<td>16.5.1 (Utilities)</td>
<td>Utilities shall comply with the provisions of Chapter 49 (Interior Environment), Chapter 52 (Electrical Systems) &amp; Chapter 53 (Plumbing Systems)</td>
</tr>
<tr>
<td>Mechanical Requirements</td>
<td>16.5.2 (Heating, Ventilating, &amp; Air-Conditioning)</td>
<td>Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Chapter 50 (Mechanical Systems) &amp; Chapter 51 (Energy Efficiency).</td>
</tr>
<tr>
<td>Category</td>
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</tr>
<tr>
<td>Occupancy Business</td>
<td>28.1.3 (Classification of Business Occupancy)</td>
<td>Defined in Chapter 6.1.11.</td>
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<tr>
<td>Special Occupancy</td>
<td>28.1.2 (Multiple Occupancies)</td>
<td>All multiple occupancies in accordance with Section 6.2 (Multiple Occupancies) and 28.1.2 (Multiple Occupancies). Where there are differences in requirements for this chapter &amp; provisions for mixed occupancies (section 6.2.3) or separated occupancies (section 6.2.4), the requirements of Chapter 28 shall apply. See section 4.3.2.2 (prescriptive based option).</td>
</tr>
<tr>
<td>Fire Separation/ Mixed Use Requirements</td>
<td>28.4.1 (Underground or Limited Access Buildings)</td>
<td>Underground or limited access buildings shall be in accordance with Section 31.2 &amp; 31.3 (i.e., Occupancies in Special Structures).</td>
</tr>
<tr>
<td></td>
<td>28.4.2 (High Rise Buildings)</td>
<td>High Rise Buildings shall comply with Chapter 33 (High Rise Buildings).</td>
</tr>
<tr>
<td>Type of Construction Limitations</td>
<td>28.1.5 (Minimum Construction Req.)</td>
<td>Wall separating a parking structure from biz building SHALL BE a fire barrier having a fire resistance rating &gt; than or = to 2 hours.</td>
</tr>
<tr>
<td></td>
<td>28.1.2.2.2</td>
<td>Opening in fire barrier in enclosed parking structure are NOT required to have fire rated opening-protective when protected by AS. Opening in fire barrier in open parking structure are NOT required to have fire rated opening-protective when: 1 thru 6.</td>
</tr>
<tr>
<td>Occupant Load Factors</td>
<td>28.1.6 (Occupant Load)</td>
<td>See Table 11.3.1.2 – 100 square feet per person.</td>
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<tr>
<td>Means of Egress (MOE)</td>
<td>28.2</td>
<td>See Chapter 11 (Means of Egress) and requirements in Chapter 28.</td>
</tr>
<tr>
<td></td>
<td>28.2.1.3.1 (General)</td>
<td>Where 2 or more floors below street floor are occupied for biz use, the same stair or ramp SHALL BE permitted to serve each floor.</td>
</tr>
<tr>
<td></td>
<td>28.2.1.3.2 (General)</td>
<td>An open stair or inside open ramp shall be permitted to serve as a component of a required means of egress system from no more than 1 floor level below the street floor.</td>
</tr>
<tr>
<td></td>
<td>28.2.1.4 (General)</td>
<td>Floor levels BELOW street floor used only for STORAGE, HEATING, AND OTHER SERVICE EQUIPMENT and not subject to biz occupancy, shall meet means of egress requirements of Chap. 30 (Storage Occupancies)</td>
</tr>
<tr>
<td>Means of Egress Components</td>
<td>28.2.2.1 (General)</td>
<td>MOE components are limited to types described in 28.2.2.2 thru 28.2.2.12. (i.e., Doors, Stairs, Smoke Proof Enclosures, Horizontal Exit, Ramp, Exit Passageways, Fire Escape Ladders, Alternating Tread Devices, Areas of Refuge)</td>
</tr>
<tr>
<td></td>
<td>28.2.2.2.2 (Doors)</td>
<td>Locks complying with Exception 2 to 11.2.1.5.1 (Locks, Latches, &amp; Alarm Devices) SHALL BE permitted only on principal entrance/exit doors.</td>
</tr>
<tr>
<td></td>
<td>28.2.2.2.4 (Doors)</td>
<td>Delayed-egress locks complying with 11.2.1.6.1 (Delayed-Egress Locks) SHALL BE permitted.</td>
</tr>
<tr>
<td></td>
<td>28.2.2.2.5 (Doors)</td>
<td>Access-controlled egress doors complying with 11.2.1.6.2 (Access-controlled Egress Doors)</td>
</tr>
<tr>
<td></td>
<td>28.2.2.2.6 (Doors)</td>
<td>Where horizontal or vertical security or doors are used as part of the required means of egress from a tenant space, such grilles or doors shall comply with Exception 2 to 11.2.1.4.1 (Swing &amp; Force to Open).</td>
</tr>
<tr>
<td></td>
<td>28.2.2.12.2 (Areas of Refuge)</td>
<td>Buildings protected by AS, 2 rooms or spaces separated from each other by smoke-resistant partitions in accordance with the definition of Area of Refuge SHALL NOT BE REQUIRED.</td>
</tr>
<tr>
<td>Capacity of Means of Egress</td>
<td>28.2.3.1 (Capacity of MOE)</td>
<td>The capacity of MOE shall be in accordance with 11.3. Table 11.3.3.1 Capacity Factors: Stairways: 0.3 inch; Level Components &amp; Ramps: 0.2 inch.</td>
</tr>
<tr>
<td></td>
<td>28.2.3.2 (Capacity of MOE)</td>
<td>The clear width of any corridor or passageway serving an occupant load of 50 or &gt; SHALL NOT be less than 44 inches.</td>
</tr>
<tr>
<td></td>
<td>28.2.3.3 (Capacity of MOE)</td>
<td>Street floor exits SHALL BE sufficient for the occupant load of the street floor PLUS the required capacity of the stairs &amp; ramps discharging thru the street floor.</td>
</tr>
<tr>
<td>Number of Exits</td>
<td>8.2.4</td>
<td>The minimum number of exits shall be in accordance with Section 11.4, and not less than 2 separate exits.</td>
</tr>
<tr>
<td>Dead Ends</td>
<td>28.2.5.2.1 (Dead Ends)</td>
<td>In buildings protected by AS, dead ends SHALL NOT exceed 50 feet.</td>
</tr>
<tr>
<td></td>
<td>28.2.5.2.2 (Dead Ends)</td>
<td>In all other buildings, dead ends SHALL NOT exceed 20 feet.</td>
</tr>
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</tr>
<tr>
<td>Common Paths of Travel (CPT)</td>
<td>28.2.5.3.1</td>
<td>A CPT is permitted for the first 100 feet in a building protected by AS.</td>
</tr>
<tr>
<td></td>
<td>28.2.5.3.2</td>
<td>A CPT is permitted for the first 100 feet within a single tenant space having an occupant load not exceeding 30 persons.</td>
</tr>
<tr>
<td></td>
<td>28.2.5.3.3</td>
<td>In all other buildings, CPT SHALL NOT exceed 75 feet.</td>
</tr>
<tr>
<td>Travel Distance</td>
<td>28.2.6.1</td>
<td>In buildings protected by AS, the travel distance to exits SHALL NOT exceed 300 feet.</td>
</tr>
<tr>
<td></td>
<td>28.2.6.2</td>
<td>In all other buildings, the travel distance SHALL NOT exceed 200 feet.</td>
</tr>
<tr>
<td>Emergency Lighting</td>
<td>28.2.9.1</td>
<td>Emergency lighting shall be provided in accordance with 11.9 in any building where anyone of the following conditions exists:</td>
</tr>
<tr>
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<td></td>
<td>· The building is 2 or more stories in height above the level of exit discharge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· The occupancy is subject to 50 or more occupants above or below the level of exit discharge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· The occupancy is subject to 300 or more total occupants.</td>
</tr>
<tr>
<td></td>
<td>28.2.9.2</td>
<td>Emergency lighting in accordance with Section 11.9 shall be provided for all underground and limited access structures.</td>
</tr>
<tr>
<td>Protection</td>
<td>28.3.1.1.1 (Vertical Openings)</td>
<td>Any vertical opening shall be enclosed or protected in accordance with Section 8.12. Unenclosed vertical openings in accordance with 8.12.4.2 shall be permitted.</td>
</tr>
<tr>
<td></td>
<td>28.3.1.1.2 (Vertical Openings)</td>
<td>Exit access stairs shall be permitted to be unenclosed in 2 story single tenant spaces that are provided with a single exit in accordance with 28.2.4.4(5).</td>
</tr>
<tr>
<td></td>
<td>28.3.1.2 (Vertical Openings)</td>
<td>Floors below the street floor used for storage or other than business occupancy shall have NO unprotected openings to business occupancy floors.</td>
</tr>
<tr>
<td>Hazardous Area Protection</td>
<td>28.3.2.1 (General)</td>
<td>Hazardous areas including, but not limited to, areas used for general storage, boiler or furnace rooms, and maintenance shops that include wood working and painting areas shall be protected in accordance with Section 8.15.</td>
</tr>
<tr>
<td>Interior Finish Requirements</td>
<td>28.3.3.1 (General)</td>
<td>Interior finish shall be in accordance with Chapter 10 (Interior Finish)</td>
</tr>
<tr>
<td></td>
<td>28.3.3.2 (Interior Wall &amp; Ceiling Finish)</td>
<td>Interior wall &amp; ceiling finish materials shall be Class A or Class B in exits and in enclosed corridors furnishing access to exits; and Class A, B, or C in office areas.</td>
</tr>
<tr>
<td></td>
<td>28.3.3.3.1 (Interior Floor Finish)</td>
<td>Interior floor finish shall comply with Section 10.6.</td>
</tr>
<tr>
<td></td>
<td>28.3.3.3.2 (Interior Floor Finish)</td>
<td>Interior floor finish in exit enclosures shall not be less than Class II.</td>
</tr>
<tr>
<td>Category</td>
<td>Applicable Section(s)</td>
<td>Comment</td>
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</tr>
<tr>
<td>Detection, Alarm, &amp; Communication Systems</td>
<td>28.3.4.1 (General)</td>
<td>A fire alarm system in accordance with Section 55.2 shall be provided in any business occupancy where any one of the following conditions exists:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The building is 2 or more stories in height above the level of exit discharge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The occupancy is subject to 50 or more occupants above or below the level of exit discharge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The occupancy is subject to 300 or more total occupants.</td>
</tr>
<tr>
<td></td>
<td>28.3.4.2 (Initiation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>28.3.4.3.1 (Occupant Notification)</td>
<td></td>
</tr>
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<td>28.3.4.3.2 (Emergency Forces Notification)</td>
<td></td>
</tr>
<tr>
<td>Extinguishing Requirements</td>
<td>28.3.5.1 (Portable Fire Extinguishers)</td>
<td>Portable fire extinguishers shall be provided in every business occupancy in accordance with Section 55.6 (Fire Protection Systems &amp; Equipment – Portable Fire Extinguishers)</td>
</tr>
<tr>
<td></td>
<td>28.3.5.2 (Standpipes)</td>
<td>Class I standpipe systems shall be provided when required by 55.4.1 (Fire Protection Systems &amp; Equipment – Standpipe Systems)</td>
</tr>
<tr>
<td>Corridors</td>
<td>28.3.6.1</td>
<td>Where access to exits is provided by corridors, such corridors shall be separated from use areas by walls having a fire resistance rating of not less than 1 hour in accordance with Section 8.4, unless 1 of the following conditions exists:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Where exits are available from an open floor area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Within a space occupied by a single tenant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Within buildings protected throughout by an AS in accordance with Section 55.3 &amp; 55.3.2.</td>
</tr>
<tr>
<td></td>
<td>28.3.6.2</td>
<td>Unenclosed exits available from an open floor area or unenclosed exits that serve a space occupied by a single tenant shall not be required to be protected in accordance with 28.3.6.1.</td>
</tr>
<tr>
<td></td>
<td>28.3.6.3</td>
<td>Openings in corridor walls required by 28.3.6.1 to have a fire resistance rating shall be protected in accordance with Table 8.7.2.</td>
</tr>
<tr>
<td>Subdivision of Building Space</td>
<td>28.3.7</td>
<td></td>
</tr>
<tr>
<td>Accessibility Requirements</td>
<td>28.1.7 (Accessibility)</td>
<td>Accessibility shall be in accordance with Chapter 12 (Accessibility)</td>
</tr>
<tr>
<td>Existing Structures</td>
<td>28.1.1.1</td>
<td>The requirements of this Chapter shall apply to the following: (3) Alterations, modernization, or renovations of existing business occupancies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Existing buildings, or portions thereof, upon change of occupancy to a business occupancy.</td>
</tr>
<tr>
<td></td>
<td>28.1.1.2</td>
<td>Repairs, renovations, etc., shall comply with Chapter 28 OR Chapter 15 (Building Rehabilitation).</td>
</tr>
<tr>
<td>Category</td>
<td>Applicable Section(s)</td>
<td>Comment</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Plumbing Requirements</td>
<td>28.5.1 (Utilities)</td>
<td>Utilities shall comply with the provisions of Chapter 49 (Interior Environment), Chapter 52 (Electrical Systems) &amp; Chapter 53 (Plumbing Systems)</td>
</tr>
<tr>
<td>Mechanical Requirements</td>
<td>28.5.2 (Heating, Ventilating, &amp; Air-Conditioning)</td>
<td>Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Chapter 50 (Mechanical Systems) &amp; Chapter 51 (Energy Efficiency).</td>
</tr>
</tbody>
</table>
General notes/issues raised:

- Standards council chose not to use common code format. 5000 is spin off of 101 and will have identical occupancy chapters and publishing cycle.
- Code is occupancy driven—requirements derived from occupancy chapter.
- Critical path chart of sequences.
- How does this format accommodate mixed-use?
- Chapter 4 Statement of goals creates liability concerns
- Occupancy counts how are they handled?
- Reference to other NFPA-Standards as issue?
- 11.2.2.3.3 Area on projections or lips that could trip stair users egress requirements Ch. 11 very convoluted approach.
- Energy conservation requirements are not coordinated with occupancies.
- A consensus is code for industry-input: Code has many features lobbied for by special interests.
- Code does not facilitate design.
- Description of unsafe building vague language can lead to uncertain interpretations.
- Retroactivity (reserved) section 1.4.
- 1.7.5.2.2 Provided such continued use is not dangerous to life 1.7.5.1.
- Alterations or change of occupancy classification shall be in accordance with CH 15.
- Chapter 1 contains vague language that can have a profound impact on the legal implications of the code.
- Format of code does not provide coherent usable approach to determining requirements.
- Not as occupancy (use group) coordinated as the IBC.
- 4.5.6 Changes of use & occupancy shall be in accordance with Ch 15.
- Change of use or occupancy gets you to Chapter 15 where you remain: no reference to codes for new construction.
- Ch 28 Business occupancy scoping section has inconsistency re: alterations, etc.
- Protection level is not defined in table 7.3.5 (b).
- 17.3.7.1 A smoke barrier having a 1-hour fire resistance rating is a fire barrier.
- No differentiation of levels of storage or manufacturing in occupancies only in classification of hazards reference note d in height and area table.
- Definitions are repeated in separate chapters of the code.
- 27.2.5.8 and 27.3.2.1 contradict one another overrides general requirements.
- Discussion of integration of performance-based and alternative methods in NFPA code
- Concept of formatting in 5000 is positive but the execution is faulty. This format does not facilitate mixed use occupancies. Occupancies are coordinated with 101, not with common code format.
- Discussion of ICC architects involvement and NFPA full participation in committee process including voting. Participation in NFPA process is costly and more difficult. Public comments are heard by committee and at annual meeting.
- AIA has member on standards council and board of directors (2) at NFPA, none at ICC
- Architect on street: does he or she care which code they use? Asking the question is NFPA 5000 usable resulted in a unanimous agreement that it was not.
- Pitfalls: fodder for attorneys in Ch 4
Problems in Chapter I

- 1.7.2 AHJ Still have the authority to require that the laws, rules, and regulations of all other regulatory agencies having jurisdiction.
- Concern with how the code is applied to existing buildings which were not constructed under that code.
  1. Terminology varies for construction documents.
  2. There is no building anywhere that meets the applicable building code.
  3. Inclusion of 1&2 family code in body of code can be politically troublesome.
  4. Hypothetical cost analysis: more expensive to use NFPA due to alliance with IAPMO.
  5. Strength of 5000: The technical committees are made up of the groups of code development. 5000 may be better for owners as well.
  6. For the average architect, the format of 5000 is an advantage.
  7. Nevertheless there are no substantial differences between the two codes, and the disadvantages in Chapters 1&4 are reasons not to adopt 5000.
  8. NFPA 5000 and the NFPA fire code - coordinated?
  10. NFPA must be technically appropriate AIA will continue to advocate for one code.
  11. There are different percentages of allowed openings for different occupancies in Tables 7.3.5(2) & 7.3.5(b); why?

History of Single Code

  - Approved by AIA Board on 4 December 1974.
  - Publicly Released on 19 March 1975.
1983 AIA Codes & Standards Committee holds "One Code Forum", in Washington DC.
1984 AIA Codes & Standards Educational Conference held in Austin, Texas. "Architects Living With 3 Codes: An Issue of Public Safety."
1984 A New Program for Regulatory Reform, affirmed and included the "One Code" document.
1986 AIA BP&R White Paper on Committee Activities, including One Code movement.
  NFPA, ICBO, BOCA and SBCCI address the subject.
1991 AIA RESOLUTION - A SINGLE BUILDING CODE FOR THE UNITED STATES.
1994 Concept of ICC put in place.
1996 First I Code printed (Plumbing).
1999 NFPA announces their 5000 Building Code with IAPMO and Western Fire Chiefs as partners.
1999 AIA Board Codes Task Group Report "C: Comprehensive, Coordinated, and Contemporary"
  - Approved by AIA Board, December 1999
  - Published in January 2000
2000 First full family of I Codes printed.
2002 NFPA publishes 5000 in September.
2002 ICC 'integration' confirmed in Fort Worth, Texas, September.
2002 AIA publishes "C: 2002 - Comprehensive, Coordinated, and Contemporary"
NFPA 5000 - Critical Path

Chapter 1 - Administration
includes all criteria for application of the code; scope, purpose, application, equivalency, enforcement

Chapter 2 - Standards
lists all standards referenced and shows where they are referenced

Chapter 3 - Definitions
defines all technical terms used
3.3.58 Buildings - enclosed structures for an occupancy

Chapter 4 - General
4.3 Building Design and Life Safety Compliance Options.
4.3.2 - prescriptive (Ch 1-4 & 6-55)
4.3.3 - performance (Ch 1-5)

Chapter 5 - Performance-Based Option

Chapter 6 - 14 Construction Limits
6 - occupancies,
7 - type of construction,
8 - fire resistance,
9 - (reserved)
10 - interior finishes,
11 - means of egress,
12 - accessibility,
13 - encroachments
14 - safeguards during construction

Chapter 15 - Buildings Rehabilitation
repair, renovation, modifications, reconstruction, change of occupancy, additions, historic buildings

Chapter 16 - 30 Occupancies
16 - assembly,
17 - educational,
18 - day-care,
19 - health care,
20 - ambulatory health care,
21 - detention and correctional,
22 - one- and two-family dwellings,
23 - lodging or rooming house,
24 - hotels and dormitory,
25 - apartment,
26 - residential board and care,
27 - mercantile,
28 - business,
29 - industrial,
30 - storage

Chapter 31 - 55 - Design, Configuration and Construction Materials
31 - occupancies in special structures
32 - special construction
33 - high-rise
34 - high hazard
35 - structural design
36 - soils, foundations, retaining
37 - exterior walls
38 - roof assemblies and structures
39 - floor-resistant design
40 - quality assurance
41 - concrete
42 - aluminum
43 - masonry
44 - steel
45 - wood
46 - glass and glazing
47 - gypsum board, lath and plaster
48 - plastics
49 - interior environment
50 - mechanical systems
51 - energy efficiency
52 - electrical systems
53 - plumbing systems
54 - elevators and conveying
55 - fire protection systems

EXISTING BUILDINGS
1.3.4 Existing Buildings and Structures
1.7.5 Compliance of Buildings and Structures
alterations, change of occupancy, unsafe
1.7.5.3 Unsafe Buildings and Fire Hazards
1.7.5.3.1.2 (3) not having egress per this code

3.3.58.7 Existing Building - erected or authorized prior to the effective date of the code

4.3.2.2 - specific overrides general
4.5.2 Historic Buildings - Chapter 15
4.5.6 Change of Use - Chapter 15
News

Hispanic Contractors, ICC Partnership Promotes Building Safety

September 26, 2002 For further information, contact:
5203 Leesburg Pike, Suite 600
Falls Church, VA 22041
(703) 931-4533
Sergio Barrueto
(562) 699-0541, ext.3298

A memorandum of understanding between the United States Hispanic Contractors Association (USHCA) and the International Code Council® (ICC® ) will promote construction safety across the United States. The agreement will be signed on September 26 at 10:00 a.m. in the Senators Press Conference Room of the State Capitol in Austin, TX.

“The United States is culturally diverse, and the construction industry is representative of that diversity,” said Bob D. Heinrich, Chief Executive Officer of ICC. “Ninety-seven percent of American cities, counties and states that adopt building and safety codes use codes published by ICC and its members. Working with the Hispanic Contractors Association to offer educational programs and training in Spanish benefits the construction industry and America. Improving understanding of the codes and how they are enforced positively impacts public safety.

"Building inclusion by eliminating exclusion is something that the U.S. Hispanic Contractors Association strongly believes in,” said Frank Fuentes, Chairman of USHCA. “By translating the building codes into Spanish, we are removing barriers of communication in the construction industry and providing access of opportunity to Hispanic contractors nationwide.”

The MOU has clear objectives: to establish lines of communications and stronger relationships between the two constituencies, to develop programs that promote understanding between multicultural workers in the construction industry and public safety officials, and to advance training and educational opportunities by providing multilingual publications on construction safety related issues.

“There are more than six million Hispanic speakers in Texas and the Hispanic population in the U.S. will approach or even surpass 40 million by the year 2005, according to the U.S. Census Bureau,” said Sergio M. Barrueto, P.E., Manager of International Services for ICC. “That would make the United States the second largest Spanish speaking nation in the world after Mexico. It means an increase in the number of Hispanic construction workers and an increase in Hispanic homeowners. Establishing a relationship with the
USHCA and offering ICC publications and services in Spanish makes sense and helps Hispanic construction workers to achieve the American dream.”

A national trade association based in Austin, with a membership of 5,000, USHCA is dedicated to the advancement and participation of Hispanic owned construction businesses in the U.S. With more than 133,000 Hispanic owned construction companies across the country, USHCA represents member issues to government and industry.

As the developer of the International Codes™, the first set of coordinated and comprehensive construction and fire codes for use nationwide, ICC provides many services to the construction industry, including: certification, educational programs, seminars and training. To improve communications between multicultural workers in the construction industry, ICC (through its member ICBO) released the Constructionary™ - Construccionario™, a pocket-size dictionary of up-to-date construction terms and phrases in both Spanish and English.

ICC also worked with Senator Christopher J. Dodd (D-Conn.) and Representative Rosa L. DeLauro (D-Conn.) to introduce the “Code and Safety for the Americas” (CASA) Act to improve building practices in Latin America. The CASA Act would authorize $3 million over two years from general foreign aid funds to translate the International Building Code®. The bill also calls for pilot training programs for architects and engineers in Ecuador and El Salvador. The translated IBC® and training programs would be useful for the Hispanic construction community in the U.S. as well.

The ICC was founded in 1994 as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc.® (BOCA®), International Conference of Building Officials® (ICBO®), and Southern Building Code Congress International, Inc.® (SBCCI®). Since the early part of the last century, these nonprofit organizations have developed the three sets of model codes used throughout the United States.
DOE Signs Residential Determination

Designers, Builders, Owners, Code Officials, Environment Will Benefit

Energy Secretary Bill Richardson announced January 4, 2001 that the Department of Energy (DOE) has determined that the 2000 edition of the International Energy Conservation Code (IECC) will substantially improve the energy efficiency of low-rise residential buildings if adopted by all the states.

"Provisions of the 2000 edition of the IECC will improve residential energy efficiency and make building code compliance simpler and easier for designers, builders, and code officials," said Secretary Richardson. "Buildings are more likely to have all the required energy efficiency features when the code is easy to use and interpret. And by reducing energy use, these codes will reduce power plant emissions and benefit the environment. If all the states adopt this upgraded model code, the energy savings would be substantial."

DOE determined that the 2000 IECC code would improve energy efficiency after comparing it with the 1999 Model Energy Code and the 1996 IECC, fulfilling DOE’s mandate under the Energy Conservation and Production Act, as amended, to determine if successors to the Model Energy Code (MEC) will improve residential energy efficiency. Various editions of the Model Energy Code, or codes derived from it, have been adopted by 25 states. Due to this determination, states have two years to inform the Department whether it is appropriate to update their residential code to the 2000 IECC. If a state reports that it is not appropriate to revise its code, the state must explain why. However, States are not required to adopt the IECC code. States that inform the Department about their decision on updating to the 2000 IECC are excused from reporting their decision about adopting the 1998 IECC.

The Department offers a range of services and products to help states update, implement, and enforce building energy codes. State Energy Program grants provide states with resources to design and implement more energy efficient codes. DOE also provides technical assistance, including economic analyses, code comparisons, training on code compliance software, and other specialized support.

The Department’s Building Standards and Guidelines Program (BSGP) website http://www.energysaved.gov/buildingsstandards/standardbuildings/determinations.html, contains information on building energy codes, including downloadable versions of MECcheck™, code compliance software that provides a fast and easy way for designers, builders, and code officials to determine compliance with energy codes. Information and assistance about building energy codes is available by calling BSGP at 1-800-270-2633 or sending an e-mail message to techsupport@bsgp.pnl.gov.
Defense Department Chooses International Building Code for Military Construction

The U.S. Department of Defense (DoD) selected the International Building Code (IBC) as a primary reference in its Unified Facilities Criteria (UFC). Following a multi-year review, the new guidance document—UFC 1-200-01, Design: General Building Requirements—incorporates private sector standards, including the 2000 IBC, into a single model building code for design and construction of all military projects.

DoD’s policy is to select the best model code provisions and industry standards available for military use by all DoD components. The UFC 1-200-01 continues that policy and incorporates the 2000 IBC, with modifications and limitations. The 2000 IBC is part of a comprehensive, coordinated set of codes produced by the International Code Council (ICC) and has been widely adopted by states and municipalities across the country. The IBC represents minimum standards that must be met by the private sector construction industry to safeguard public health and safety.

“DoD has been referencing some provisions of the model codes for years, but a lack of a common, national code inhibited our full use of these codes,” said Naval Facilities Engineering Command (NAVFAC) Engineering Innovation and Criteria Office Director David Curfman. “Now, with a single model code available, we can use the best lessons learned from the private sector and ensure consistent design DoD-wide.”

In 2000, DoD began to consolidate and unify its design and construction technical criteria. DoD established the Tri-Service Engineering Senior Executive Panel and Unified Design Guidance Coordinating Panel (UDGCP) to help achieve its goal. Staff from the office of the Secretary of Defense, the U.S. Army Corps of Engineers, NAVFAC and the Air Force Civil Engineer Support Agency served on the panels. Curfman chairs the UDGCP Panel.

The Tri-Service Panels incorporated existing facility-related reference materials and utilized non-government standards to the greatest extent possible. The National Technology Transfer and Advancement Act of 1995 requires federal use of private sector consensus standards when practical. The law has many objectives including creating safer structures. The law also strives to reduce reliance on federal standards and use industry standards when there is potential to simplify contracting, improve timeliness and cost effectiveness.
“The International Code Council is proud that its codes now serve our government as well as the private sector,” said ICC CEO Bob Heinrich. “The goal is to produce one set of codes to protect public safety throughout America. The military usage of ICC codes puts the nation one step closer to accomplishing that.”

Using private industry standards for DoD projects promotes communication in the marketplace, improves competition, and results in cost savings. The military often requires higher standards to achieve more stringent life-cycle performance, and constructs facilities that do not exist in the private sector. Modifications to the model code provisions are based on unique military requirements. States and municipalities also may add provisions to the codes to meet local needs.

For more information about the IBC and other codes produced by the ICC, go to www.iccsafe.org. For a copy of the UFC, visit http://www.efdlant.navfac.navy.mil/criteria Select “Publications”, click on “Design Criteria”, then “Unified Facilities Criteria” and select “UFC 1-200-01” to download the document in PDF.

The ICC was founded in 1994 as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). Since the early part of the last century, these nonprofit organizations have developed the three sets of model codes used throughout the United States.

# # #
WASHINGTON, Jan 24 – The U.S. Department of Housing and Urban Development has officially endorsed a new building code document that clarifies the federal Fair Housing Accessibility Guidelines for builders and helps ensure that new apartments and condominiums are accessible to people with disabilities. The endorsement has been eagerly awaited by the nation’s home builders who urged HUD’s action and have given it their strong support.

“We applaud HUD for its commitment to completing the difficult process of endorsing building code language to clarify the requirements in the Fair Housing Accessibility Guidelines,” said Robert Mitchell, a home builder from Rockville, Md., and president of the 203,000-member National Association of Home Builders. “For the first time since the fair housing accessibility law was enacted, this document puts the federal accessibility requirements where they belong – in a building code. Now builders and architects can know for sure that they are in compliance with the law.”

The ICC “Code Requirements for Housing Accessibility” (CRHA) is published by the International Code council (ICC) and was developed through a cooperative effort spearheaded by NAHB and ICC, which was also included HUD, building industry representatives and disability rights groups. “This is a landmark achievement for NAHB and one we are very proud of because it benefits everyone involved,” said Mitchell.

The CRHA code clearly communicates in building code language the federal multifamily construction accessibility requirements contained in the HUD Fair Housing Accessibility Guidelines under the Fair Housing Amendments Act of 1988. The endorsed CRHA is available for immediate adoption by local and state jurisdictions as part of their local building code.

-more-
Having local building code requirements consistent with the accessibility requirements of the Fair Housing Act will significantly increase the amount of accessible multifamily housing available, Mitchell noted. “The CRHA will play an important role in increasing the nation’s inventory of accessible housing and assuring that anyone who wants an accessible unit can find one.”

About NAHB: The National Association of Home Builders is a Washington-based trade association representing more than 203,000 professionals involved in home building, remodeling, multifamily construction, property management, subcontracting, design, housing finance, building product manufacturing and other aspects of residential and light commercial construction. Known as the ‘voice of the housing industry,’ NAHB is affiliated with more than 800 state and local home builders associations around the country. NAHB’s builder members will construct about 80 percent of the more than 1.5 million new housing units projected for 2000. During a typical year, residential construction accounts for about five cents of every dollar spent in the U.S. economy, making home building one of the largest and most influential industries in the country.

NS2001-017

###
HUD GRANT ENCOURAGES MODEL BUILDING CODE CHANGES TO HELP INCREASE HOUSING OPPORTUNITIES FOR PEOPLE WITH DISABILITIES

WASHINGTON – The Department of Housing and Urban Development today announced it has awarded nearly $900,000 in an educational grant to help communities ensure that more apartments and condominiums are built to be accessible to people with disabilities. The grant is designed to inform the public about design and construction guidelines under the Fair Housing Act and to encourage local governments to adopt revised model building codes.

“Access to housing is critical to access to jobs and living independently,” said HUD Secretary Mel Martinez. “Education about building codes is a key element in removing some of the unnecessary challenges faced daily by people with disabilities.”

The $891,000 grant is going to the International Code Council (ICC). Based in Falls Church, Virginia, the ICC is a nonprofit organization that represents building code enforcement officials, architects, engineers, designers and contractors.

The ICC will work in partnership with the National Organization on Disability in a national education and outreach campaign to educate housing industry providers, builders, contractors, real estate agents, lenders; disability and fair housing advocates; and, state and local governments of the regulations and requirements of the Fair Housing Act. The grant will also be used to encourage local and state governments to adopt “model building” codes that are consistent with the Fair Housing Act and its implementing regulations.

Local governments use these model codes, developed by private organizations, as a starting point for adopting their own building and safety codes, taking into consideration needs particular to their location, such as climate or proximity to earthquake fault lines. Building inspectors for these local governments issue construction and occupancy permits based on compliance with these codes.

-more-
A HUD-commissioned study has found that if builders comply with the Fair Housing Act during construction, their dwelling-unit costs rise by only about one-half of one percent. However, remodeling a building that has already been constructed can cost a great deal more.

The Fair Housing Act, enacted in 1968, was amended in 1988 to outlaw housing discrimination against people with disabilities, among other things. In 1989, HUD issued its regulations implementing the Act's design and construction requirements to make sure that apartments and condominiums were accessible for people with disabilities, especially those who use wheelchairs. In March 1991, after consideration of extensive public comment from architects, developers, builders, persons with disabilities, and other interested groups, HUD published the "Fair Housing Accessibility Guidelines," which set forth specific guidelines for designing dwelling units consistent with the Act.

The Fair Housing Act applies to all dwelling units in apartment buildings built for first occupancy after March 13, 1991, which have an elevator and four or more units. If the building has four or more units but does not have an elevator the law applies to all ground floor units. The Act requires that:
• Public and common areas must be accessible to persons with disabilities
• Doors and hallways be wide enough for people in wheelchairs
• Routes into and through the unit be accessible
• Light switches, electrical outlets, thermostats and other environmental controls be accessible
• Bathroom walls are reinforced to allow later installation of grab bars, and
• Kitchens and bathrooms are usable by people in wheelchairs.

Since 1989, HUD has been providing education and technical assistance on the design and construction requirements of the Fair Housing Act. Many builders, however, contended that they historically rely only on their local building code requirements. Congress did not change building codes accessible design and construction requirements when it amended the Fair Housing Act. However, the legislation does require HUD to encourage state and local units of government to take steps to incorporate the Act’s requirements into their building plan review process. In 1999, HUD agreed to review the nation’s four model building codes for equivalency to the Act’s design and construction requirements. After making suggested revisions, HUD last year endorsed the ICC’s “Code Requirements for Housing Accessibility”, calling it a “safe harbor” design standard for builders.

Martinez awarded the grant under HUD’s National Model Codes Partnership segment of its Fair Housing Initiatives Program. Among other activities, the ICC will use the grant to conduct regional educational seminars around the country for state and local lawmakers, code enforcement officials, inspectors, architects, and engineers.

Anyone who believes they have experienced housing discrimination is asked to call HUD’s Housing Discrimination Hotline at 1-800-669-9777, TDD 1-800-927-9275. They can also visit HUD’s fair housing website at www.hud.gov/complaints/housediscrim.cfm.
Dear Colleagues:

The International Code Council's Code Requirements for Housing Accessibility (CRHA) is a landmark document. It is a giant step forward for ICC, disabled persons across America, the housing industry, and for HUD.

The CRHA will serve as a safe harbor for compliance with the accessibility requirements of the Fair Housing Act. The document may be used by state and local jurisdictions, as well as builders and architects, in designing and constructing new multifamily housing that is covered under the Fair Housing Act.

Twelve years ago, the Fair Housing Act was amended to include disabled persons as a covered class. At the time, the nation recognized the need for increased housing accessibility. It was both the right thing to do and it made good business sense.

With this document we put that consensus into practice. It brings everyone onto the same page. It will, for the first time, give builders in clear building code language guidance on how to build housing that meets the standards of the Fair Housing Act. It takes HUD's guidelines—issued in 1991—the Fair Housing Act's design and construction requirements and puts them in a place where one of the places builders go for such guidance—building codes.

While the code CRHA will serve as an additional safe harbor for builders in meeting the accessibility requirements of the Act, HUD is not attempting to invalidate any existing or future state or local laws that may require greater accessibility for persons with disabilities than is contained in the Fair Housing Act. The CRHA is an abstraction of the accessibility provisions of the International Building Code 2000 as amended by the 2001 Supplement to the International Code. HUD also recognizes the following as safe harbors for compliance: HUD's March 6, 1991 "Final Fair Housing Accessibility Guidelines; the accessibility requirements in the Act and the Department's regulations, or the Guidelines, and the appropriate requirements of any one of these editions—1986, 1992 or 1998—of the American National Standard Institute's (ANSI) A117.1 standard, Accessible and Usable Buildings and Facilities; HUD's Fair Housing Act Design Manual; Code Requirements for Housing Accessibility 2000, approved and published by the International code Council, October, 2000, or the International Building Code 2000, as amended by the IBC 2001 Supplement, published by the International Code Council.
The safe harbor endorsement status of the CRHA is also not an attempt by HUD to advocate impose requirements that exceed standards of the Act. The National Association of Home Builders (NAHB) has identified five areas of the CRHA it believes exceed HUD’s guidelines the minimum standards set forth in the Final Fair Housing Accessibility Guidelines in NAHB’s Fair Housing Code Equivalency Guide sent to HUD on January 17, 2001 and HUD concurs with this analysis. HUD has analyzed NAHB’s Fair Housing Code Equivalency Guide which notes these five areas and does concur with them.

With the publication of these documents, HUD continues to be committed to the goal of increasing housing opportunities for persons with disabilities. We are committed to continuing our efforts to provide guidance to the housing industry on the accessibility requirements of the Act.

This is an important achievement. Congratulations to all concerned — the International Code Council, the disabled community, advocates for persons with disabilities, and the nation’s builders — for their hard work and their commitment to resolving this issue. I believe we all share a common goal: eliminating discrimination against persons with disabilities — and eliminating the structural barriers to housing choice that stand in the way of their being full citizens in our society.

Sincerely,

Andrew Cuomo
Mr. William Worn, AIA  
William Worn Architects, P.C.  
401 W. Superior, Suite 3F  
Chicago, IL  60610

Dear Mr. Worn:

On behalf of Secretary Cuomo, thank you for your letter of June 8, 2000 concerning the Department’s decision to support inclusion of Part II of Appendix C in the International Code Council’s (ICC) Code Requirements for Housing Accessibility (CRHA). You state you believe that Part II is a threat to the already very limited provisions for accessible housing.

In 1997, the model code organizations requested the Department review four model building codes and identify provisions of the codes that are inconsistent with the Fair Housing Act’s accessibility requirements. The Department reviewed the International Building Code (IBC), Uniform Building Code, Standard Building Code and BOCA National Building Code. After reviewing public comments on its draft report, including comments from several disability advocates, the Department issued its Final Report of HUD Review of Model Building Codes on March 23, 2000. The Final Report identifies variances in each code and recommends revisions in code language to make the codes consistent with the accessibility requirements of the Act.

The Department believes that state and local jurisdiction adoption of model codes that are consistent with the Act will significantly increase builder compliance with the Act and the supply of accessible housing for persons with disabilities. The ICC developed the CRHA to compile in one document the provisions of the 2000 IBC that relate to or contain the design and construction requirements of the Act. The CRHA also contains three appendices that describe how existing language of the CRHA and 2000 IBC should be revised to be fully consistent with the Act:

(1) Appendix A contains model building code language that must be substituted for certain sections of the CRHA language to make the CRHA fully consistent with the Act; (2) Appendix B contains model building code language that must be substituted for certain sections of the 2000 IBC to make the 2000 IBC fully consistent with the Act; and (3) Appendix C, Part I contains commentary on some of the provisions set forth in Appendix A.

If a state or local jurisdiction adopts the CRHA as modified by Appendix A and explained in Appendix C Part I, without waiving any of the code requirements, the resulting code would constitute a “safe harbor” for compliance with the Act.
During the Department's review of the four model building codes, the National Association of Home Builders (NAHB) identified many provisions of the 2000 IBC that it believed exceeded the requirements of the Department's Fair Housing Accessibility Guidelines and requested the Department review NAHB's "exceeds analysis." The Department is the Government agency responsible for interpreting the Act, and has an obligation to consider all public comments. It was in this context that the Department reviewed NAHB's "exceeds analysis." As a result of our initial comments, the NAHB revised its analysis to reflect that there are only five areas where the CRHA exceeds the Guidelines. NAHB also provided related proposed code text language consistent with its "exceeds analysis."

The Department reviewed NAHB's final "exceeds analysis" and determined that it was accurate. The "exceeds analysis" became Part II of Appendix C. The Department concluded that it was in the public interest to provide a full range of information to the interested public concerning the requirements of the Act, including information concerning provisions that exceed the requirements of the Guidelines. Therefore, if a state or local government adopts the CRHA as modified by Appendix A, and explains in Appendix C, Part I, without waiving any of the code requirements, and also adopts the corresponding provisions of Appendix C, Part II, any builder or developer would be in compliance with the Guidelines. However, state and local governments are also free to exclude Part II of Appendix C of the CRHA as they deem appropriate, consistent with the safe harbor criteria outlined above.

The Department remains committed to the goals of increasing housing opportunities for persons with disabilities and of providing guidance to the home building industry on the accessibility requirements of the Act. We appreciate your concern on this issue and your continued commitment to promote accessible housing.

Sincerely,

Amy E. Wilkinson
General Deputy Assistant Secretary for
Fair Housing and Equal Opportunity
Mr. Richard P. Kuchnicki  
Executive Vice President  
International Code Council, Inc.  
5203 Leesburg Pike, Suite 600  
Falls Church, VA 22041

Dear Mr. Kuchnicki:

On behalf of Secretary Cuomo, we present the Department’s “Best of the Best” award, which is awarded to the top 100 Best Practices nominees, to the International Code Council, Inc. (ICC). The ICC is being presented with this award because of its tremendous contributions in assisting the Department in its review of four model building codes (the International Building Code, BOCA National Building Code, Uniform Building Code, and the Standard Building Code) for consistency with the accessibility provisions of the Fair Housing Act (the Act).

ICC made several significant contributions to the model building code review. First, ICC, when it was known as the Council of American Building Officials (CABO), contacted the Department in 1997 along with the three model building code organizations and several building industry organizations about the Department’s reviewing the model building codes and the draft International Building Code, scheduled for completion in 2000, for consistency with the accessibility requirements of the Act. ICC then prepared a matrix that compared the four model building codes to the Act’s accessibility provisions and submitted the matrix to the Department for review.

After the Department completed its preparation of the Draft Report of HUD Review of Model Building Codes (Draft Report), ICC placed the Department’s Draft Report on its web site. In addition, ICC placed on its web site the relevant chapters of the model building codes discussed in the Draft Report so that members of the public could review them at no charge before submitting their comments to the Draft Report. ICC cooperated with the Department in establishing a link between the Department’s model codes web site and ICC’s web site to further facilitate the public’s review of the Draft Report. Placing relevant sections of the model building codes on the web site during the comment period allowed individuals and organizations that would not otherwise have had access to them to review them and, as a result, submit informed comments on the Draft Report.

ICC also assisted the Department in understanding the technicalities of model building code language and proposed language that would assist in making those sections
of the model codes found to be inconsistent with the Act consistent. ICC’s efforts aided the Department in formulating certain recommendations set forth in its Final Report of HUD Review of Model Building Codes (the Final Report).

The Final Report is aiding state and local governments in amending or adopting their own building codes and standards in a manner consistent with the accessibility requirements of the Act. Because builders rely on their state and local building codes to ensure they are meeting all applicable requirements, we are confident that this effort will result in increased accessible housing.

Congratulations on this well deserved award. Thank you for your ongoing efforts in promoting accessible housing for persons with disabilities.

Sincerely,

Amy E. Wilkinson
General Deputy Assistant Secretary
for Fair Housing and Equal Opportunity
A Resolution Regarding the Adoption and Use of the International Codes as Promulgated by the International Code Council

By Eastern States Building Officials Federation

Whereas, the model codes system in the United States has been successful in preserving the public health, safety and welfare while promoting regional consistency in regulations for our built environment; and

Whereas, improvements in both communication and transportation continue to facilitate national and global trade in construction and construction-related manufacturing industries; and

Whereas, the model code system of development has been, and will continue to be, based on scientifically based safety criteria which are universal in their application; and

Whereas, the consensus procedures of the International Code Council (ICC) ensure the participation in the development of the International Codes by all interested parties with the final determination of code provisions remaining beyond the control of vested and proprietary interests and reserved for those dedicated to the preservation of the public health, safety and welfare—Code Officials; and

Whereas, the International Code Council is an organization comprised of Building Officials and Code Administrators International, Inc., International Conference of Building Officials, and Southern Building Code Congress International, Inc., all of whose model code documents are respected and adopted throughout the country; and

Whereas, the purpose and mission of the Eastern States Building Officials Federation is to promote uniformity in codes and enhancing the efficiency and effectiveness of code enforcement, both of which are facilitated by the adoption of a comprehensive and coordinated family of International Codes; now therefore

Be it resolved, that at a meeting of the members on this 16th day of October, 1998, the Eastern States Building Officials Federation did hereby endorse the International Code Council and its family of International Codes and encourage their adoption and use by all units of local, state and federal government; and

Be it further resolved, that the members here assembled encourage all of their colleagues to bring the message and content of this resolution to the attention of the officials tasked with enacting the laws intended to protect the public from the inherent threats and dangers in the built environment.

Be it further resolved, that the members here assembled are committed to supporting the International Code Council and the International Codes through attendance at, and participation in, the ICC Code Development Processes to the extent possible.

Resolution was adopted this 16th day of October, 1998.

[Signature]
President

[Signature]
Secretary
RESOLUTION NO. 8481-03

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GARDEN GROVE SUPPORTING STATEWIDE ADOPTION OF THE INTERNATIONAL CODES.

WHEREAS, the Uniform Codes, published by the International Conference of Building Officials (ICBO) and adopted by the State of California have formed a foundation of life safety for all Californians for several decades, and

WHEREAS, in 1993, the nation’s three model building code groups including ICBO, the Building Officials and Code Administrators International (BOCAI) and the Southern Building Code Congress International (SBCCI) joined together to form the International Code Council (ICC), chose to abandon their individual codes in favor of producing a single code, and, realized that goal with publication of the 2000 International Codes©, and

WHEREAS, these codes were developed with over 150 years of collective experience using a fully participatory process which solicits input from industry, the design community and local code officials, and

WHEREAS, in 2002, the State of California, Building Standards Commission readopted the 1997 Uniform Building Code which references antiquated earthquake design standards instead of the technically advanced International codes, and

WHEREAS, this action has caused local jurisdictions to scramble to adopt remedial amendments which reduces code application uniformity and increases costs to the construction industry, and

WHEREAS, the California Building Standards Commission is just now beginning the adoption process for the 2004 California Codes, which, with the current projected schedule and no outside challenges, will become effective at the local level in mid-2006, and

WHEREAS, the following organizations have adopted positions of support of the International Codes:

International City Managers Association,
National Association of Home Builders,
California Building Industry Association,
American Institute of Architects,
Building Owners and Managers Association,
National Apartment Association,
National Multi-Housing Council,
and numerous others.

NOW THEREFORE, BE IT RESOLVED, that the City Council of the City of Garden Grove hereby:

1. Declares its support for the International Family of Codes as published by the International Code Council, and
2. Directs the City Manager to forward this resolution and cover letter to Governor Gray Davis and the California Building Standards Commission urging them to move forward with adoption of the International Codes as the basis for the 2004 edition of the California Codes, and

3. Directs the City Manager to forward this resolution and cover letter to the League of California Cities in an effort to encourage their membership to join Garden Grove in this effort, and

4. Encourage the City's Building Services Manager to continue efforts to represent the citizens of Garden Grove in the pursuit, to the greatest extent possible, of adoption of the International Codes by the California Building Standards Commission for the 2004 California Codes.

Adopted this 14th day of January 2003

MAYOR

ATTEST:

CITY CLERK

STATE OF CALIFORNIA )
COUNTY OF ORANGE ) SS:
CITY OF GARDEN GROVE )

I, RUTH E. SMITH, City Clerk of the City of Garden Grove, do hereby certify that the foregoing Resolution was duly adopted by the Council of the City of Garden Grove, California, at a meeting held on the 14th day of January 2003 by the following vote:

AYES: COUNCILMEMBERS: (5) DALTON, LEYES, ROSEN, TRAN, BROADWATER
NOES: COUNCILMEMBERS: (0) NONE
ABSENT: COUNCILMEMBERS: (0) NONE

CITY CLERK
CONFERENCE RESOLUTION 98-5

A RESOLUTION REGARDING THE ADOPTION AND USE OF THE INTERNATIONAL CODES AS PROMULGATED BY THE INTERNATIONAL CODE COUNCIL

BY THE MISSOURI ASSOCIATION OF BUILDING OFFICIALS & INSpectORS

WHEREAS, the model codes system in the United States has been successful in preserving the public health, safety and welfare while promoting regional consistency in regulations for our built environment; and

WHEREAS, improvements in both communication and transportation continue to facilitate national and global trade in construction and construction-related manufacturing industries; and

WHEREAS, the model code system of development has been, and will continue to be, based on scientifically based safety criteria which are universal in their application; and

WHEREAS, the consensus procedures of the International Code Council (ICC) ensure the participation in the development of the International Codes by all interested parties with the final determination of code provisions remaining beyond the control of vested and proprietary interests and reserved for those dedicated to the preservation of the public health, safety and welfare; Code Officials; and

WHEREAS, the International Code Council is an organization comprised of Building Officials and Code Administrators International, the International Conference of Building Officials, and the Southern Building Conference International, all of whose code documents are respected and adopted throughout the country; and

WHEREAS, the purpose and mission of the Missouri Association of Building Officials and Inspectors is to promote uniformity in codes and enhance the efficiency and effectiveness of code enforcement, both of which are facilitated by the adoption of a comprehensive and coordinated family of International Codes; now therefore

BE IT RESOLVED, that at the Annual Conference of the members on this 24th day of October, 1998, the Missouri Association of Building Officials and Inspectors did hereby endorse the International Code Council and its family of International Codes and encourage their adoption and use by all units of local, state and federal government; and

BE IT FURTHER RESOLVED, that the members here assembled encourage all of their colleagues to bring the message and content of this resolution to the attention of the officials tasked with enacting the laws intended to protect the public from the inherent threats and dangers in the built environment.

BE IT FURTHER RESOLVED, that the members here assembled are committed to supporting the International Code Council and the International Codes through attendance at, and participation in, the ICC Code Development Processes to the extent possible.

Resolution passed in Conference this 24th Day of October, 1998.

[Signature]
MABOI President 1997-98

[Signature]
MABOI President 1998-99

ATTEST

[Signature]
Executive Secretary
RESOLUTION NO. 03-R-01

A RESOLUTION OF THE TENNESSEE BUILDING OFFICIALS ASSOCIATION
BOARD OF DIRECTORS

Supporting Adoption of the International Codes – SB 1690 (Trail) & HB 882 (Hood)

WHEREAS, the Standard Codes, published by the Southern Building Code Congress International and adopted by the State of Tennessee and local governments throughout Tennessee, have formed a foundation of life safety for all Tennesseans for several decades, and

WHEREAS, in 1994, the nation’s three model building code groups, Southern Building Code Congress International (SBCCI), International Conference of Building Officials (ICBO), and Building Officials and Code Administrators International (BOCA) joined together to form the International Code Council (ICC), discontinuing their individual codes in favor of a single code, and, realized that goal with publication of the 2000 International Codes, and

WHEREAS, these codes were developed with over 150 years of collective experience using a fully participatory governmental consensus process which solicits input from industry, the design community and local code officials, and

WHEREAS, the following organizations have adopted positions of support of the International Codes:

- Tennessee Municipal League
- National Association of Home Builders
- American Institute of Architects
- National Multi-Housing Council
- Building Owners and Managers Association
- National Apartment Association
- International City Managers Association
- and many others

NOW THEREFORE, BE IT RESOLVED THAT THE TENNESSEE BUILDING OFFICIALS ASSOCIATION
BOARD OF DIRECTORS HEREBY:

SECTION 1: Declares its support for the International Family of Codes as published by the International Code Council, and

SECTION 2: Declares its support of SB 1690 (Trail) and HB 882 (Hood) which adds The International Building and International Fire Codes to the list of codes that exempt local governments are allowed to adopt, and

SECTION 3: Directs the Secretary of TBOA to forward this resolution and cover letter to the Tennessee Department of Commerce and Insurance, Tennessee Municipal League, and to all ICC/SBCCI Chapter Presidents of Tennessee urging them to continue efforts to represent the citizens of Tennessee in the pursuit, to the greatest extent possible, of adoption of the International Codes by the Tennessee General Assembly.

Adopted this 12th day of February 2003.

ATTEST:

Betts Barbier Nixon, City of Murfreesboro
TBOA President

Jim Brown, City of Jackson
TBOA Secretary

TBOA Board of Directors 2002-2003

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A RESOLUTION RELATING TO CONSTRUCTION CODES

WHEREAS, THE Building Officials Association of Texas, a Chapter of the International Code Council and Texas Municipal League affiliate, is devoted to encouraging adoption of codes and standards which will ensure safe and durable structures in Texas; and

WHEREAS, the International Code Council has sought to consolidate all the model code organizations in the United States and now produces one set of building-related codes for nationwide use; and

WHEREAS, most cities in Texas have traditionally adopted one of the model codes which have been integrated into the International Code series; and

WHEREAS, the 77th Legislature of the State of Texas adopted the International Energy Conservation Code, International Plumbing Code, International Mechanical Code, and International Residential Code, published by the International Code Council, for municipalities that regulate building; and

WHEREAS, the International Codes are developed by code officials, builders, manufacturers, architects, engineers, and the construction industry and are approved by code officials as being state-of-the-art codes;

NOW, THEREFORE, BE IT RESOLVED by the delegates assembled at this 2002 Annual Conference of the Texas Municipal League that the League encourage all cities in Texas to adopt the International Building Codes and associated International Codes as the construction standards for their jurisdictions.

PASSED AND APPROVED by the membership of the Texas Municipal League this 19th day of October, 2002, at Fort Worth, Texas.

APPROVED: Guy Goodson President

ATTEST: Frank J. Sturzl Executive Director
November 6, 2001

To the members of the Washington State Association of Fire Marshals;

On Thursday November 1, 2001 the Board of Directors for the Washington State Association of Fire Marshals unanimously approved an action endorsing the adoption of the International Fire Code in Washington State. This action extends from the results and conclusions drawn by our membership, the Washington State Association of Fire Chiefs, private industry and other fire service professionals from across the state after having completing a nine-month study of available fire codes and processes.

At the November 1st meeting the board re-affirmed its support of Resolution 99-1 calling for among other things, a single national fire code. Although the International Fire Code falls short of the single national code benchmark the board feels that beginning with the 2003 edition, the IFC is the best choice for the citizens of Washington State. Much work remains to be done in bringing about a single national code. The Washington State Association of Fire Marshals will actively participate in national code development processes to that end.

Sincerely

David Lynam
President
Promoting Accessibility Through Building Codes

The undersigned organizations recognize that barriers in the built environment pose a serious impediment to the full integration of people with disabilities into society. Federal law has attempted to address the lack of accessibility in certain residential buildings through the design and construction requirements of the Fair Housing Amendments Act and in commercial and public properties through the design and construction requirements of the Americans with Disabilities Act. These properties also may be subject to other federal accessibility requirements such as Section 504 of the Rehabilitation Act. Many states have enacted laws mandating accessibility for people with disabilities in housing, public sector and commercial properties.

Most states or localities in this country have adopted building codes to govern construction within their jurisdictions. These building codes are enforced by local or state code officials. The undersigned organizations believe that incorporation of the design and construction requirements of the Fair Housing Amendments Act and the Americans with Disabilities Act into building codes represents an opportunity to enhance compliance with these federal laws.

Therefore, the undersigned organizations urge state and local authorities to adopt building codes that, at a minimum, reflect all of the design and construction requirements of the Fair Housing Amendments Act and the Americans with Disabilities Act. We support further efforts to promote increased compliance with the Fair Housing Amendments Act and the Americans with Disabilities Act.

American Institute of Architects  National Association of Developmental Disabilities Councils
American Network of Community Options  National Association of Home Builders
and Resources  National Association of Realtors
American Seniors Housing Association  National Council for Community Behavioral Healthcare
American Society of Interior Designers  National Mental Health Association
Bazelon Center for Mental Health Law  National Multi Housing Council
Easter Seals  Paralyzed Veterans of America
International Code Council, Inc.  National Alliance for the Mentally Ill
National Alliance for the Mentally Ill  National Apartment Association
National Association of Home Builders  National Association of Realtors
National Council for Community Behavioral Healthcare
National Mental Health Association  National Multi Housing Council
Paralyzed Veterans of America
AIA Reaffirms Support for Single Set of Codes

On August 7th, the American Institute of Architects (AIA) reaffirmed its support for a single set of comprehensive codes to be used throughout the United States. AIA representatives met with International Code Council (ICC) CEO Bob Heinrich and ICC staff at the AIA National Headquarters in Washington, DC to discuss public policy issues.

“The American Institute of Architects has played an integral role in the success of the International Code Council and the adoption of the International Codes across the United States. We are extremely pleased to receive their continued support as ICC focuses on bringing uniformity into the building regulations nationwide,” said Heinrich.

AIA continues to encourage the adoption of performance-based, prescriptive codes to serve the needs of the public. They recommend the uniform adoption of the following codes at all levels of state and local government:

The International Building Code
The International Energy Conservation Code
The International Mechanical Code
The International Plumbing Code
The International Property Maintenance Code
The International Residential Code
The International Zoning Code and
The National Electrical Code (published by the National Fire Protection Association)

AIA advocates active participation in the codes and standards development processes for both architects and the public, and supports due process and the consensus process. In a written Public Policy paper, AIA states, “The AIA seeks to strengthen the collective voices of all design professionals in the development and use of codes and standards by encouraging their participation in this process, and coordinating their activities through the establishment of public policies.”

The ICC was founded in 1994 as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). Since the early part of the last century, these nonprofit organizations have developed the three sets of model codes used throughout the United States.

# # #
Resolution 99-2

Title
AIA Support for Adoption of the ICC International Code

Sponsor
AIA East Bay
AIA California Council

Intent
To simplify the practice of architecture on a regional, national, and international basis; expand the marketability of architectural services on a global scale; and position the US to be a world leader in building regulations.

Text of Resolution
WHEREAS, the AIA passed the 1991 convention resolution for “A Single Model Building Code for the United States;” and

WHEREAS, the AIA, through its Center for Building Performance program, has strongly endorsed the concept of a single set of comprehensive and coordinated building codes for the United States which could be developed, maintained, and distributed by the present system for code enforcement authorities in their respective geographic areas; and

WHEREAS, the recognized model building code organizations have created an umbrella organization, the International Code Council, Inc. (ICC), which has created the ICC International Building Codes for the national and international building community; and

WHEREAS, the AIA, through its Center for Building Performance program, has supported and participated in the development and promotion of ICC International Building Codes; and

WHEREAS, the advent of reciprocal architectural licensing throughout the US, coupled with the latest electronic communication and facsimile transmissions and easily accessible air travel, makes the practice of architecture on a national and global scale a very practicable situation for firms of all sizes; and

WHEREAS, the simplicity of using the ICC International Building Codes, which address multi-regional needs, will assist in keeping the US in a competitive position on a world-scale in the field of building construction; and

WHEREAS, the international marketplace strives toward more standardization and the uniformity in building performance regulations and code requirements; and
WHEREAS, more and more federal agencies are deferring their building performance requirements and standards to model building codes instead of their own previous individual standards; and

WHEREAS, one of the primary missions of the AIA is to coordinate the building design and construction process; and

WHEREAS, there is a continuing request that the architectural profession lead this nation through the design and construction processes in concert with other construction industry participants; therefore

BE IT RESOLVED, that the AIA, through its Center for Building Performance and Government and Industry Affairs programs, and AIA components, continue to strongly support the continued development, maintenance, adoption, and use without modification of the ICC International Building Code and the family of comprehensive and coordinated building codes known as ICC International Codes; and

BE IT FURTHER RESOLVED, that the AIA, through its Center for Building Performance and Professional Development programs, continue to develop and deliver educational programs for AIA members related to building performance and the ICC International Codes.
AIBD Resolution
Title: AIBD Support for Single Building Code Concept
Original Sponsor: Code Committee, American Institute of Building Design

WHEREAS, the requirements of numerous building codes in use throughout the country, and even in adjacent jurisdictions, have varied greatly;

WHEREAS, it is difficult & expensive dealing with the varied building code requirements between each jurisdiction of design practice;

WHEREAS, design and construction of buildings throughout the United States and the world could be more easily facilitated under one single, complete set of integrated and comprehensive building codes;

WHEREAS, the design of buildings in varied locations throughout the United States and the world by one designer or design firm is now made possible through the use of readily available electronic communication;

WHEREAS, a single, complete set of integrated and comprehensive building codes would be advantageous to all involved in the design and construction industries, including design professionals, building officials, contractors, professional organizations, manufacturers and suppliers, as well as building owners and the general public;

WHEREAS, the three model code organizations, Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI), have created the International Code Council, which now offers a single, complete set of integrated and comprehensive building codes, including a complete stand-alone residential code;

WHEREAS, the set of International Codes® has been developed by combining the three proven existing model codes into one single, complete set of integrated and comprehensive building codes without technical disparities, and including provisions to deal with regional variations such as soil types, climate, seismic and wind risks, and provides for responsible code development and maintenance procedures;

BE IT RESOLVED, that the American Institute of Building Design, through its Code Committee, supports the concept of a single, complete set of integrated and comprehensive building codes that includes a stand-alone residential code, and that provides for responsible code development and maintenance procedures, as the International Code Council does; and

BE IT FURTHER RESOLVED, that the American Institute of Building Design, through its Code Committee, will assist its members with resources to help them in their efforts to support the adoption of a single, complete set of integrated and comprehensive building codes, as well as aid in the education of members on building codes through the continuing education process.
Mr. Bill Tangye, President  
Building Code International  
C/O Southern Building Code Congress  
900 Montclair Road  
Birmingham, AL 35213

Dear Bill:

At the Alabama AGC Board of Directors meeting held in August, it was the unanimous approval of the Board to endorse and recommend the adoption of the International Building Code and to do so wherever possible without modification or amendments.

The construction industry feels that if this code can be adopted universally in its pure form then the benefit would be increased to the industry and we would be moving construction from a fragmented industry toward something much more uniform.

Thank you for your input and your leadership in the development of this product.

Sincerely,

Henry T. Hagood, Jr.  
Executive Vice President  
Alabama Branch AGC

HTH/paf
BOMA INTERNATIONAL SUPPORTS ADOPTION OF THE INTERNATIONAL CODES

BOMA Position

BOMA International supports the development and implementation of a single set of model building codes, the International Codes, as a means of achieving more consistent, and more reasonable regulation of the commercial real estate industry.

When BOMA International endorsed the single code concept, it was always expected the National Fire Protection Association (NFPA) would be a partner with the International Code Council (ICC). Subsequently however, NFPA decided to develop its own family of codes, the NFPA Consensus Codes. BOMA International should aggressively and actively participate in the development of the NFPA Consensus Codes; however, BOMA's participation in the NFPA process does not represent an endorsement of the NFPA process or the NFPA Consensus Codes in any way. The goal of BOMA's participation in the NFPA process is to perfect NFPA 5000 by making it as close as possible to the International Building Code (IBC), including any changes to the IBC that BOMA sees fit to propose.

BOMA International reaffirms its policy endorsing one single set of model codes for the built environment. BOMA encourages the ICC and the NFPA to resolve their differences, “get it together,” and collectively put forth one single set of comprehensive model building codes for the built environment.

Background

In December 1994, the three national model code organizations formed the ICC with a goal of developing a single set of coordinated codes for the built environment. Utilizing more than 190 years of collective experience shared by its member organizations the ICC completed the International Codes series in 2000, replacing the National Codes, Uniform Codes, and Standard Codes previously published by the respective organizations that constitute the ICC.

Recent Activity

When joint efforts between the ICC and the NFPA to develop the International Fire Code fell apart several years ago, both organizations began aggressively pushing for adoption of their respective documents. Consequently, the nation faces the likelihood of a “hodge-podge” system of model codes, creating the need for numerous local and state amendments or interpretations, and thus reducing the level of consistency that could be achieved by the use of one package of codes. The International Codes were developed to be a seamless “family” of codes without such internal problems. BOMA members will be best served by a proven set of codes that are ready for adoption across the country: The International Codes.

Action Requested

With the impending release of the NFPA Building Code (NFPA 5000) in May 2002, BOMA members will find themselves in the middle of the battle for code supremacy. BOMA members should aggressively monitor state and local activities, and become actively involved in any efforts to adopt new codes and support adoption of the International Codes. BOMA members are encouraged to proactively work with their legislative and regulatory officials responsible for code adoption and express their desire for adoption of ICC’s set of coordinated of codes.
INSURANCE BUILDING CODE COALITION

THE MODEL BUILDING CODE INITIATIVE

The Insurance Building Code Coalition

April 1999, the Insurance Building Code Coalition was organized to engage and coordinate the activities of the insurance industry in advocating public policy that strengthens building codes. The Coalition believes that insurers and society benefit when buildings are constructed to be more resistant to loss. Toward this end, the coalition aims to advance public policy strengthening building codes in order to save lives and reduce property and casualty losses. Our initial focus is on 1) advancing the adoption of uniform statewide building codes that will result in more buildings being constructed to standards and 2) incorporating provisions into building codes that strengthen property protection.

Model Building Codes

The way buildings are constructed plays a significant role in determining how well our nation’s building stock can withstand loss or damage. For much of the nation, building codes set construction standards. The building codes which state, county and municipal governments adopt and enforce are most frequently based on model building codes.

Model building codes establish a baseline consensus of concerned parties describing how buildings should be constructed. The consensus is based on the views of builders, engineers, manufactures of building materials, architects and public officials. These parties represent and ultimately aim to balance a range of interests that include controlling construction costs, insuring structural integrity, and enhancing durability and public safety.

Why Insurers?

There are significant opportunities for insurers to strengthen the resiliency of buildings by shaping model building codes. Building codes have not typically addressed a broad range of property loss measures until recent natural disasters elevated interest in areas of the country that suffered losses. Our industry has economic interests in minimizing property claims. Further, the public, and policyholders in particular, view insurers as having a stake in managing property loss risks.

Our industry can benefit by being more active in advancing property protection measures in building codes. The Insurance Building Code Coalition believes there are opportunities for our industry to play a more active role that can lead to stronger property protection that lowers insured losses and to positive social receptions of our industry promoting risk management. Further, individuals participating in this initiative will have the opportunity to learn more about the building code process; how building codes affect insurers’ interests; to promote their company’s contributions to social goals; and to become part of a network of property risk management experts.
- THE MODEL BUILDING CODE INITIATIVE

The Model Building Code Initiative

The Model Building Code Initiative is intended to raise the industry’s voice in seeking stronger model building codes that represent our industry’s interests in minimizing insured property losses. We aim to do this by facilitating, simplifying and coordinating insurance companies’ participation in the model building code process. The initiative can be viewed as a three-step process.

Identify and Recruit Insurers — Who Should be Involved?

Insurance companies that believe their interest is served when they write property insurance in areas with stronger building codes and companies that wish to be recognized for promoting property risk management should consider this project. Appropriate participants would include property loss control consultants and claims or underwriting personnel with significant property experience and technical interests or orientation.

Participation involves training to bring the participant up to speed on the code process and the rationale for the code changes we seek and attending model code meetings to advance industry-supported code provision. The level of participation will vary by the company’s and individual’s interests and capacity. Model code meetings take place throughout the county. We expect that the industry’s wide geographical reach will minimize travel expense. It is our aim to make participation as easy and inexpensive as possible without diminishing the benefits to the individual, the company or our industry.

Facilitate Industry Participation — What is involved?

The Insurance Building Code Coalition will provide training on the model code process; talking points and rationale for the code changes we seek to advance; advise participants of when, where, and how to express views; and monitor progress and results. The bulk of this work will be done by telephone, mail and fax. Face-to-face meetings will be kept to a minimum. Again, we aim to make this an activity that companies can support at varying levels of participation.

Focus — Who Does What?

Participants in this initiative will identify a limited number of the most important code changes they believe we should concentrate on. The Coalition will develop talking points, position paper and supporting strategies to advance these measures. We will be supporting the code changes the Institute for Business and Home Safety has identified to minimize catastrophic losses and developing a similar list for non-catastrophic losses. Participants will advocate these changes.

We believe that a handful of insurance companies participating at various levels of commitment can make a significant difference in the way our industry is perceived and in generating stronger support for incorporating property protection measures into model building codes.
May 7, 2002

Update on ICC, NFPA, and Proposed Building Codes Standards

Dear Members:

In January 2002, the International Code Council (ICC) released its model building code. The National Fire Protection Association (NFPA) has drafted a building standard (NFPA 5000) that will go to an advisory vote before the NFPA membership in late May. If NFPA 5000 receives a majority vote of NFPA members assembled, it will then go to the NFPA Standards Council for final action in July 2002.

Earlier this spring, representatives of ICC and NFPA appeared before ICMA’s Governmental Affairs and Policy Committee (GAPC) to compare and contrast their respective efforts in the area of building codes. Based on the discussion—and previous discussions individual GAPC members had with the building officials in their communities—the members of the GAPC reached a consensus to support the efforts of the ICC. The GAPC did so for a number of reasons. Key among these was that ICC’s model building code was developed primarily by the building officials and code enforcement officers employed by cities and counties. GAPC members believed that, as public servants under the general direction of city/county managers, local building officials have as their primary concern the broad general interest of local governments and the citizens they serve. In contrast, GAPC members expressed concern that the NFPA process was more susceptible to being shaped by narrow special interests.

It is important to recognize that model building codes or standards can be referenced in state legislation, state regulations, etc., and can create mandates on local governments. Thus, GAPC continues to urge managers to discuss this issue with their chief building officials. We also continue to encourage ICMA members to bring this issue to their local elected officials, state municipal leagues, state county associations, and national organizations representing local governments.

Kevin O'Rourke                      Tom Fountaine
Chair, GAPC                          Vice-Chair, GAPC
City Manager                        Borough Manager
Fairfield, Calif                  Hollidaysburg, Pa
NAHB Resolution

SUBJECT: Support For The Single Building Code Concept

July 13, 1999
Laguna Niguel, CA
Summer Executive Committee Meeting

WHEREAS, the requirements found in the model building codes have historically varied greatly within jurisdictions, between states and even among the model codes themselves; and

WHEREAS, builders have had difficulty dealing with the impact of variations in building code requirements in their areas of operation, and

WHEREAS, the efficiency of builder operations would be improved by consistency within model building codes; and

WHEREAS, builders are now voting members on the International Residential Code Development Committee and other International Code Council (ICC) Codes; and

WHEREAS, NAHB policy has supported the concept of affordability in building code requirements as well as statewide minimum-maximum codes; and

WHEREAS, the ICC current draft of the Residential Code requires the consideration of affordability in its preamble and purpose statement; and

WHEREAS, through the development of the International Residential Code, NAHB and the home building industry has developed a strong working relationship with the representatives of the International Codes; and

WHEREAS, the achievement of uniform requirements for Fair Housing Accessibility and other construction issues depends heavily on uniform building code requirements;

NOW, THEREFORE BE IT RESOLVED that the National Association of Home Builders supports the concept of a coordinated set of national model building codes developed for the consideration of state and local jurisdictions, that provides for:

1. Responsible code development procedures as reflected by the ICC.
2. Appropriate voting representation by NAHB nominees.
3. A simple, user-friendly and stand-alone residential building code that includes housing affordability as a major determinant in its development, as currently represented by the draft International Residential Code,

BE IT FURTHER RESOLVED that NAHB will continue to support the adoption of state
enabling legislation that calls for the creation of statewide minimum-maximum building codes; and

BE IT FURTHER RESOLVED that NAHB will continue to oppose any building code or building code provisions that are detrimental to the goal of providing affordable housing and which do not include jurisdictional flexibility.
RESOLUTION 98-17
50-0-0
Passed by the Council Board of Directors (11-1-0)

International Building Code 2000
Passed By: Regions 1, 2, 3 and 5

RESOLVED, that NCARB strongly supports the development and adoption of a single building code for use by all NCARB regions, and

FURTHER RESOLVED, that NCARB strongly supports the continued development of the International Building Code to promote technological changes that will occur in the future in order to provide for the protection of the health, safety and welfare of the general public, and

FURTHER RESOLVED, that copies of this resolution be forwarded to the International Code Council, Inc.
REAL ESTATE ASSOCIATIONS URGE ADOPTION OF NEW INTERNATIONAL BUILDING CODES

WASHINGTON, DC -- The National Multi Housing Council (NMHC) and National Apartment Association (NAA) today announced their support of the new family of comprehensive and coordinated international model codes developed by the International Code Council (ICC). NMHC/NAA are urging state and local governments to adopt the ICC International Codes without modification when they are published in February 2000.

Ron Nickson, NMHC/NAA Vice President of Building Codes, praised the ICC’s five-year effort to replace the individual model codes previously published by the Building Officials and Code Administrators International (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International (SBCCI) with a single, comprehensive set of model codes regulating all aspects of building design and construction.

The new family of ICC codes brings consistency in code enforcement and economies in code enforcement and real estate development, said Nickson. These codes are the only set of model codes specifically written to work together, and as a package they are very responsive to the needs and concerns of the multifamily and seniors housing industries. The new ICC codes will allow developers to build quality, affordable housing without reducing any of the basic life safety requirements. These codes also resolve the confusion associated with the federal accessibility provisions by being the only model codes designed to be in compliance with the Americans with Disabilities Act Accessibility Guidelines and the U.S. Department of Housing and Urban Development Fair Housing Accessibility Guidelines.

NMHC/NAA support the adoption and enforcement of the ICC International Codes to provide cost effective, safe, affordable, and accessible housing, said Nickson.

Based in Washington, DC, NMHC and NAA represent the nation’s leading firms participating in the apartment housing industry. Their combined memberships are engaged in all aspects of the development and operation of apartment and seniors housing communities, including ownership, construction, finance and management. NMHC and NAA operate a joint federal legislative program and provide a unified voice for the private apartment and seniors housing industries.

Executive Summary

The Responsible Energy Codes Alliance and its members fully support adoption of the International Codes and, specifically, the International Energy Conservation Code. The International Codes are, far and away, the best, most sophisticated and comprehensive model codes available. Moreover, we believe that the model code development processes of the International Code Council (ICC) are reasonable and well-designed to ensure public and technical expert participation and an unbiased result. As a result, we oppose any legislation that would preclude the consideration of and/or actual adoption of the International Codes in a state or jurisdiction.

Specifically, RECA is very concerned by the recent threat of state legislation to require the review and adoption of only those codes and standards that are recommended or accredited by the American National Standards Institute (“ANSI”). This tactic is intended by supporters of the recently developed NFPA 5000 (an alternative to the International Codes recently proffered by the National Fire Protection Agency) to tie the state’s hands and preclude it from adopting the International Codes, even if they are the better family of codes on the merits. Commissions responsible for evaluating numerous codes and picking the best one for their jurisdiction must have the authority to consider and evaluate all options. While it is legitimate to consider the development processes for a particular model code in evaluating that code, that issue alone is not dispositive. Nor does ANSI have a monopoly on the appropriate development process for model codes. In the end, the merits of the individual model codes should be given the most weight in choosing among them. The ANSI debate is really an effort to preclude the jurisdiction from ever getting to the substance and merits of the alternatives and should be rejected.

ANSI accreditation simply is not and never has been a prerequisite to a reasonable model code or law. Regrettably, proponents of ANSI-only legislation have used the ANSI accreditation issue as a means to discredit the I-Codes, which is entirely unfair and inappropriate. The I-Codes and their predecessors have been widely adopted across the nation for many years without ANSI approval. As a testament to the importance of the final document and not just the process used to develop it, the federal government does not require its agencies to use ANSI-accredited standards, nor does it discriminate in its choice of codes.

Legislation requiring the adoption of ANSI-accredited codes only, is also discriminatory against the I-Codes. Simply because the ICC has opted for a somewhat different development process from the ANSI process, the I-Codes should not be discredited, so long as the I-Code
process also remains open and consensus-based. The I-Code committee voting process is very similar to ANSI-accredited processes, but the final voting authority for the I-Codes rests with its building code official members, which is the primary reason why it is not ANSI-accredited. RECA, along with many other industry supporters, believes that, for a model code, the I-Code process is actually better and helps to ensure the best, most unbiased result. Leaving final voting authority with code officials is effective because the voting code officials are unbiased and their sole objective is the creation of a quality end product for all users. Because of the effective process used and quality document produced, an overwhelming number of states and jurisdictions have adopted the suite of I-Codes published by the ICC. The I-Codes are a set of national model codes with broad application and solid support from industry, government officials, and the public, among many others.

Legislation requiring ANSI-only building codes could create problem for states in the energy context as well, since states are required under the 1992 Energy Policy Act (“EPAct”) to review and consider adoption of the 2000 International Energy Conservation Code (a non-ANSI code). Creating a building code adoption structure in which states could not evaluate or consider adopting provisions from non-ANSI codes such as the 2000 IECC would risk violating federal law.

Background on RECA

RECA is a consortium of energy efficiency advocates, product and equipment manufacturers, and trade associations that is dedicated to improving the energy efficiency of homes through greater use of energy efficient practices and materials. Our Objective and Supporting Principles and a list of RECA members are included at the end of this document.

RECA drafted this position paper to help eliminate the myths surrounding the debate between competing building codes and code development processes. Given our expertise in dealing with building energy codes, our position is largely based on our experience following the International Energy Conservation Code (IECC), which is part of the I-Code family. The IECC is the premier building energy code across the country.

I. Unique Issues Involving ANSI-certification and Energy Codes

The IECC and its predecessor, the Model Energy Code (dating back to the 1992 version), have already been adopted in 40 states and the District of Columbia and countless counties and municipalities. This code is fully backed by funding for implementation and technical support provided by the US Department of Energy. The IECC/MEC has been in existence for more than a decade and has gone through numerous code development cycles open to the public, which have considerably improved the document. Furthermore, the IECC/MEC is the only residential building energy code referenced in the United States Energy Policy Act (EPAct). The 2000 version of the IECC is the current national model energy code certified by the US Department of Energy that all states must review and consider adopting. Sixteen states and many more jurisdictions have adopted this latest 2000 version of the IECC or equivalent provisions. The
IECC’s lack of ANSI-accreditation obviously did not act as a bar to the federal government’s selection of it as the national standard.

If a state passed a law that required it to adopt only ANSI-accredited codes, the state would not even be able to review the IECC, let alone consider its adoption. State legislation that would not permit the State to review and possibly adopt the IECC, or future non-ANSI codes, is likely to be preempted by EPAct. That is, a contrary state law may not be a valid excuse in the face of pre-existing federal law. So, even if a state passed such a law, the state would still have to review and report back to the DOE on its decision. A state passing a law to require only ANSI-accredited codes may be taking a chance in the realm of energy building codes that the law could be challenged. It would also remove decision-making authority regarding the building codes from state committee members that have only the public interest as their goal. RECA strongly opposes the adoption of such a law because it would be discriminatory and may run afoul of EPAct.

Another very important consideration with regard to energy codes and ANSI accreditation has to do with the available model energy codes that are ANSI accredited. The NFPA 5000 code adopts ASHRAE 90.2-1993 as its energy code (along with some simplified tables pulled out of the 90.2 document for a prescriptive compliance approach). The 90.2 standard has never been adopted by any state as its energy code, nor is it supported through funding or technical support from the Department of Energy. Compliance tools that are available to assist code users with the IECC, such as REScheck™ and COMcheck™, simply do not exist for NFPA 5000.

Adopting ANSI-only legislation would prevent a state or locality from being able to tap into the IECC-based wealth of resources. As a result, states and localities essentially would be on their own in preparing 90.2 for introduction, and implementation would be quite difficult to achieve and would necessarily be delayed. Moreover, the NFPA 5000 energy provisions are neither the technical nor practical equal to the IECC. The IECC reflects many years of practical use and a continual improvement process that is unmatched by the NFPA 5000. As a result, the IECC is widely recognized as the best model energy code for improving energy efficiency, lowering energy-related costs, reducing air pollution emissions, reducing peak electric demand, and ultimately greater reliability of utility service.

II.  The ICC Governmental Consensus Process Versus the ANSI Industry Consensus Process

Both the ICC and the NFPA hotly defend their individual code development processes. NFPA notes that its process is ANSI-accredited almost everywhere it mentions its codes. But when reduced to brass tacks, the ICC process is just as democratic and incorporates additional public-interest checks and balances. While an ANSI-accredited process may be desirable where industry groups with individual biases are developing standards, the ICC model codes are ultimately approved by fair, unbiased governmental officials. As a result, an ANSI process is neither necessary or desirable for code development by the ICC.
Both organizations rely on technical committees to address particular building issues. In both, anyone may submit a code proposal. The NFPA committees have balanced committees, in which no more than one-third of committees may be comprised of governmental representatives. The ICC technical committees maintain a mix of interests. Members representing either user or producer interests may not make up more than one-third of the committee membership. At least one-third of committees must be composed of consumers and governmental representatives. This strategy allows industry representatives to comprise as much as 67% of a technical committee’s membership, but ensures that governmental members will have some input. All people are guaranteed a chance to speak at the ICC’s technical meetings. The NFPA technical committees are not required to recognize all speakers.

In both processes, the committee decisions on code proposals are forwarded to the membership. In the ICC, the Committee votes may be challenged by the membership, but unless challenged, are considered binding. Proposals challenged by the membership are forwarded for individual consideration. Governmental representatives have final voting rights on proposals, but final votes may be appealed to the ICC Board.

In contrast, the NFPA committee votes are non-binding and simply identify possible consensus. Official committee votes are taken by letter ballot, out of view of the public. The membership may overturn a committee vote. The membership vote may be overturned by the NFPA Standards Council, which may represent various vested interests. The NFPA Board of Directors can overturn decisions of the Standards Council “to protect the integrity of the standards development process and to protect the interests of the Association.”

The ICC process is open, inclusive, and balanced. All views and opinions are taken into consideration throughout the process. While the NFPA process can ensure a balanced process, it cannot ensure that the members making the final decisions are without a vested interest in the outcome of code proposals. The ICC puts public safety and welfare first by having a process that allows participation by all, but allows final decisions only by governmental representatives with no vested interest. For that reason, RECA believes that the ICC’s development process is superior to that of NFPA.

III. Legislation to Limit Building Codes Only to ANSI-Accredited Codes Is Misguided

State building code adoption committees/commissions have an important responsibility to adopt codes that ensure public safety and welfare and account for the geographic and economic conditions within their states. A state committee’s role is to be a neutral body whose primary concern is that of the public good. In that role, a committee should strive to be highly educated regarding the available building codes, so that when it chooses a particular code, it can be sure to select the best one for the state. Limiting the field of codes that a state building codes committee could adopt, therefore, does a disservice to the residents of a given state. For that reason, state legislative attempts to limit building codes to only those that are ANSI-accredited would be detrimental to the code adoption process in the state.

In addition, because only two national model building codes currently exist (the International Codes and NFPA 5000), such language would clearly be designed to legislate a
discriminatory policy in favor of NFPA 5000. This is an obvious contrast to federal anti-
discrimination policy with regard to standards. Although the argument is commonly made, the
federal government does not require its agencies to follow an ANSI-accredited process. A look
at the pertinent federal guidelines is instructive. The National Technology Transfer and
Advancement Act of 1995 codified a Circular by the Office of Management and Budget (OMB
A119), which recommended that federal agencies use non-governmental standards. The Act
requires agencies to use private voluntary standards, as opposed to government standards, or
explain why it is not feasible to do so. The terms used in the Circular and the law to embody this
concept are “voluntary consensus standards” and “voluntary consensus standards body.”

The definitions of these terms do not mention ANSI. The National Institute of Standards
and Technology (the agency assigned to follow agency progress in adopting voluntary standards)
clarified the terms by referring to the OMB Circular, which states: “a voluntary consensus
standards body is defined by the following attributes: (1) openness; (2) balance of interest; (3)
due process; (4) an appeals process; and (5) consensus, which is defined as general agreement,
but not necessarily unanimity.” The circular goes on to state that “…neither OMB nor NIST can
endorse or recognize one standards developing organization as preferable to another.” Clearly,
the ICC process meets all of these requirements and federal agencies may rely on its standards.
To say that the federal government may only use ANSI-accredited standards is simply false.
States should have the same opportunity to consider non-ANSI-accredited codes.

Conclusion

RECA members have actively participated in the ICC code development process for
many years. Our experience shows that the ICC process is open, inclusive, and balanced and
offers an additional measure of public interest protection lacking in the NFPA process. RECA is
opposed to any requirement of ANSI-certification, particularly since it will pre-determine which
model code is selected. RECA submits that the decision between competing model codes should
be made on the merits and not elevate form over substance. RECA is unwilling to support a
code that is far behind the IECC in usability, as well as energy efficiency, and in particular, one
that may take years for adopting jurisdictions to implement, resulting in delays of public safety
measures and energy savings. Finally, RECA strongly disagrees with extreme measures in state
legislation to discriminate against the ICC. Such measures are contrary to the policies of the
federal government and remove authority from neutral state building code committees.
OBJECTIVE AND PRINCIPLES OF THE RESPONSIBLE ENERGY CODES ALLIANCE (RECA)

RECA Primary Objective:

RECA’s primary objective is to support and urge all states to adopt and implement the 2000 International Energy Conservation Code, without substantive local weakening amendments.

RECA Supporting Principles:

RECA believes that:

- One nationwide building energy efficiency code is in the best interest of building and home owners, operators and builders, manufacturers and the general public welfare. The 2000 IECC has been certified by the United States Department of Energy under federal law and is the most up-to-date, fully supported nationwide model building energy efficiency code for all buildings.

- The 2000 IECC is preferable to the 2000 International Residential Code, but the IRC is an acceptable alternative for residential construction.

- Adoption of the amendments incorporated in the 2001 Supplement to the IECC, particularly the incorporation of ASHRAE 90.1-99 for commercial buildings, are an acceptable alternative that RECA can support.

- While adoption of an earlier version of the MEC or amendments to the IECC is generally better than no code at all, RECA strongly urges that all jurisdictions adopt or upgrade to the complete 2000 IECC, without substantive local amendments.

- Any desirable improvements to the 2000 IECC should be pursued through the ICC code change process, rather than through local amendment.
Alliance to Save Energy
American Architectural Manufacturers Association
American Chemistry Council
American Plastics Council
Building Codes Assistance Project
Cardinal Glass Industries, Inc.
CertainTeed Corporation
Dow Chemical Company
Guardian Industries Corporation
Johns Manville Corporation
Knauf Fiber Glass
North American Insulation Manufacturers Association
Owens Corning
Pactiv Corporation
Polyisocyanurate Insulation Manufacturers Association
University of Texas
June 17, 2004

Ms. Sara C. Yerkes  
Senior Vice President of Government Relations  
International Code Council  
5203 Leesburg Pike, Suite 600  
Falls Church, VA  22041  

Dear Ms. Yerkes,  

On behalf of Structural Component Distributors Association, I would like to express our appreciation for the work that the ICC is doing to create a more uniform building code process throughout the U.S. We sincerely support the hard work that the ICC has done in this area and pledge our help in state and local code adoption efforts.

Respectfully Yours,  

Ryan Dexter  
Executive Director
June 17, 2004

Ms. Sara C. Yerkes
Senior Vice President of Government Relations
International Code Council
5203 Leesburg Pike, Suite 600
Falls Church, VA  22041

Dear Ms. Yerkes,

On behalf of the steel truss and component industry, I would like to express our appreciation for the work that the ICC is doing to create a more uniform building code process throughout the U.S. We sincerely support the hard work that the ICC has done in this area and pledge our help in state and local code adoption efforts.

Respectfully Yours,

[Signature]

Keith Kinser
STCA President
June 17, 2004

Ms. Sara C. Yerkes  
Senior Vice President of Government Relations  
International Code Council  
5203 Leesburg Pike, Suite 600  
Falls Church, VA  22041

Dear Ms. Yerkes,

On behalf of the wood truss industry, I would like to express our appreciation for the work that the ICC is doing to create a more uniform building code process throughout the U.S. We sincerely support the hard work that the ICC has done in this area and pledge our help in state and local code adoption efforts.

Respectfully Yours,

Daniel N. Holland
President of WTCA
June 15, 2004

Ms. Sara C. Yerkes  
Senior Vice President of Government Relations  
International Code Council  
5203 Leesburg Pike, Suite 600  
Falls Church, VA  22041

Dear Ms. Yerkes:

On behalf of Structural Building Components Magazine and the structural building components industry we serve, I would like to express our appreciation for the work that the ICC is doing to create a more uniform building code process throughout the U.S. We sincerely support the hard work that the ICC has done in this area and pledge our help in state and local code adoption efforts.

Respectfully Yours,

Suzi Grundahl  
President Truss Publications, Inc.
June 17, 2004

Ms. Sara C. Yerkes  
Senior Vice President of Government Relations  
International Code Council  
5203 Leesburg Pike, Suite 600  
Falls Church, VA  22041

Dear Ms. Yerkes,

On behalf of the Building Component Manufacturer Conference and the structural building components industry we serve, I would like to express our appreciation for the work that the ICC is doing to create a more uniform building code process throughout the U.S. We sincerely support the hard work that the ICC has done in this area and pledge our help in state and local code adoption efforts.

Respectfully Yours,

Jill Zimmerman  
Tradeshow Operations Manager
Oct. 22, 2009

Allen Lorenz
State Fire Marshal
State of Montana
2225 11th Ave.
Helena, MT 59601

Dear Marshal Lorenz:

We understand that the Montana State Building Codes Division will be considering the adoption of the 2009 edition of the International Residential Code (IRC) in the near future.

The 2009 IRC reflects the latest in safety and is the most current document governing residential construction. Compared with previous editions of the code, it contains two new provisions of particular concern to fire safety officials.

The new residential sprinkler requirement – requiring fire sprinklers in all new townhouses effective immediately upon adoption, and in all new one- and two-family residences effective January 2011 – is arguably the most significant code development for fire safety in the history of the residential code. The 2009 IRC also requires carbon monoxide alarms in new construction dwelling units with fuel-fired appliances and in existing homes where interior alterations include fuel-fired appliance replacements or attached garages. Both of these improvements to the code will enable us to fulfill our common mission of protecting life, property and the environment from fire and related hazards.

The National Association of State Fire Marshals encourages the prompt adoption of the 2009 IRC in Montana and in all the states.

Sincerely,

Alan R. Shuman
President
September 29, 2009

Eng. Ahmed Mohamed Al Sharef
Undersecretary for Department of Municipal Affairs
P.O. Box 3
Abu Dhabi
United Arab Emirates

Dear Mr. Dhahi:

My name is James Colgate and I am the Assistant Commissioner for Technical Affairs and Code Development for the New York City Department of Buildings.

Prior to 2008 the City of New York was using its own building code. However, this prior building code was out-of-date and did not encompass the many changes in technology and construction methods and practices of the past decades. In 2002, the Mayor commissioned a task force to determine which model code this city should use as its base document – and, after much study, the panel returned a resounding vote in favor of the adoption of the International Code Council’s family of codes. On July 1, 2008, the city of New York officially adopted its new Construction Codes based on the International Building Code, International Plumbing Code, International Fuel Gas Code, and International Mechanical Code.

We have found many advantages to using the ICC’s I-codes. First, since these are the same codes used in many other jurisdictions, the architects, construction professionals, and real estate industry from other locations are more quickly able than before to ascertain what will be required for construction in New York City. Second, the I-codes are organized systematically and in a sensible way, so that the topics are easy to find by the users.

But the most important advantage is that the I-codes are updated by the ICC, meaning that my agency does not have to expend resources writing and re-writing the code as new technologies and construction methods develop.
Mr. Dhabi

September 29, 2009

The I-codes reference the latest standards from organizations such as UL, ASTM, NFPA, etc., and the I-codes are updated every three years. My agency participates in the ICC’s triennial code development process, bringing New York City’s experience and expertise to ICC’s updating process.

If you have any questions, please do not hesitate to contact me.

Sincerely,

James P. Colgate, R.A., Esq.

cc: Fatma Amer, P.E.
    BJ Jones
    Dottie Harris, ICC
Why Voluntary Consensus Standards Incorporated by Reference into Federal Government Regulations Are Copyright Protected

Should standards be free? What if they are incorporated by reference into federal legislation, rules, or regulations? Should people have to pay for “the law?” These questions have been the subject of much discussion and debate within the standards community for many years.

The American National Standards Institute (ANSI) is often asked about “Why SDOs Charge for Standards” at all. The answer is that every standard is a work of authorship and, under U.S. and international law, is copyright protected, giving the owner certain rights of control and remuneration that cannot be taken away without just compensation. In addition, there are many costs associated with developing, maintaining, and distributing standards – all of which can be reflected in the price of a standard. Different standards developing organizations (SDOs) have different business models and funding sources, but all seek to protect the intellectual property we call standards. See, “A Business Model that Works”.

The Copyright Act protects standards along with all works of authorship, and although the Act has been revised and amended several times in recent years, Congress has made no exception for standards. When the government references copyrighted standards into law, rules, or regulations therefore, the same considerations that underlie copyright protection for non-government-referenced standards apply. The approach that should be taken in such cases is to balance the standards developer’s right to copyright protection for its works of authorship against the public’s right to reasonable access to the standard. What follows is a discussion of the relevant questions.

1. **What is the U.S. federal government’s policy on the subject of incorporation of voluntary consensus standards by reference?**

Any discussion of government incorporation by reference of voluntary consensus standards should start with an examination of the federal government’s own policy on the subject. In recognition of the benefits of private standards development, the federal government has made it a policy to incorporate, “in whole, in part, or by reference,” privately developed standards for regulatory and other activities “whenever practicable and appropriate,” thereby “[e]liminat[ing] the cost to the Government of developing its own standards.” Section 1, 6, Office of Management and Budget (OMB) Circular A-119. Importantly, OMB requires the agencies to “observe and protect the rights of the copyright holder and any other similar obligations.” See, Section 6 j.¹

¹ Some states have similarly passed their own versions of OMB A-119. For example, under a Florida statute (§120.54, Fla. Stat.), effective Jan 1, 2011, an agency regulation may incorporate a code or standard by reference only if either:

- “a. The material has been submitted in the prescribed electronic format to the Department of State and the full text of the material can be made available for free public access through an electronic hyperlink from the rule making the reference in the Florida Administrative Code; or

- “b. The agency has determined that posting the material on the Internet for purposes of public examination and inspection would constitute a violation of federal copyright law, in which case a statement to that effect, along with the address of locations at the Department of State and the agency at which the material is available for public inspection and examination, must be included in the notice required by subparagraph (3)(a)1.”
In February 1996, the National Technology Transfer and Advancement Act of 1995 Pub. L. No. 104-113, § 12(d), 110 Stat. 775, 783 (1996) (NTTAA), was passed by Congress to establish standards policy and to coordinate the use by federal agencies of private-sector standards, encouraging where possible the use of standards developed by private, consensus organizations. With only some narrow exceptions, the Congressional policy set by the NTTAA is that: “all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments,” id.

2. Does incorporating standards by reference deny adequate public access or give SDOs an improper monopoly over the law?

Everyone should have the right to access standards referenced into law and be able to review such work, at a minimum, at government facilities and libraries on a read-only basis. Depending on the nature of the standard and its intended use, many such standards are also electronically available for viewing for free on either a long- or short-term basis.

Reasonable access, however, does not mean that everyone has the right to own a free copy. Copyright protection must be afforded to standards developers for their original works of authorship. Thus, most courts have found that standards incorporated into law do not lose their copyright protection and the copyright holder does not lose its right to commercial exploitation. See, e.g.: Practice Mgt. Info. Corp. v. American Med. Ass’n, 121 F.3d 516 (9th Cir. 1997), opinion amended by (9th Cir. 1998) 133 F3d 1140 (the AMA did not lose the right to enforce copyright when use of its promulgated coding system was required by government regulations); CCC Info. Servs. v. Maclean Hunter Mkt. Reports, Inc., 44 F.3d 61, 74 (2nd Cir. 1994) (upholding copyright of privately prepared listing of automobile values that states required insurance companies to use), but cf. Veeck v. Southern Building Code Congress International, Inc., 293 F.3d 791, 804 (5th Cir. 2002), cert. denied, 539 U.S. 969 (2003) (holding that “as law, the model codes enter the public domain and are not subject to the copyright holder’s exclusive prerogatives. As model codes, however, the organization’s works retain their protected status”); BOCA v. Code Tech. Inc., 628 F.2d 730, 736 (1st Cir. 1980) (expressing doubt over the enforceability of the copyright given that the state had adopted the code and remanding the case for further development); see generally, Amicus Brief of ANSI, et al. Veeck v. Southern Building Code Congress International Inc., No. 99-40632 (discussion of relevant authorities).

Federal agencies have likewise denied requests to give away for free copies of privately developed standards that were incorporated into federal regulation. See, Updating OSHA Standards Based on National Consensus Standards, 74 FR 46350-46361 (September 9, 2009) (“OSHA notes that copyright laws protect national consensus standards”); and Airworthiness Directives: Airbus Model A300 Airplanes, 72 FR 6923 (February 14, 2007) (incorporated by reference materials “do not lose their copyright protection”). One federal agency said that, taken to its logical extreme, the argument that standards should be given away for free just because they are incorporated into federal regulation would require that a school system’s decision to require children to acquire and read the novel Fahrenheit 451 over summer vacation would undo the copyright in that novel and obligate the school to reprint the text. See, FERC, Docket No. RM05-5-013; Order No. 676-E, Standards for Business Practices and Communication Protocols for Public Utilities, November 24, 2009. Such a result would make no sense. In its Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0, NIST Special Publication 1108, the National Institute of Standards and Technology (NIST) advised (page 46):

In making the selections of [standards] listed in this section, NIST attempted to ensure that documents were consistent with the guiding principles, including that they be open and accessible. This does not mean that all of the standards and specifications are available for free, or that access can be gained to them without joining an organization (including those organizations requiring a fee). It does mean that they will be made available on fair,
reasonable, and nondiscriminatory terms and conditions, which may include monetary compensation. [Emphasis added.]

3. Why is it necessary to charge for government-incorporated-by-reference standards?

Although most of the people working on standards development are volunteers, standards developers incur expenses in the coordination of these voluntary efforts. From the time a new project is commenced until the final balloting and adoption of a standard, a great deal of time and effort is involved in supporting the volunteers who write the documents. Drafting standards requires input from a variety of concerned constituencies and sources of expertise, including representatives of the consuming public, industry, academia, and the public safety and regulatory community. The standards drafting process draws heavily on the administrative, technical, and support services provided by the organizations that develop them. Sometimes these organizations contribute to an international document, which is then adopted as an international standard. Thousands of staff employed by standards developing organizations across the nation provide direct support for the technical development activities of the volunteers.

How do SDOs (for the most part, not-for-profit organizations) recoup these costs? Some rely on membership support, including membership fees, project fees, registration fees, and other member-generated income. Another business model relies on recouping these costs through revenue made possible from the copyright-protected sales and licensing of the standards themselves. Many SDOs use a combination of both. By funding operations at least in part through sales of standards, SDOs can minimize barriers to qualified participation and maximize independence from entities seeking to influence the outcome for commercial or political reasons. Under this model, the actual recouped costs through standards sales is but a fraction of what the total production costs would have been if the developers were not volunteers. In short, standards sales allow not-for-profit SDOs to recoup basic administrative costs while passing on to implementers all of the benefits of the voluntary and inclusive process of standards development.

4. Wouldn’t it be less expensive and more efficient for government agencies to develop regulatory standards themselves?

The development of voluntary consensus standards using input processes adapted to the particular industries involved is often a more efficient and cost-effective method of developing technical standards than the use of a highly structured notice-and-comment rulemaking process. Indeed, the very purpose of OMB A-119 was to allow the government to tap into this efficiency and “[e]liminate the cost to the Government of developing its own standards,” Section 1, Office of Management and Budget (OMB) Circular A-119. Many SDOs provide government agencies copies of a standard for free or at a reduced cost so that these agencies may properly promulgate a regulation and provide proper reference within a regulation or code.

The success of this process has been acknowledged by many federal agencies. For example, when FERC evaluated a private North American Energy Standards Board (NAESB) standards-development process against the cost to the Commission and to the industry of developing these standards through notice-and-comment rulemaking, FERC found that the NAESB process was more efficient:

When the Commission weighed the advantages achieved by the NAESB standards development process against the cost to the Commission and the industry of developing these standards through notice and comment rulemaking, we found, and continue to find, that the benefits of having a well-established, consensus process outweigh whatever costs non-members may incur in having to obtain copies of the standards. . . In choosing to take advantage of the efficiency of the NAESB process, we followed the government regulations that require the use of incorporation by reference. These rules appropriately balance the interest of the standards organization and the expediency of governmental use of privately
developed standards. Under section 552(a) of title 5, material may be incorporated by reference when such material is reasonably available to the public.

**FERC, Docket No. RM05-5-013; Order No. 676-E, Standards for Business Practices and Communication Protocols for Public Utilities, November 24, 2009.**

5. **Does incorporating voluntary consensus standards by reference allow for sufficient participation by government and industry in the development of the law?**

The intent of OMB A-119 was to require federal agencies to participate in private standards development and have full representation in such bodies. The National Technology Transfer and Advancement Act “requires agencies to consult with voluntary consensus standards bodies and to participate with such bodies in the development of technical standards ‘when such participation is in the public interest and is compatible with agency and departmental missions, authorities, and budget resources.’” “Neither the Act nor its legislative history indicates that federal agency representatives are to have less than full and equal representation in such bodies.” See, 63 Fed. Reg. 8545, 8554-8555 (Feb. 19, 1998) (OMB Notice of Final Revision of Circular A-119).

Under the consensus procedures used by ANSI, all other materially interested parties are similarly represented. Participants in the consensus body include representatives of industry trade associations, consumer advocate organizations and end users, in addition to federal and possibly state regulatory communities. See, “North American Energy Standards Board: Legal and Administrative Underpinnings of a Consensus Based Organization,” *27 Energy Law Journal 147, 164 (2006).*

In addition to the consensus procedures used to create standards, government-referenced standards are subject to full review under the relevant regulatory or legislative procedure applicable to the laws in which they are being considered for reference, and there is a full opportunity for industry, consumer, or other public input during the course of adoption by reference.

**Conclusion**

When the government references copyrighted works, those works should not lose their copyright, but the responsible government agency should ensure that the public does have reasonable access to the referenced documents. The U.S. government’s announced policy under OMB A-119 is to “observe and protect” the right of copyright holders when incorporating by reference into law voluntary consensus standards. The very purpose of this policy is to permit the government to benefit from the efficiencies of the voluntary consensus standards development process. Reasonable access to standards is ensured through electronic purchasing models utilized by most SDOs, and many standards developers make some or all of their standards available without charge to selected users of those standards. The process works and benefits everyone involved.
What are some of the applicable laws pertaining to governmental use of voluntary consensus standards?

Administrative Procedures Act (APA), establishing the rule-making and adjudicative proceedings of federal administrative agencies.

Trade Agreements Act of 1979 (TAA), prohibiting federal agencies from engaging in any standards-related activity that creates unnecessary obstacles to trade and requires federal agencies to take into consideration international standards.

National Technology Transfer and Advancement Act (NTTAA), directing federal agencies to use, when practical and not otherwise prohibited by law, standards developed by voluntary consensus standards bodies to achieve public policy and procurement objectives and charging the National Institute of Standards and Technology (NIST) with coordinating the standards needs of U.S. federal agencies to achieve greater reliance on voluntary consensus standards.

Office of Management and Budget (OMB) Circular A-119, providing support for the implementation of the NTTAA and setting forth policies on federal use and participation in the development of voluntary consensus standards (Section 6.j states: How should my agency reference voluntary consensus standards? Your agency should reference voluntary consensus standards, along with sources of availability, in appropriate publications, regulatory orders, and related internal documents. In regulations, the reference must include the date of issuance. For all other uses, your agency must determine the most appropriate form of reference, which may exclude the date of issuance as long as users are elsewhere directed to the latest issue. If a voluntary standard is used and published in an agency document, your agency must observe and protect the rights of the copyright holder and any other similar obligations).

Consumer Product Safety Improvement Act, directing the Consumer Product Safety Commission (CPSC) to rely on voluntary consensus consumer product safety standards rather than its own standards.

See also, NIST Report on the Use of Voluntary Standards in Support of Regulation in the United States, October 2009.

How does the federal government, in practice, use private consensus standards?

Federal statutes allow incorporation by reference of technical standards and this allows federal agencies to publish regulations in the Federal Register by referring to materials already published elsewhere. The legal effect of incorporation by reference is that the material is treated as if it were published in full in the Federal Register. For example, one federal agency, the Federal Communications Commission (FCC), has incorporated by reference standards developed by the following standards development organizations:

Advanced Television Systems Committee (ATSC)
American Society for Testing Materials (ASTM)
Consumer Electronics Association (CEA)
Electronic Industries Alliance (EIA)
Federal Aviation Administration (FAA)
IEEE (IEEE)
International Electrotechnical Commission (IEC)
International Maritime Organization (IMO)
International Organization for Standardization (ISO)
International Special Committee on Radio Interference (CISPR)
Incorporation by reference allows federal agencies to comply with the requirement to publish rules in the *Federal Register* by referring to materials already published elsewhere. This material, like any other properly issued rule, has the force and effect of law. Congress in Pub. L. 90-23 gave the discretion to the director of the *Federal Register* when to allow incorporation by reference of matter (“For the purpose of this paragraph, matter reasonably available to the class of persons affected thereby is deemed published in the *Federal Register* when incorporated by reference therein with the approval of the Director of the Federal Register”) 5 U.S.C. §552(a)(1). As noted by the Office of the *Federal Register* in Chapter 6 of its *Federal Register Document Drafting Handbook* (August 2008 Ed.): “This material, like any other properly issued rule, has the force and effect of law. Congress authorized incorporation by reference in the Freedom of Information Act to reduce the volume of material published in the *Federal Register* and Code of Federal Regulations (CFR).”

Where can I find a list of standards incorporated by reference into law?

NIST hosts a [Standards Incorporated by Reference (SIBR) Database](https://www.nist.gov/), which includes the voluntary consensus standards, government unique standards, private industry standards, and international standards referenced in the *Code of Federal Regulations (CFR)* and those used by U.S. federal government agencies in their procurement activities.

**Additional Documents of Interest**


Article: *Why Aren’t all TIA and EIA Standards Free?*


At a meeting of the World Intellectual Property Organization (WIPO) Standing Committee on the Law of Patents in March 2009, the U.S. Patent and Trademark Office (USPTO) expressed strong support for the private-sector-led and public-sector-supported U.S. standards system and for the use of standards developed through an open and consensus-based process. See, [USPTO Statement](https://www.uspto.gov).
The United States Standards Strategy establishes a framework that can be used by all interest parties to further advance trade issues in the global marketplace, enhance consumer health and safety, meet stakeholder needs and, as appropriate, advance U.S. viewpoints in the regional and international arena.

The National Conformity Assessment Principles for the United States document articulates the principles for U.S. conformity assessment activities that the consumer, buyers, sellers, regulators and other interested parties should be aware of to have confidence in the processes of providing conformity assessment, while avoiding the creation of unnecessary barriers to trade.

The Overview of the United States Standardization System provides a greater understanding of the U.S. voluntary consensus standardization and conformity assessment infrastructure.


ANSI Reporter – Special Feature on the National Technology Transfer and Advancement Act

Adoption of DHS Directorate Standards as Department of Homeland Security (DHS) National Standards
January 17, 2012

M-12-08

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Aneesh Chopra
U.S. Chief Technology Officer
Office of Science and Technology Policy

Miriam Sapiro
Deputy
United States Trade Representative

Cass R. Sunstein
Administrator, Office of Information and Regulatory Affairs
Office of Management and Budget

SUBJECT: Principles for Federal Engagement in Standards Activities to Address National Priorities

On February 4, 2011, the President released “A Strategy for American Innovation: Securing Our Economic Growth and Prosperity” and directed Federal agencies to increase their efforts to catalyze technology breakthroughs to advance national priorities. Pursuant to the Strategy for American Innovation, the Office of Science and Technology Policy (OSTP), the Office of Management and Budget (OMB), and the Office of the United States Trade Representative (USTR) are issuing this Memorandum to clarify principles guiding Federal Government engagement in standards activities that can help address national priorities.

The vibrancy and effectiveness of the U.S. standards system in enabling innovation depend on continued private sector leadership and engagement. Most standards developed and used in U.S markets are created with little or no government involvement. This approach – reliance on private sector leadership, complemented by Federal Government contributions to discrete standardization processes as outlined in OMB Circular A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities” – remains the primary strategy for government

1 http://www.whitehouse.gov/innovation/strategy.
2 http://www.whitehouse.gov/omb/circulars_a119/.
3 http://www.whitehouse.gov/omb/circulars_a119/.
engagement in standards development. Consistent with the Administration’s commitment to openness, transparency, and multi-stakeholder engagement, all standards activities should involve the private sector.

In limited policy areas, however, where a national priority has been identified in statute, regulation, or Administration policy, active engagement or a convening role by the Federal Government may be needed to accelerate standards development and implementation to help spur technological advances and broaden technology adoption. In these instances, the Federal Government can help catalyze advances, promote market-based innovation, and encourage more competitive market outcomes. The Federal Government should clearly define its role, and then work with private sector standardization organizations in the exercise of that role.

For example, the *Strategy for American Innovation* describes national priorities with respect to achieving breakthroughs in health care technology and promoting clean energy. In both of these areas, the Federal Government is making substantial technology investments – electronic health record systems and smart grid technologies – to produce productivity gains and improve outcomes. And in both of these technology markets, interoperability standards are needed to decrease the risk that sizable public and private investments will become obsolete prematurely. To accomplish these objectives, the Federal Government, as directed by Congress, is taking a convening role to accelerate standards development, by working closely with domestic and international private sector standards organizations.

The principles and related directions to agencies outlined in this Memorandum are intended to be followed in those limited instances in which the Federal Government engages in a convening or active engagement role together with private sector standardization organizations to address a national priority. Such engagement should be undertaken pursuant to existing legal and policy obligations and the principles identified in the Appendix.

**Federal Government Objectives for Standards Engagement to Address National Priorities**

Once a national priority has been identified, it is important for the Federal Government to engage private sector stakeholders early in the process of identifying technology, regulatory, and/or procurement objectives. The Federal Government’s engagement should be broad-based, and it should rely on open and transparent processes. Broad-based engagement provides public officials with the opportunity to obtain information that often is widely dispersed across the economy.4

At the outset of engagement, the Federal Government should:

- Clearly identify the standards-based challenges it is encountering in addressing a national priority;
- Define its goals as precisely as possible;
- Provide a reasoned analysis of what has led to the perceived standards gap and what needs to be done to close it (including any relevant and appropriate science-based data); and,

Commit, to the extent feasible and appropriate, to support the technical work necessary to achieve the defined goals.

Federal Government engagement in standards activities should be guided by five fundamental strategic objectives:

- Produce timely, effective standards and efficient conformity assessment schemes that are essential to addressing an identified need;
- Achieve cost-efficient, timely, and effective solutions to legitimate regulatory, procurement, and policy objectives;
- Promote standards and standardization systems that promote and sustain innovation and foster competition;
- Enhance U.S. growth and competitiveness and ensure non-discrimination, consistent with international obligations; and
- Facilitate international trade and avoid the creation of unnecessary obstacles to trade.

To realize these objectives, the Federal Government works with the private sector to address common standards-related needs, taking on a convening and/or active-engagement role where necessary to ensure a rapid, coherent response to national challenges. In undertaking such work, the Federal Government may play various roles in the standardization system – user, specifier, participant, facilitator, advocate, technical advisor/leader, convener, or source of funding – to assure that key public policy goals are achieved in a timely and effective manner. Successful achievement of these goals also requires an active effort to promote information sharing and coordination across the Federal Government.

When addressing national priorities, standardization activities should recognize the global nature of many markets. In the context of communications technologies, for example, both users and vendors realize enormous economies of scale when standards are globally developed and deployed. Users benefit from lower prices offered by vendors able to realize the economies of scale of a globally sized market. When diverse national standards are imposed, however, products must conform to diverse requirements for each national market, raising costs for government and private sector users, limiting the flexibility needed for efficiency and innovation, and reducing profitability.

Agency Responsibilities

Agencies considering a convening or active engagement role in private sector standards developing organizations in order to address a national priority area should state their reasons plainly (including why private sector leadership alone is insufficient). Further, agencies should accept and act on feedback on their rationales before assuming this convening or active-engagement role in a private sector standards developing organization. In all cases, agencies should ensure effective intra- and inter-agency coordination of engagement in standards development activities. When an agency commits to a cooperative standards development effort with industry, that commitment should be maintained, as resources permit, and the resulting standards should be used where feasible.
Agencies should use existing processes and, where necessary, establish new processes for open, transparent, and effective two-way communication with private sector interests, ensuring that concerns from private sector entities are given thorough and objective consideration. To the extent feasible and appropriate, agencies should also provide continuous support for their technical experts' participation and leadership activities in mission-critical standards-setting activities and standards organizations, including standards organization-specific training and mentoring. Agencies should periodically review their standards activities to identify gaps in representation for mission-critical areas as part of their long-range planning and adopt policies that value and reward participation in standardization activities.

Agencies should explicitly include consideration of conformity assessment approaches that take account of elements from international systems, to encourage private sector support and minimize duplicative testing. Agencies should evaluate whether their objectives necessitate creating government-unique conformity assessment schemes, which may be expensive to develop and maintain, may impose additional costs on the private sector, and may not be recognized beyond national boundaries. In doing so, agencies should use existing best practices and leverage available resources in the private sector as well as within the Federal Government. Such expertise is available at the National Institute of Standards and Technology (NIST), which has statutory authority to coordinate conformity assessment activities of Federal, State and local governments, and the private sector.5

Both in national priority areas and more generally, agencies should take into account the impact of their standards-related choices on innovation and the global competitiveness of U.S. enterprises,6 including the impact of intellectual property incorporated in standards, consistent with international obligations. On these matters, agencies should consult with USTR, which has statutory authority on international trade issues arising from standards and conformity assessment procedures.

OSTP, OMB, and USTR look forward to working cooperatively with you and your staff to promote engagement in standards activities that support national priorities.

6 Agencies should review OMB Circular A-119, section 6(f) for considerations regarding the use of a standard.
Federal Engagement in Standards Activities to Address National Priorities

Background and Proposed Policy Recommendations

Subcommittee on Standards
National Science and Technology Council

October 2011
Dear Colleagues:

I am pleased to share with you the report *Federal Engagement in Standards Activities to Address National Priorities*. This report provides an overview of the current legal and policy frameworks for government engagement in private-sector standardization and conformity-assessment activities; describes how the government engages in those activities; summarizes stakeholder observations in response to a request for information about government engagement in standardization; and outlines policy recommendations to supplement existing guidance to agencies.

Standardization and conformity-assessment challenges facing the government and private-sector in emerging technology areas—such as smart grid, health information technology, and other areas where interoperability is key to broad deployment of advanced technology solutions—point to the need to review the effectiveness of Federal government engagement in standardization and/or conformity-assessment activities. In December 2010, the National Institute of Standards and Technology, on behalf of the Subcommittee on Standards (SoS) of the National Science and Technology Council, invited the public to provide perspectives on the effectiveness of Federal agencies’ participation in the development and implementation of standards and conformity-assessment activities, and related programs in select technology areas. This information was to assist the SoS develop case studies that Federal agencies can consider in their future engagement in standards development and conformity assessment, particularly for multi-disciplinary technologies or technologies involving engagement by multiple Federal agencies. Through this study, SoS confirmed the need for supplementary guidance to agencies in instances where the Federal government chooses to take a leadership or coordinating role in standardization and/or conformity-assessment activities to ensure a rapid and coherent response to a national priority, as defined in statute or Administration policy, and to ensure efficient and effective investment of public resources.

As noted in the President’s *Strategy for American Innovation* “…the true choice in innovation policy is not starkly between government management and no government involvement, but rather choosing the right role for government in supporting private sector innovation.” This notion applies to standardization and conformity-assessment activities which are, after all, tools of innovation. This report provides context for future discussions within government and between the government and the private-sector regarding government engagement in standardization and conformity-assessment activities in support of national priorities.

Sincerely,

John P. Holdren
Assistant to the President for Science and Technology
Director, Office of Science and Technology Policy
Introduction

This report provides a high-level overview of the current legal and policy framework for government engagement in private-sector standards activities and describes how the government engages in these activities. It summarizes stakeholder observations in response to the December 2010 Request For Information (RFI) issued by the National Institute of Standards and Technology on behalf of the Subcommittee on Standards of the National Science and Technology Council about government engagement in standardization generally and in specific technology areas. Finally, the report outlines policy recommendations for consideration as a component of proposed supplementary guidance to agencies engaging in private-sector standards activities to address national priorities specified by Congressional mandate or Administration policy.

Background

Standards can play an important role in enabling technological innovation by defining and establishing common foundations upon which product differentiation, innovative technology development and other value-added services may be developed. Standards are also essential for enabling seamless interoperability between and across products and systems. In the United States private-sector-led standards development that is informed by market needs has played a foundational role in facilitating competition, innovation and global trade.

The introduction to the third edition of the U.S. Standards Strategy, released by the American National Standards Institute (ANSI), outlines key aspects of the standards environment to be considered by both the government and private sector in developing a strategic approach to standardization. In particular, the Strategy recognizes that,

“At home,

- Investment by public and private sectors in the development of global standards is directly related to the health of the economy.
- Economic downturns produce reductions in the resources available for global standards development.
- Users of standards are increasingly aware of their importance and are demanding a U.S. system that can produce and deliver standards with maximum efficiency and minimum cost, eliminate duplication, and optimize the benefits of a decentralized system.
- Government agencies at the Federal, state, and local levels are willing to invest in voluntary consensus standards that have been developed in accordance with globally accepted principles.
- The national interest in some emerging areas of standardization such as homeland security, smart grid, healthcare, energy efficiency, nanotechnology, and cybersecurity, demands a new level of coordination and effort, and will require the development of new ways for the public and private sectors, as well

1 http://www.ansi.org/standards_activities/nss/ussa.aspx (May 2011)
as large numbers of standards development organizations and consortia, to work together in order to preserve national competitiveness.

- The U.S. government has enhanced its efforts to coordinate agency standards activities and engagement and continues to recognize the integrity of the existing U.S. standards process both through active participation in standards development and as user of the standards for regulation and procurement."

Recent public-private-sector efforts to engage participants from multiple disciplines that traditionally have not worked together to develop standards (e.g., health information technology (IT), smart grid, and other areas where a national priority has been identified) point to the need to provide both private- and public-sector participants greater clarity early in the process about the nature and purpose of Federal government engagement.

**Current Legal and Policy Framework**

Federal government agencies engage in standardization in a wide range of mission-specific roles, including contributing to the development of standards in the private sector; advocating for U.S. interests in the development and use of standards (e.g., ensuring that standards are not used as technical barriers to trade by trading partners); using standards for procurement, regulatory or policy actions; and addressing competition-related aspects of standards-setting activities.

A series of statutes, regulations, and administrative orders comprise the legal framework that defines the Federal government’s use of standards, and its participation in the development of standards. Unlike a number of other countries, the United States does not have an overarching “standardization law” that provides the basis for standards and standardization-related activities.

Statutes and administrative requirements that contain provisions addressing standards development, use, and related government engagement include:

- National Technology Transfer and Advancement Act of 1995
- Trade Agreements Act of 1979 (as amended)

In addition, the following statutes provide more detailed mandates for Federal agencies’ responsibilities with regard to the use of specific standards and associated standards development initiatives:

- Standards Development Organization Advancement Act of 2004
- National Cooperative Research and Production Act of 1993
- Telecommunications Act of 1996
• Health Insurance Portability and Accountability Act of 1995 and the Health Information Technology for Economic and Clinical Health Act of 1996
• Energy Independence and Security Act of 2007 (EISA)
• Federal Information Systems Management Act of 2002

**National Technology Transfer and Advancement Act of 1995**
The National Technology Transfer and Advancement Act (P.L. 104-113 or NTTAA) directs Federal agencies to use technical standards “that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments,” except where inconsistent with applicable law or impractical. The National Institute of Standards and Technology (NIST) is charged with coordinating Federal agency implementation of standards and conformity-assessment-related NTTAA provisions.

**OMB Circular A-119**
The policies outlined in the Office of Management and Budget Circular A-119 on Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity-Assessment Activities apply to all executive branch departments and agencies, and to independent regulatory agencies. The Circular was last revised in 1998, in part to provide guidance on how agencies could meet the intent and implement the standards and conformity-assessment-related provisions of the NTTAA. It directs agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical. It also provides guidance to agencies on participation in the development of voluntary consensus standards, and articulates policies relating to the use of standards by Federal agencies.

**Trade Agreements Act of 1979 (as amended)**
The Trade Agreements Act of 1979 (as amended) prohibits U.S. agencies from engaging in standards-related activities that create unnecessary obstacles to trade, and gives the U.S. Trade Representative (USTR) the responsibility to coordinate the consideration of international trade policy issues resulting from standards and related measures, such as conformity-assessment procedures.

**How the Government Engages**
Government engagement in the U.S. standards system varies widely depending upon individual agencies’ missions and functions. Roles include those of user, person setting specifications, participant, facilitator, advocate, technical advisor/leader, convener and source of funding. Agencies at every level of government use standards to support regulation, procurement and policy activities, as well as incorporate standards into voluntary programs. Government agencies also use standards extensively to provide citizen services, enable connectivity of commercial information technology systems to government systems, and support disbursements of grants, loans, and other similar financial tools and incentives.

[2](http://standards.gov/standards_gov/nttaa.cfm)
In instances where the government acts as a standards user, government agencies and their staff often participate in the development of standards to ensure that specific standards meet their legislative and mission requirements. In FY 2010, Federal agencies reported that 2,837 employees participated in 531 private-sector standards development organizations in roles including standards development, management of standards activities, workshops, seminars, etc. It is important to note that this number does not capture the very large number of state and local government officials from the approximately 3000 counties and other local jurisdictions in the United States who participate in the development of model codes (primarily for building construction and related activities), which are widely adopted as local building construction codes, or other standards activities.

Competition agencies, primarily the U.S. Department of Justice and the Federal Trade Commission, have an interest in ensuring that private-sector standards setting organizations and associated standards development activities are not used in ways that harm competition, or violate antitrust, intellectual property and/or consumer protection laws. In these instances, the Federal government’s interest goes beyond specific technologies to private-sector competitive behavior.

**Government Use of Conformity-Assessment Systems**

Federal conformity-assessment activities are a means of providing confidence that the products and services regulated or purchased by Federal agencies, or that are the subject of Federal assistance programs, have the required characteristics and/or perform in a specified manner. The NTTAA directs NIST to coordinate Federal, state, and local government standards and conformity-assessment activities with those of the private sector, with the goal of eliminating unnecessary duplication and complexity in the development and promulgation of conformity-assessment requirements and measures. Numerous Federal agencies are engaged in conformity-assessment activities. In addition, as part of its role mandated by the NTTAA, many Federal programs utilize NIST support to help design and implement appropriate and effective conformity-assessment programs.

**Responses to the Request for Information**

Respondents to the December 2010 Request for Information (RFI), issued on behalf of the National Science and Technology Council’s Subcommittee on Standards (NSTC SoS) to seek broad input about the effectiveness of Federal agencies’ participation in private sector led standardization activities conveyed a wide range of views. Responses indicated that Federal agency participation in standardization activities can

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3 14th Annual Report on Federal Agency Use of Voluntary Consensus Standards and Conformity Assessment, June 2011, currently in the clearance process


have one of two effects: (a) agency involvement can contribute positively to standardization activities, resulting in an overall improvement in product reliability and cost containment or, (b) agency involvement can limit or hinder the advancement of technology, resulting in mandates that detract from research and development efforts in response to market-driven forces. Most respondents noted that U.S. government contributions and participation could be improved to maximize benefits and minimize obstacles.

There was agreement among respondents that the U.S. government should continue to play the role of participant in private sector standards setting processes. Many commended the U.S. government’s support of open, consensus-based, transparent standards processes. There was also general agreement that the effectiveness of government participation depends on the level and consistency of involvement and commitment of resources, both staff and budgetary, to the process. Lack of coordination among agencies, where more than one agency has an interest in a standards activity, was cited by many respondents as having a negative impact on government effectiveness. Specifically, respondents noted that where agency objectives are seen as overlapping or unclear, agencies may be providing redundant support or even competing with one another for work in different standards portfolios.

Many comments emphasized the existence of strong public-private relationships and the willingness of industry to provide subject matter experts to participate in standards activities identified as important to government regulatory, procurement or policy needs, where relevant. These factors have fostered a public-private partnership that allows industry to participate in the implementation of regulatory and procurement policy in a way that is, in most cases, efficient and cost effective. Most respondents supported a strong partnership whereby the government participates in standards development as one of many stakeholders, rather than in a lead role. Suggestions for enhancement of the public-private partnership included: (a) better communication – both between the public and private sectors and within the government; (b) more clearly identified end goals for government engagement in a particular standards activity; (c) enhanced and robust collaboration and engagement; and (d) better framing of the technical and policy issues.

Several questions specific to intellectual property rights (IPR) in standards were included in the RFI. A number of respondents noted that there is no one ideal, one-size-fits-all IPR policy and that standards organizations are in the best position to establish effective policies for addressing IPR issues related to the standards they develop. The respondents specifically recommended that IPR policies of standards organizations need to take into account the interests of both IPR holders and those seeking to use or implement the IP included in the standard or standards. Also, standards organization IP

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7 A standards organization is defined as a private sector association, organization or technical society that develops, establishes or coordinates standards, specifications, handbooks or related documents. The term is inclusive of both formal consensus standards developers as well as consortia and for a. (OMB Circular A-119, Section 3)
policies should be easily accessible and the rules governing the disclosure and licensing of IPR should be clear and unambiguous.

**Government Leadership in Select Technology Areas**

In a limited number of specific cases, such as cybersecurity, health IT, smart grid and public safety communications, the Federal government has taken on a leadership role in private sector standards development. Detailed review of the government’s participation in these technology areas leads to some preliminary observations about the necessary preconditions to support success when the government takes on a leadership or coordination role in standards development. These observations are based on input from the December 2010 RFI and interviews with agency staff engaged in these areas.

For example, in the case of smart grid, EISA establishes clear roles for NIST, the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE), and cites NIST-identified standards both as those that FERC may consider for adoption and as a criterion in evaluating DOE investment grant applications. Simultaneously, industry-wide recognition and support of the need for a strong Federal role in coordinating standards for the smart grid\(^8\) has made possible the rapid pace of work and the delivery of meaningful early results. The open and transparent process used to gather input for framework, identification of standards needs, and coordination in standards development has enabled broad buy-in and support for this work.

Similarly in the case of electronic health records interoperability, the Office of the National Coordinator for Health Information Technology (ONC) used the Standards and Interoperability (S&I) framework to provide a strong federal role in coordinating standards and providing an innovative platform to accelerate standards development and adoption to support meaningful use. The S&I framework uses an open, community driven, and transparent process to rapidly prototype and pilot HIT standards, and provide the HIT Standards Committee (HITSC) with additional real-world information regarding HIT standards. For example, in less than twelve months, the Direct Project community was able to pilot multiple approaches for secure point-to-point messaging, reach consensus across the healthcare industry on a single standardized approach, and successfully demonstrate using this approach for a real information exchange\(^9\). This approach has been replicated in the S&I Framework to reach consensus on other HIT standards to support meaningful use and health information exchange\(^10\). The Direct

\(^8\) [http://standards.gov/standards_gov/sos_rfi_docs/73_AT&T.pdf](http://standards.gov/standards_gov/sos_rfi_docs/73_AT&T.pdf)  

\(^9\) [http://directproject.org/](http://directproject.org/): The Direct Project specifies a simple, secure, scalable, standards-based way for participants to send authenticated, encrypted health information directly to known, trusted recipients over the Internet.

Project was launched by ONC to bring together several companies and organizations in the health information technology community to contribute to the development of standards.

Thus a policy framework and/or standardization mandate outlined in legislation and/or via Administration directives needs to be combined with visible high level government support for the specific projects undertaken, with a clear rationale for why expedited standards development efforts are necessary. Where the Federal government itself is a major user or customer, as in electronic health records or information system security, specific government needs should be clearly articulated within the standards process. Coordination among interested and affected government agencies is also important. Various coordination modes have been used in the past, including National Science and Technology Council committees or subcommittees, interagency working groups, task forces, and/or fast-track action committees. Standards setting activities are also more likely to be successful if a robust, open process, in which private and public sector stakeholders are invited to provide input, is established at the outset. In assuming a leadership or coordination role, the Federal government should clearly articulate its needs, expectations and the mechanisms by which it intends to engage with the stakeholders. The Federal government should also clearly explain how leadership will transition to the private-sector when appropriate, or will be terminated upon reaching certain well-defined objectives. Such policies can help establish a robust foundation for standards efforts that may take place over long periods of time and thus require sustained private-sector stakeholder participation, and ultimately private sector leadership.

Early development of a framework that identifies standards gaps and priority areas that need to be addressed and identification, where relevant, of a dedicated Federal effort to address those priorities is important. Well-articulated frameworks help assure the private sector that its role in developing the needed standards is well understood and valued by the government.

Conformity assessment requirements and implementation should be addressed as an integral component of these frameworks. Conformity assessment mechanisms provide confidence that products and systems meet the standards in question, and ensure interoperability. Conformity assessment that leverages existing private-sector programs can help lower the cost of implementation, and also provide added impetus for innovation and competitiveness.

When participating in standards development efforts, particularly in a leadership or coordination role, the Federal government should proactively promote industry-led efforts and widely accepted standards and practices. Close collaboration with stakeholders can help address the challenges associated with the need to accelerate standards development to keep pace with rapid technological advances. A designated Federal lead official who serves as the go-to person for the standards effort can help bring clarity in communication about leadership and decision-making responsibilities.
This also provides both the government and the private-sector participants a point person to approach and hold responsible for progress.

Following the initiation of these efforts, continuing support of senior leadership can be instrumental in sustaining a rapid pace of activities. Continuous, sustained and systematic public outreach and engagement should be a critical element of a Federal government leadership role.

Policy Recommendations

1. Recognize that in most government-private-sector standards engagements, the primary role of the government will continue to be that of active contributor to the private-sector-led process.

Most standards that are developed and used in the U.S. market are created with little or no government involvement. The U.S. government has long recognized that the private-sector, driven by innovators and market need, is ordinarily in the best position to drive standardization in a technology area. In most instances when government engages in the private-sector-led standards process, the preferred government role is as an active contributor. There are limited circumstances, however, where the Federal government engages in a leadership or coordinating role in private sector standardization activities to address national priorities established in statute or Administration policy. Recent examples include multidisciplinary technology areas such as smart grid and health IT. In the case of smart grid, government leadership brought together stakeholders from the various domains constituting the smart grid in a short time frame. Ordinarily, it might have taken much longer for these different stakeholders to coalesce in a single forum to rapidly identify critical gaps and needs limiting the development and adoption of an interoperable smart grid.

2. Identify the context(s) where Federal government leadership/coordination may be appropriate.

In specific cases, Congressional mandates have directed a Federal agency (or agencies) to lead standards development efforts to address a specific legislative priority. The Federal government may also determine that, based on public and/or executive branch input, there is a need to ensure that relevant standards are available on a timely basis to support a rapid, coherent response to a national priority identified in Administration policy. Government leadership may be necessary to assure that key public policy goals are met in a timely manner.

In this context, it should be noted that the American National Standards Institute (ANSI), a private sector, not for profit federation, has a long history of convening cross-sector standards panels and coordination initiatives that address key national priorities, including homeland security, nanotechnology, biofuels, nuclear energy, chemical regulations, healthcare information technology, electric vehicles, and identity-theft protection and identity management. The mission of each of these activities has been to bring all relevant stakeholders together swiftly to identify, coordinate, and harmonize the
voluntary consensus standards that are critical to supporting each area. Many of these activities were initially formed at the request of a government agency or agencies, and all have robust participation from both public- and private-sector experts.

Federal government engagement in a leadership or coordination role in private-sector standardization should be considered carefully. Such engagement should be undertaken pursuant to existing legal and policy obligations, and be open, transparent and provide for broad participation.

3. Outline objectives for government engagement in standardization activities to support national priorities.

As the Federal government considers more active engagement in a standardization process, irrespective of the level of Federal government engagement, such engagement should be guided by the following fundamental objectives:

a) Ensuring timely availability of effective standards and efficient conformity assessment schemes critical to addressing national priorities established in statute or Administration policy.

b) Achieving cost-efficient, timely, and effective solutions to regulatory, procurement, and policy objectives.

c) Promoting standards and standardization systems that enable innovation and foster competition.

d) Enhancing U.S. competitiveness while ensuring national treatment.\(^\text{11}\)

e) Facilitating international trade and avoiding the creation of unnecessary obstacles to trade.

In order to realize these objectives, the Federal government should partner with the private sector to address common standards needs. In this context, the government must strategically and judiciously exercise its various roles in the standardization system – user, person setting specifications, participant, facilitator, advocate, technical advisor/leader, convener and source of funding. There should also be an active effort to promote information sharing and coordination across Federal agencies. The Federal government should detour from its typical modes of engagement in standards development with the private sector and take on a leadership or coordination role only when it is essential to do so to assure that key public policy goals are met in a timely and effective manner.

4. Effective coordination and participation by agencies.

Significant public and societal benefits can accrue from government support in the development of consensus standards and their subsequent use by the government. For example, staff at the Consumer Product Safety Commission worked with ASTM

\(^{11}\) National treatment is the principle of giving others the same treatment as one’s own nationals. [http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm)
International and the baby walker industry to develop a standard to reduce the number of injuries from the use of baby walkers. In 1992, an estimated 25,700 children younger than 15 months of age were treated in U.S. hospital emergency rooms for baby walker injuries, most related to falls down stairs. The standard, which included performance requirements to address stair falls, was published in 1997, and by 2005 the estimated number of baby walker injuries treated in hospital emergency rooms had dropped dramatically to 2,600 – a 90% reduction.

The entire standardization lifecycle – development, implementation, assessment and implementation of conformance requirements, and review – should be considered in developing and implementing government-led standards efforts. Agency leaders should ensure effective intra- and inter-agency coordination of engagement in standards development activities, prioritizing needs, and establishing clear timelines. When an agency (or agencies) commits to a cooperative standards development effort with industry, that commitment should be clearly articulated and maintained to the extent possible. Agencies should use existing processes and, where necessary, establish new processes for effective and open communication with the private sector with the aim of understanding their interests and ensuring that private sector concerns are given objective consideration. To the extent practical, agencies should continue to provide technical and policy expertise, and where appropriate, leadership efforts in mission critical standards setting activities. Agencies should periodically review their standards activities to identify gaps in representation for mission-critical areas as part of their long-range planning and establish policies that value and reward participation in standardization activities.

5. Clarify agency responsibilities with respect to the full range of standards setting alternatives.

Agencies should continue to look to private-sector standards development processes to meet their needs, as directed in law and policy. Preference should be given to processes, whether formal consensus processes or other, that are well coordinated, are internationally accepted, and deliver the most generally favorable technical and economic outcomes, such as improved interoperability, product differentiation, and others. The current diversity of standards organizations affords a range of opportunities for identifying appropriate venues for successful standards development, taking into account the scope and recent track record of candidate standards organizations in a particular area of standards development. In national priority areas, coordination among standards organizations may be necessary in specific instances to promote interoperability, maximize the utility of standards projects, extend the field of application for existing protocols, and promote efficient use of resources.

Agencies should take into account the impact of their standards choices on innovation and the global competitiveness of U.S. enterprises, including the impact of intellectual property incorporated in standards, and should explicitly include consideration of conformance assessment approaches that enable the least burdensome compliance with
standards specified by agencies. Often such approaches can be built using elements from international systems that have significant private sector endorsement and minimize duplicative testing, rather than creating government unique conformity assessment schemes that are often expensive to develop and maintain and are not recognized beyond national boundaries.

6. Lay out key principles underpinning voluntary standardization processes.

A limited set of foundational attributes of standardization activities are called out in OMB Circular A-119, focusing on voluntary, consensus standards activities. It is important to recognize as well the contributions of standardization activities that take place outside of the formal voluntary, consensus process, particularly in emerging technology areas. The following additional attributes should also be considered, to maximize the impact of those activities on enabling innovation and fostering competition, while also assuring fulfillment of agency regulatory, procurement, and policy missions:

- **Transparency**: essential information regarding standardization activities is accessible to all interested parties.
- **Open Participation**: all interested or affected parties have an opportunity to participate in the development of a standard, with no undue financial barriers to participation.
- **Flexibility**: different product and services sectors rely on different methodologies for standards development that meets their needs.
- **Effectiveness and Relevance**: standards are developed in response to regulatory, procurement and policy needs, and take account of market needs and practices as well as scientific and technological developments.
- **Coherence**: the process avoids overlapping and conflicting standards.
- **International Acceptance**: as product and service solutions cross borders, the public and private sectors are best served by standards that are international in scope and applicability.
- **Net Benefit**: standards used to meet regulatory and procurement needs should maximize net benefits of the use of such standards.

In addition, agencies should give consideration to the following attributes of standards organization processes:

- **Access and Availability**: the text of standards and associated documents should be available to all interested parties on a reasonable basis, which may include monetary compensation where appropriate.
- **Clear Intellectual Property Rights (IPR) Policies**: standards organization IPR policies should take into account the interests of both IPR holders and those seeking to use or implement the IP included in the standard or standards. These policies should be easily accessible and the rules governing the disclosure and licensing of IPR should be clear and unambiguous.
- **Timeliness**: standards should be available in a timely manner.
The IPC continues to emphasize both prescriptive and performance-related provisions. The code changes have made many improvements to the 2012 code that provide clarity of content, resolve common interpretation issues and give plumbing contractors and engineers the tools necessary to take advantage of new technology. A proven venting system method has been added that now complies the most extensive collection of venting options in the world.

Here are just a few of the significant changes.

Section 802.2 Installation of Indirect Waste Piping
2012 Code: 802.2 Installation. All indirect waste piping shall discharge through an air gap or air break into a waste receptor or standpipe. Waste receptors and standpipes shall be trapped and vented and shall connect to the building drainage system. All indirect waste piping that exceeds 3 feet 30 inches (762mm) in developed length measured horizontally, or 4 feet 34 inches (1172mm) in total developed length, shall be trapped.

Exception: Where a waste receptor receives only clear water waste and does not directly connect to a sanitary drainage system, the receptor shall not require a trap.

Commentary: In the past, indirect waste piping was required to be trapped where it exceeded 24 inches in horizontal developed length or 48 inches in total developed length. The justification for increased developed lengths without a trap, 30 inches for a horizontal measurement and 54 inches in total developed length is based on

Section 917 Single Stack Vent System
917.1 Where permitted, a drain stack shall serve as a single stack vent system where sized and

The webinar at youtube.com/user/ICCMEDIA will inform code users on how helpful the new book is in identifying the specific code changes that have occurred and, more important, in understanding the reasons behind the changes.

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The International Code Council is an association dedicated to helping the building safety community and construction industry provide safe and sustainable construction through the development of codes and standards used in the design, build and compliance process.
A Message from the United States Fire Administrator about Residential Fire Sprinklers

The U.S. Fire Administration has promoted research, development, testing, and demonstrations of residential fire sprinkler systems for more than 30 years. The research regarding residential fire sprinkler systems has indisputably demonstrated the following:

- Residential fire sprinklers can save the lives of building occupants.
- Residential fire sprinklers can save the lives of firefighters called to respond to a home fire.
- Residential fire sprinklers can significantly offset the risk of premature building collapse posed to firefighters by lightweight construction components when they are involved in a fire.
- Residential fire sprinklers can substantially reduce property loss caused by a fire.

The time has come to use this affordable, simple and effective technology to save lives and property where it matters most – in our homes.

In the past year, the National debate about the benefits of residential fire sprinklers passed a major milestone with the adoption of a change to the International Residential Code that will require fire sprinklers in all new construction. This code change survived rigorous scrutiny, during which all interested parties had ample opportunity to comment on the technical merits of the issue. Since then, parties who oppose this life-saving technology have started a vigorous campaign to enact laws at the state level that will prohibit adoption of sprinkler requirements for new homes.

I encourage every member of the fire service to stay abreast of this rapidly changing situation, and to be ready to voice any concerns that you have about proposed legislation to your respective state legislature. The Fire Sprinkler Initiative website has been established to provide a central clearing house for up-to-date information. Log on to the site at [http://firesprinklerinitiative.org](http://firesprinklerinitiative.org) – stay vigilant and keep the fire service community informed of developments in your area. Only by working together can we save lives.

It is the position of the U.S. Fire Administration that all Americans should be protected from death, injury, and property loss resulting from fire in their residence. All homes should be equipped with both smoke alarms and residential fire sprinklers, and all families should have and practice an emergency escape plan. The U.S. Fire Administration supports all efforts to reduce the tragic toll of fire losses in this nation, including the recently adopted changes to the International Residential Code that require residential fire sprinklers in all new residential construction.

Glenn A. Gaines

Acting Assistant Administrator
U.S. Fire Administration
Comparison on Fire Safety Provisions*
(Revised 2/28/03)

(S) = Small difference in fire protection,  (M) = Moderate difference,  (L) = Large difference
Prepared by Mark Kluver, Joseph (Jim) Messersmith Jr., and Steve Skalko - Portland Cement Association
mkluer@cement.org -- jmessersmith@cement.org -- sskalko@cement.org

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<td>1014.11 (p.122) 2-hr. shafts where exit stairs connect 4 stories or more and H-1, H-2 and H-3 occupancies. 1-hr. for floor openings connecting fewer than 4 stories.</td>
<td>Table 705.1.2 (p.94) 2-hr. shaft where for exit stairs in buildings 4-story and higher and those containing A and H occupancies. 1-hr. for buildings less than 4 stories. Not less than the rating of penetrated floor, but not to exceed 2-hr.</td>
<td>1005.3.3 (p.1-116) 2-hr. shaft required for exit stairs in buildings 4-story and higher and those of Types I &amp; II-F.R. construction. 1-hr. for buildings less than 4 stories.</td>
<td>707.4 (p.101) 2-hr. shafts where exit stairs connect 4 stories or greater. 1-hr. where exit stairs connect fewer than 4 stories. Not less than the rating of penetrated floor, but not to exceed 2-hr.</td>
<td>11.1.3.2.1 (p.110) 2-hr. shafts where exit stairs connect 4 stories or more. 1-hr. where exit stairs connect fewer than 4 stories and in non-high rise apartments and hotels w/ sprinklers.</td>
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<td>710.3 (p.75) 2-hr. shafts required for floor openings connecting 4 stories and greater. 1-hr. for floor openings connecting less than 4 stories. Not less than the rating of penetrated floor, but not to exceed 2-hr.</td>
<td>Table 705.1.2 (p.94) 2-hr. shaft required for buildings 4-story and higher. 1-hr. for buildings less than 4 stories. Not less than the rating of penetrated floor, but not to exceed 2-hr.</td>
<td>Table 6-A (p.1-66) 2-hr. shafts in Type I &amp; II-F.R. construction. 1-hr. shafts required for all other Types of construction.</td>
<td>707.4 (p.101) 2-hr. shafts required for floor openings connecting 4 stories or greater. 1-hr. for floor openings connecting less than 4 stories. Not less than the rating of penetrated floor, but not to exceed 2-hr.</td>
<td>8.12.1.5, 24.3.1.1.3, 25.3.1.1.4 (p.105, 215, 219) 2-hr. shafts required for floor openings connecting 4 stories or greater. 1-hr. for floor openings connecting less than 4 stories and in non-high rise apartments and hotels with sprinklers. Not less than the rating of penetrated floor, but not to exceed 2-hr.</td>
<td>NBC &amp; SBC</td>
<td>IBC (L)</td>
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<td>Exit Access Corridor (Ratings)</td>
<td>NBC</td>
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<td>Table 1011.4 (p.116)</td>
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<td>1004.3.3.3, 1004.3.4.3, 1007.5.3 &amp; 1007.6.1 (p.1-114)</td>
<td>Table 1004.3.2.1 (p.234)</td>
<td>11.1.3.1 &amp; xx.3.6 of Chapters 16 -28 (p.110)</td>
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<td>1-hr. required in all occupancies with occupancy loads greater than 30. In most occupancies, 1-hr. can be reduced to ½-hr. or zero for sprinklers.</td>
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<td>Hallways are generally used in lieu of corridors and do not require a fire-resistance rating.</td>
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<td>In most occupancies, 1-hr. required for occupancy loads over 30. In other than H, R, &amp; some I occupancies, 1-hr. can be reduced to zero for sprinklers.</td>
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<td>Corridor (Ratings)</td>
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<td>Table 704.2.4 (p.92)</td>
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<td>1005.3.5.2 (p.1-117)</td>
<td>1005.3.5.1 (p.238)</td>
<td>11.2.4.3.1 (p.121)</td>
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<td>In most occupancies, 1-hr. can be reduced to ½-hr. or zero for sprinklers.</td>
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<td>2-hr. minimum.</td>
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<td>Horizontal Exits (Ratings)</td>
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<td>1019.2 (p.130)</td>
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<td>1005.3.5.2 (p.1-117)</td>
<td>1005.3.5.1 (p.238)</td>
<td>11.2.4.3.1 (p.121)</td>
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<td>2-hr. minimum.</td>
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<td>2-hr. minimum.</td>
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<td>Sprinkler Thresholds</td>
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<td>904.2 thru 904.10 (p.93)</td>
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<td>904.2 (p.1-94)</td>
<td>903.2 (p.180-182)</td>
<td>Sec. xx.3.5.1 in Chapters 16 – 30</td>
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<td>&gt;12,000 sq.ft. fire area for A-1, A-3 and A-4 except where floor is at level of exit egress discharge. &gt;5,000 sq.ft. for A-2.</td>
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<td>&gt;12,000 sq.ft. of area used for display, sales or storage of combustible material.</td>
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<td>&gt;300 occupant load, w/ exception for single multi-purpose rooms of ≥12,000 sq.ft. not used for exhibition.</td>
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<td>Assembly (A)</td>
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<td>≥20,000 sq.ft. fire area</td>
<td>No requirement.</td>
<td>≥20,000 sq.ft. area.</td>
<td>≥20,000 sq.ft. area.</td>
<td>≥20,000 sq.ft. fire compartment, or building 4 or more stories.</td>
<td>NBC &amp; IBC</td>
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<td>Education (E)</td>
<td>All hospitals.</td>
<td>All hospitals.</td>
<td>All hospitals.</td>
<td>All hospitals.</td>
<td>NBC &amp; UBC</td>
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<td>&gt;3 stories, but not required in 3-story buildings with exterior stairs.</td>
<td>≥3 stories or containing ≥16 dwelling units.</td>
<td>All apartments (Note: Based on 2003 Edition of IBC)</td>
<td>All, but not required where exits are at ground level or where stair serves maximum of 2 units, both of which are on the same floor.</td>
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<td>Hospitals (I-2)</td>
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<td>Table 705.1.2 (p.94)</td>
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<td>1005.3.5.2 (p.1-117)</td>
<td>1005.3.5.1 (p.238)</td>
<td>11.2.4.3.1 (p.121)</td>
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<td>2-hr. minimum.</td>
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<td>Mercantile (M)</td>
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<td>&gt;12,000 sq.ft. fire area, ≥24,000 sq.ft. total, or over 3 stories.</td>
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<td>≥2,500 sq.ft. area in woodworkng occupancies.</td>
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<td>Apartment (3 dwellings +) (R-2)</td>
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<td>≥12 dwelling units or over 2 stories.</td>
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<td>≥12,000 sq.ft. area, ≥24,000 sq.ft. total, or over 3 stories.</td>
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<td>≥12,000 sq.ft. fire area, ≥24,000 sq.ft. total, or over 3 stories.</td>
<td>No requirement.</td>
<td>≥12,000 sq.ft. area, ≥24,000 sq.ft. total, or over 3 stories.</td>
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<tr>
<td>NBC</td>
<td>Close to Equal</td>
<td>Equal</td>
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<tr>
<td>IBC</td>
<td>NBC (S)</td>
<td>NBC (S)</td>
<td>NBC (S)</td>
<td>NFPA 5000 (S)</td>
<td>NFPA 5000 (S)</td>
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<tr>
<td>NFPA 5000</td>
<td>NBC</td>
<td>Close to Equal</td>
<td>Equal</td>
<td>Equal</td>
<td>Equal</td>
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<tr>
<td>Minimum Open Space to Qualify</td>
<td>NBC</td>
<td>SBC</td>
<td>UBC</td>
<td>IBC</td>
<td>NFPA 5000</td>
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<tr>
<td>Area Increases for Open Space</td>
<td>506.2 (p.59-60)</td>
<td>503.3 (p.76)</td>
<td>505.1.1 (p.1-53)</td>
<td>506.2 (p.83 and p. IBC-22 of 2002 Supplement)</td>
<td>7.6.2.1 (p.94)</td>
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<tr>
<td>Minimum Open Space to Qualify</td>
<td>30 feet and must be accessible via a 18 feet posted fire lane.</td>
<td>30 feet.</td>
<td>20 feet.</td>
<td>20 feet.</td>
<td>20 feet.</td>
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<td>Maximum % Increase of:</td>
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<td></td>
<td>NBC Equal</td>
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<td>150%</td>
<td>30 feet on 100% of perimeter.</td>
<td>Not Permitted.</td>
<td>Not Permitted.</td>
<td>Not permitted.</td>
<td>60 feet on 100% of perimeter for business, industrial, mercantile, storage and some assembly.</td>
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<td>100%</td>
<td>30 feet on 75% of perimeter.</td>
<td>30 feet on 100% of perimeter.</td>
<td>40 feet on all of 4 sides. Or 60 feet on all of 3 sides.</td>
<td>Not permitted.</td>
<td>40 feet on 100% of perimeter for business, industrial, mercantile, storage and some assembly.</td>
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<td>75%</td>
<td>30 feet on 62.5% of perimeter.</td>
<td>30 feet on 81.25% of perimeter.</td>
<td>35 feet on all of 4 sides. Or 50 feet on all of 3 sides.</td>
<td>30 feet on 100 % of perimeter.</td>
<td>30 feet on 100% of perimeter.</td>
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<tr>
<td>50%</td>
<td>30 feet on 50% of perimeter.</td>
<td>30 feet on 62.5% of perimeter.</td>
<td>30 feet on all of 4 sides. Or 40 feet on all of 3 sides. 60 feet on 3 sides.</td>
<td>20 feet on 100% of perimeter. Or 30 feet on 75% of perimeter.</td>
<td>20 feet on 100% of perimeter. Or 30 feet on 75% of perimeter.</td>
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<tr>
<td>25%</td>
<td>30 feet on 37.5% of perimeter.</td>
<td>30 feet on 43.75% of perimeter.</td>
<td>25 feet on all of 4 sides. Or 30 feet on all of 3 sides. Or 40 feet on 3 sides.</td>
<td>20 feet on 62.5% of perimeter. Or 30 feet on 50% of perimeter.</td>
<td>20 feet on 62.5% of perimeter. Or 30 feet on 50% of perimeter.</td>
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<tr>
<td>Fire Wall</td>
<td>NBC</td>
<td>SBC</td>
<td>UBC</td>
<td>IBC</td>
<td>NFPA 5000</td>
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<tr>
<td>(Ratings)</td>
<td>Tables 602 &amp; 707.1 (p.64 &amp; 72) 4-hr. for (H-2) 3-hr. for (F-1, S-1, H-3, I-3 &amp; U) 2-hr. for all other occupancies, but not less than required based on the type of construction. H-1 must be separate detached building.</td>
<td>Table 600 &amp; Table 705.1.2 (p.84 &amp; p.94) 4-hr. for all occupancies.</td>
<td>504.6 (p.1-52) 4-hr. for Types I, II-F.R., III and IV construction. 2-hr. for Types II 1-hr., II-N and V construction. (Note: Fire Walls are Area Separation Walls in UBC.)</td>
<td>Table 705.4 (p.98) 4-hr. for H-1, H-2 3-hr. for F-1, H-3, H-5, M, S-1 3-hr. in Types I, III and IV construction for A, B, E, H-4, I and U 2-hr. for F-2 &amp; S-2 occupancies. 2-hr. in Types II &amp; V construction for A, B, E, H-4, I and U occupancies.</td>
<td>8.3.1 (p.97) 2-hr. for all occupancies.</td>
<td></td>
</tr>
<tr>
<td>(Material)</td>
<td>707.1 (p.72) Noncombustible construction in all cases.</td>
<td>Chapter 6 &amp; 704.5 (p.81 &amp; 93) Code is not explicit on materials for construction of fire walls. Code has requirements for acceptable materials like CMU, brick or concrete.</td>
<td>Table 6-A (p.1-66) Code is not explicit on construction of fire walls. Code has requirements for types of materials for exterior and interior walls, both bearing and nonbearing, based on type of construction.</td>
<td>705.3 (p.97) Noncombustible for all but Type V Construction.</td>
<td>7.2 (p.83) Code is not explicit on construction of fire walls. Code only has requirements for types of materials for exterior and interior walls, both bearing and nonbearing, based on type of construction.</td>
<td></td>
</tr>
<tr>
<td>(Parapets)</td>
<td>707.6 (p.72) Extend 32-in. above roof surface. Fire walls allowed to terminate at noncombustible roof, and at fire retardant treated wood and Type X gypsum board with Class C roofing for Types III, IV and V construction</td>
<td>704.5.1 (p.93) Extend 36-in. above roof. Fire walls allowed to terminate at noncombustible roofs in Types I and II construction, and fire retardant treated wood roofs on Type III, IV and V construction.</td>
<td>504.6.4 &amp; 504.6.5 (p.1-52) Extend 30-in. above roof. 4-hr. fire walls allowed to terminate at 2-hr. roof/ceiling assembly. 2-hr. walls allowed to terminate at 1-hr. roof/ceiling assemblies with Class B roofing. (Note: 2-hr. walls only permitted on Types II A, IIB and V construction.)</td>
<td>705.6 (p.98) Extend 30-in. above roof, except for stepped buildings. Fire wall terminations are a combination of those allowed in 3 model codes.</td>
<td>8.3.2.10 (p.98) Extend 36-in. above roof. Fire walls allowed to terminate at noncombustible sheathing of 2-hr. roof. Fire walls in Types I and II buildings allowed to terminate at noncombustible sheathing w/ Class B roofing.</td>
<td></td>
</tr>
<tr>
<td>Exterior Walls (Load Bearing - Ratings)</td>
<td>NBC</td>
<td>SBC</td>
<td>UBC</td>
<td>IBC</td>
<td>NFPA 5000</td>
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<tr>
<td>Tables 602 &amp; 705.2 (p.64 &amp; 70) Rating depends upon type of construction, but not less than required for exterior walls based on setbacks and building use.</td>
<td>Table 600 (p.84) Fire rating depends on type of construction and setbacks.</td>
<td>Tables 5-A &amp; 6-A (p.1-55-58 &amp; 1-66) Rating depends upon type of construction, but not less than required for exterior walls based on fire separation distance and building use. Ratings generally greater than NBC &amp; SBC.</td>
<td>Table 601 &amp; 602 (p.89) Rating depends upon type of construction, but not less than required for exterior walls based on fire separation distance and building use. (Note: IBC more stringent for unprotected buildings close to property lines.)</td>
<td>Tables 7.2.2 &amp; 7.3.2.1 (p.84 &amp; 88) Rating depends upon type of construction, but not less than required for exterior walls based on horizontal separation distance and building use.</td>
<td>UBC (M)</td>
<td></td>
</tr>
<tr>
<td>Exterior Walls (Nonload Bearing – Ratings)</td>
<td>705.2 &amp; 705.2 (p.64 &amp; p.70) Ratings vary based on setback distances and building use, with zero ratings allowed for setbacks &gt;30 feet. For setbacks &gt;5 feet, rating required for inside exposure only.</td>
<td>Table 600 (p.84) Ratings vary based on setback distances with zero ratings allowed for setbacks &gt;30 feet. For setbacks &gt;5 feet, rating required for inside exposure only.</td>
<td>Table 5-A (p.1-55-58) Ratings vary based on setback distances, type of construction and building use, with zero rating generally allowed for setbacks &gt;30 feet. All ratings required for both inside and outside exposure.</td>
<td>Table 602 (p.89) Ratings vary based on setback distances, type of construction, and building use, with zero rating allowed for setbacks &gt;30 feet. For setbacks &gt;5 feet, rating required for inside exposure only.</td>
<td>UBC (L)</td>
<td></td>
</tr>
<tr>
<td>Exterior Walls (Parapets)</td>
<td>705.6 (p.72) Extend 30-in. above roof except where: 1. Roofs slope &gt;20%. 2. Roofs terminate at roofs with fire retardant treated wood &amp; gypsum sheathing w/ Class C roofing.</td>
<td>704.5.2 (p.93) Extend 18-in. above roof on Type III and IV construction, except where: 1. Wall is ≥15 feet from property line. 2. Roof slope is &gt;4:12.</td>
<td>709.4 (p.71) Extend 30-in. above roof except where: 1. Exterior walls don’t require fire ratings or opening protection. 2. Roofs terminate at 2-hr. noncombustible roofs. 3. Roofs terminate at 1-hr. combustible roofs sheathing with Class B roofing.</td>
<td>704.11 (p.96) Extend 30-in. above roof except where: 1. Exterior walls don’t require ratings. 2. Roofs terminate at 2-hr. noncombustible roofs. 3. Roofs terminate at 1-hr. combustible roofs sheathing with Class B roofing.</td>
<td>35.1.3 (p.295) Extend 30-in. above roof except where: 1. Exterior walls don’t require ratings. 2. Roofs slope &gt;4:12 and have Class A roof covering. 3. Building is sprinklered.</td>
<td>UBC (L)</td>
</tr>
</tbody>
</table>
### Exterior Walls (Limitations on Area of Openings)

<table>
<thead>
<tr>
<th>NBC</th>
<th>SBC</th>
<th>UBC</th>
<th>IBC</th>
<th>NFPA 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>705.3 (p.70) Different % limits for unprotected and protected openings based on setback distances, with unlimited openings allowed after 30 feet and 20 feet respectively, in other than H-1, H-2 and H-3 occupancies. Allows opening % for unprotected to equal protected for sprinklers.</td>
<td>Table 600 &amp; 705.1.1.2 (p.93 &amp;84) Same % limits for both unprotected and protected openings based on setback distances, with unlimited openings allowed after 30 feet. Protected openings required for all openings with a separation distance ≤ 15 feet unless wall is not required to be rated.</td>
<td>503.3 &amp; Table 5-A (p.1-55) Limits all protected openings to 50%, with no area limitation for unprotected openings. Prescribes setback distances for both unprotected and protected openings. Unlimited openings typically allowed after 20 for higher types of construction and 10 feet for lesser types of construction.</td>
<td>704.8 (p.95-96) Different % limits for unprotected and protected openings based on setback distances, with unlimited openings allowed over 30 feet and 20 feet, respectively. In other than H-1, H-2, H-3 occupancies, allows opening % for unprotected to equal protected for sprinklers.</td>
<td>7.3.5 &amp; Tables 7.3.2.1, 7.3.5 a &amp; b (p.88-90) % of unprotected openings permitted based on setback distance, area of exposing wall, and building use. % of unprotected openings allowed to be doubled if protected, or building is sprinklered. Unlimited openings allowed after 10 feet.</td>
</tr>
</tbody>
</table>

### Combustibility of Cladding on Exterior Walls

<p>| 1407 &amp; 2603.6 (p.63,156 &amp; 298) Combustible exterior wall finish, other than FRTW, limited to 10% of wall area where less than or equal to 5 feet setback distance is provided. On exterior walls of Types I, II, III and IV construction, combustible trim not permitted more than 40 feet above grade plane. Neither of the above applies to foam plastic complying with Section 2603.6. | 1404 &amp; 2603 (p.190 &amp; 383) On exterior walls of Types I and II construction, combustible trim not permitted more than 3 stories or 40 feet above grade plane, with no required setback distance. Neither of the above applies to foam plastic complying with Section 2603.6. | 602.1 &amp; 601.5.4 &amp; 2602.5.2 (p.1-62 &amp; 1-273) Combustible exterior wall finishes below &amp; around show-windows and wood trim over noncombustible surfaces permitted ≤15 feet above grade where streets and yard frontage ≥40 feet. This limitation does not apply to foam plastic complying with Section 2603.6. | 1406.2 &amp; 2603.5 (p.270 &amp; 629) Combustible exterior wall finish, other than FRTW, limited to 10% of wall area where less than or equal to 5 feet setback distance is provided. On exterior walls of Types I, II, III and IV construction, combustible trim not permitted more than 3 stories or 40 feet above grade plane. Neither of the above applies to foam plastic complying with Section 2603.6. | 37.4, 37.5, 48.4.1, 48.6 &amp; 48.7.2 (p.297-8 &amp; 350-1) No limitation on combustibility of cladding on exterior walls of buildings of any type of construction regardless of height, occupancy or setback distance. ACM, plastic veneers and EIFS must meet specific requirements. ACM and plastic veneers are not limited. |</p>
<table>
<thead>
<tr>
<th><strong>Roof Coverings</strong></th>
<th><strong>NBC</strong></th>
<th><strong>SBC</strong></th>
<th><strong>UBC</strong></th>
<th><strong>IBC</strong></th>
<th><strong>NFPA 5000</strong></th>
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<tbody>
<tr>
<td>1506.1 (p.159)</td>
<td>1503.2.5 &amp; 1505.1 (p.192 &amp; 194)</td>
<td>Table 15-A (p.1-149)</td>
<td>Table 1505.1 (p.277)</td>
<td>Table 1505.1 (p.300)</td>
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<tr>
<td>2. Minimum Class B for Type IA Construction.</td>
<td>2. Wood shakes permitted on ≤3-story buildings of ≤9000 sq.ft. with minimum 6 feet setbacks.</td>
<td>2. Wood shakes permitted on ≤3-story buildings of ≤9000 sq.ft. with minimum 10 feet setbacks.</td>
<td>2. Class C permitted on Types IIB, IIIB and VB construction.</td>
<td>2. Class C permitted on Types IIB, IIIB &amp; VB construction.</td>
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<td>4. Nonclassified permitted on Type VB construction with minimum 30 feet setback.</td>
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<tr>
<th><strong>Aggregate Floor Area</strong></th>
<th><strong>NBC</strong></th>
<th><strong>SBC</strong></th>
<th><strong>UBC</strong></th>
<th><strong>IBC</strong></th>
<th><strong>NFPA 5000</strong></th>
</tr>
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<tbody>
<tr>
<td>(For Multi-story Buildings)</td>
<td>Table 506.4 (p.56)</td>
<td>Total floor area for 2-story building limited to 2 times that permitted for one-story building, with an approximate 10% accumulative decrease per floor for stories 3-10.</td>
<td>Table 500 (p.78-9)</td>
<td>Total floor area determined by multiplying table value by number of permitted stories, with no reductions for multiple stories.</td>
<td>Table 500 (p.78-9)</td>
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<thead>
<tr>
<th><strong>Sprinkler Trade-Offs</strong></th>
<th><strong>NBC</strong></th>
<th><strong>SBC</strong></th>
<th><strong>UBC</strong></th>
<th><strong>IBC</strong></th>
<th><strong>NFPA 5000</strong></th>
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<tbody>
<tr>
<td><strong>Area Increase</strong></td>
<td>Table 500 (p.78-79)</td>
<td>100% for ≥3 story. 200% for ≤2-story. No increase permitted for: 1. H-1, H-2, and H-3 occupancies. 2. NFPA 13R.</td>
<td>505.3 (p.1-53)</td>
<td>100% for ≥2 story. 200% for 1-story. No increase permitted for: 1. H-1 and H-2 occupancies. 2. For NFPA 13R.</td>
<td>505.3 (p.83)</td>
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<tr>
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<td>100% for ≥2story. 200% for 1-story. No increase permitted for:</td>
<td>200% for ≥2 story. 300% for 1-story. No increase permitted for: 1. H-1, H-2, and H-3 occupancies. 2. For NFPA 13R. No increase permitted when 1-hr. reduction trade-off or story increase is taken.</td>
<td></td>
<td>200% for ≥2 story. 300% for 1-story. No increase permitted for: 1. H-1, H-2, and H-3 occupancies. 2. For NFPA 13R. No increase permitted when 1-hr. reduction trade-off is taken.</td>
<td>7.6.2.2 (p.95)</td>
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<td>No increase permitted for:</td>
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<tr>
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<td>1. H-1, H-2, and H-3 occupancies.</td>
<td>2. For NFPA 13R.</td>
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<td>No increase permitted when 1-hr. reduction trade-off or story increase is taken.</td>
<td>No increase permitted when 1-hr. reduction trade-off is taken.</td>
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## Sprinkler Trade-Offs (Continued)

<table>
<thead>
<tr>
<th>Height Increase</th>
<th>NBC</th>
<th>SBC</th>
<th>UBC</th>
<th>IBC</th>
<th>NFPA 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Height Increase</strong></td>
<td>504.2 (p. 58) 1-story and 20 feet; however, for NFPA 13R, building height not to exceed 4 stories or 60 feet. This increase is permitted in addition to sprinkler area increase. No height increase is permitted: 1. For H-1, H-2 and H-3 occupancies. 2. For I-2 occupancies in Types IIB, IIIA, IV and VA construction.</td>
<td>Table 500 (p. 78-79) Generally 1-story, but no increase in building height in feet. No increase permitted for NFPA 13R. Generally the story increase not permitted when area increase is taken.</td>
<td>506 (p.1-53) 1-story but no increase in building height in feet. No increase permitted for: 1. NFPA 13R. 2. H-1, H-2 and H-3 occupancies. 3. I 1.1 and I 1.2 occupancies in Types II 1-hr., III 1-hr., IV or V construction. No increase permitted when 1-hr. reduction trade-off or sprinkler area increase is taken.</td>
<td>504.2 (p. 82) 1-story and 20 feet; however, for NFPA 13R, building height not to exceed 60 feet. This increase is permitted in addition to sprinkler area increase. No height increase is permitted for: 1. H-1, H-2, H-3 and H-5 occupancies. 2. I-2 occupancies in Types IIB, III, IV and V construction. 3. Buildings when 1-hr. reduction trade-off is taken.</td>
<td>Table 7.4.1 &amp; 7.5.1 (p. 88 &amp; 94) 20 feet height increase. Story height increase varies from zero to unlimited stories depending upon occupancy and type of construction, however, for NFPA 13R, building height not to exceed 4 stories or 60 feet.</td>
</tr>
<tr>
<td><strong>Unlimited Area Buildings</strong></td>
<td>507.1 &amp; 507.2 (p.56) For other than Type V, 1-story buildings with 50 feet setbacks permitted for A-3, B, F, I-2, M and S occupancies. Additional requirements where setbacks of 30-50 feet are provided.</td>
<td>503.4. (p.76) One-story buildings with 60 feet setbacks permitted for some assembly and B, F, M and S occupancies. 1-story building of Type II with 60 feet of setback and 30,000 sq.ft. compartments for E occupancies.</td>
<td>505.2 (p.1-53) One and two-story buildings with 60 feet setbacks permitted for B, F, M, S and H-5 occupancies.</td>
<td>507.3, 507.4, 507.7 &amp; 507.8 (p.84) One story of some assembly, and 1-and 2-story buildings with 60 feet setbacks permitted for B, F, M, and S occupancies. One story Type II, IIIA and IV for E with 60 feet setbacks and two exits from classroom with one directly to the outside. Additional requirements where setbacks of 40-60 feet are provided.</td>
<td>7.6.3.2 - 7.6.3.5 &amp; 7.6.3.7 (p.95) One story of some assembly, and one and 2-story buildings with 60 feet setbacks permitted for business, industrial, mercantile &amp; storage occupancies. Additional requirements where setbacks of 40-60 feet are provided.</td>
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<td><strong>(Except Covered Mall Buildings)</strong></td>
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## Sprinkler Trade-Offs (Continued)

<table>
<thead>
<tr>
<th><strong>Unlimited Area Covered Mall Buildings</strong></th>
<th>NBC</th>
<th>SBC</th>
<th>UBC</th>
<th>IBC</th>
<th>NFPA 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covered mall buildings, including anchors stores, permitted to be unlimited area up to and including 3 stories where of Types I, II and IV construction. No minimum setback required.</td>
<td>402.7 (p. 32)</td>
<td>413.6 (p. 70)</td>
<td>404.2 (p. 1-44)</td>
<td>402.6 (p. 40)</td>
<td>27.4.4.3.1 (p. 231)</td>
</tr>
<tr>
<td></td>
<td>Covered mall buildings, including anchors stores, permitted to be unlimited area up to and including 3 stories where of Types I, II and IV construction. Minimum 60 feet setback required.</td>
<td>Covered mall buildings, including anchors stores and open parking garages, permitted to be unlimited area up to and including 3 stories where of Types I, II, III and IV construction. Minimum 60 feet setback required.</td>
<td>Covered mall buildings, including anchors stores, permitted to be unlimited area up to and including 3 stories where of Types I, II and IV construction. Minimum 60 feet setback required.</td>
<td>Covered mall buildings, including anchors stores, permitted to be unlimited area up to and including 3 stories where of Types I, II and IV construction. Minimum 60 feet setback required.</td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>Structural Fire Resistance Reductions for High Rise Buildings</strong></th>
<th>NBC</th>
<th>SBC</th>
<th>UBC</th>
<th>IBC</th>
<th>NFPA 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tables 403.3.3.1, 503 &amp; 602 (p.33, 58, 64)</td>
<td>506.3.2, Table 500 and Table 600 (p.76, 78, 84)</td>
<td>506.3.2, Table 500 and Table 600 (p.76, 78, 84)</td>
<td>403.3.1, Tables 503 &amp; 601 (p.42, 80, 89)</td>
<td>33.1.3.2, 33.1.3.3, Tables 7.2.2 &amp; 7.4.1 (p.257, 84, 91)</td>
<td></td>
</tr>
<tr>
<td>Beams Framing into Columns and Supporting One Floor (Structural Frame)</td>
<td>2-hr. required. No reduction permitted. 1-hr. required for &gt; 8 stories for B, and ≥ 10 for R occupancies.</td>
<td>2-hr. required. No reduction permitted.</td>
<td>3-hr. required. No reduction permitted. 1-hr. required for up to and including 12 stories.</td>
<td>3-hr. required. 1-hr. reduction permitted. 1-hr. required for up to and including 12 stories.</td>
<td>UBC</td>
</tr>
<tr>
<td>Columns Supporting More Than One Floor (Structural Frame)</td>
<td>2-hr. required. 1-hr. reduction permitted. 1-hr. required for &gt; 8 stories for B, and ≥ 10 for R occupancies.</td>
<td>3-hr. required. No reduction permitted.</td>
<td>3-hr. required. No reduction permitted.</td>
<td>3 hours required. 1-hr. reduction permitted. 1-hr. required for up to and including 12 stories and 180 feet.</td>
<td>SBC &amp; UBC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Structural Fire Resistance Reductions for High Rise Buildings</strong></th>
<th>NBC</th>
<th>SBC</th>
<th>UBC</th>
<th>IBC</th>
<th>NFPA 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2- hr. required. 1-hr. reduction permitted.</td>
<td>3-hr. required. No reduction permitted.</td>
<td>3-hr. required. 1-hr. reduction permitted. 1-hr. required for up to and including 12 stories.</td>
<td>≤420 ft. in height – 3-hr. required. &gt;420 ft. in height – 4-hr. required. 1-hr. reduction permitted for both. 1-hr. required for up to and including 12 stories and 120 feet.</td>
<td>UBC</td>
</tr>
</tbody>
</table>

**Beams Framing into Columns and Supporting One Floor (Structural Frame)**

- 2-hr. required.
- 1-hr. reduction permitted.
- 1-hr. required for > 8 stories for B, and ≥ 10 for R occupancies.

**Columns Supporting More Than One Floor (Structural Frame)**

- 2-hr. required.
- 1-hr. reduction permitted.
- 1-hr. required for > 8 stories for B, and ≥ 10 for R occupancies.

**Tables 403.3.3.1, 503 & 602 (p.33, 58, 64)**

- 506.3.2, Table 500 and Table 600 (p.76, 78, 84)
- 403.3.1, Tables 503 & 601 (p.42, 80, 89)

**33.1.3.2, 33.1.3.3, Tables 7.2.2 & 7.4.1 (p.257, 84, 91)**

**Beams Framing into Columns and Supporting One Floor (Structural Frame)**

- 2-hr. required. No reduction permitted.
- 1-hr. required for > 8 stories for B, and ≥ 10 for R occupancies.
*Note 1. One- & two family dwelling and townhouse provisions are not a part of this analysis.
*Note 2. All references to types of construction are presented as IBC types of construction.
**Note 1. Structural Fire Resistance Reductions for High Rise Buildings applies to B and R Occupancies of a height requiring the code’s highest Type of construction.
Differences Between the Uniform and International Mechanical Codes

The International Mechanical Code provides a positive impact on the health and safety of a building’s occupants, energy and environment, structural integrity and construction efficiency. Adopting the Uniform Mechanical Code could require jurisdictions to proceed with a lengthy and costly amendment process in order to achieve the standard set by the IMC.

- Health: The IMC ventilation provisions provide for a healthy space with requirements for mechanical ventilation. Heating efficiencies are addressed to provide for adequate comfort in cold weather.

- Occupant Safety: The IMC provides for occupant safety in the event of a fire. The code stipulates requirements for smoke control or controls for air movement and provides for smoke separations in interior assemblies.

- Energy and the Environment: With the use of new environmentally sensitive refrigerants, the IMC addresses the treatment of cooling units to minimize environmental risk and maximize efficiency.

- Structural Integrity: The location of mechanical systems can have an adverse affect of structural integrity. The IMC provides limitations on boring, cutting and notching structural members to maintain structural integrity.

- New Technologies: New technologies are addressed by the IMC. The IMC facilitates the acceptance of many new technologies and methods of construction that can save time and effort during the construction and approval process.
International Building Code

The *International Building Code*® (IBC®) continues to establish minimum regulations for building systems using prescriptive and performance-related provisions. It is founded on principles that make possible the use of new materials and new building designs.

**Scope**
For every building or structure of any appurtenances connected or attached to such buildings or structures, the provisions of this code shall apply to the following:

- Alteration
- Construction
- Demolition
- Enlargement
- Equipment
- Location
- Maintenance
- Movement
- Removal
- Repair
- Replacement
- Use and occupancy

**Intent**
This code provides safety to the firefighters and emergency responders during emergency operations and establishes the minimum requirements to safeguard the public health, safety and general welfare through the following:

- Adequate light and ventilation
- Energy conservation
- Means of egress facilities
- Safety to life and property from fire and other hazards attributed to the built environment
- Sanitation
- Stability
- Structural strength

**Content**
- General Issues
- Fire Safety
- Means of Egress
- Structural
<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>101.2</td>
<td>Scope</td>
<td>The exception under this section for existing buildings handled under the IEBC was deleted.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>303.1</td>
<td>Assembly Group A</td>
<td>Revised to correlate with Section 302.2. (Now Section 508.3.1)</td>
</tr>
<tr>
<td>304.1</td>
<td>Business Group B</td>
<td>Added “Training and skill development not within a school or academic program” such as trade schools.</td>
</tr>
<tr>
<td>307.1</td>
<td>High hazard Group H</td>
<td>Added language to provide a link between Sections 414 and 415. Also moved exceptions for Group H classification from Section 307.9 to 307.1.</td>
</tr>
<tr>
<td>307.1.1</td>
<td>Hazardous materials</td>
<td>Stand alone section created from language in 307.9 (2003) to clarify that any amount of hazardous material would be regulated by Section 414 in addition to any other applicable requirements such as Section 415.</td>
</tr>
<tr>
<td>310.1</td>
<td>Residential Group R</td>
<td>Now allows congregate living facilities with 16 or fewer occupants to be classified as a Group R-3; otherwise, the occupancy classification would be Group R-2. This criteria is based upon the US census which determined that 98 percent of all homes have 16 or fewer persons. The criteria of 16 people is specific to congregate living facilities and would not apply to other uses listed in Group R-2.</td>
</tr>
<tr>
<td>310.2</td>
<td>Definitions</td>
<td>Added a new definition for congregate living facilities to coordinate with the addition of congregate living facilities to Group R. The term transient is defined to help differentiate between Group R-1 and R-2 occupancies.</td>
</tr>
</tbody>
</table>

**Test Your Knowledge**

1. What occupancy classification is a congregate living facility with 10 occupants?

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>402.11</td>
<td>Children’s playground structures</td>
<td>This section regulates playground structures in malls when they are greater than 10 feet in height and 150 feet in area. The requirements focus on size limitations, combustibility restrictions, necessary suppression requirements and separation distances from other structures within the mall.</td>
</tr>
<tr>
<td>403.3.1</td>
<td>Type of construction</td>
<td>In high-rise buildings with supervised sprinkler control valves with initiating devices on each floor, the reduction in types of construction from IA to IB is limited to buildings 420 feet or less in height. An exception to this section was also added which would prohibit this reduction being taken from the columns supporting the floors.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
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<tr>
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</tr>
<tr>
<td>2006 403.3.2</td>
<td>Shaft enclosures</td>
<td>Only allows the fire-resistance-rating reduction for sprinklered shafts to 1 hour in high rise buildings 420 feet or less in height.</td>
</tr>
<tr>
<td>2003 403.3.2</td>
<td>Shaft enclosures</td>
<td></td>
</tr>
<tr>
<td>2006 404.1</td>
<td>General</td>
<td>Clarified that this section only applies to spaces not located within a Group H occupancy and meeting the definition of an atrium. Exception 5 of Section 707.2 was also revised to reflect this clarification.</td>
</tr>
<tr>
<td>2003 404.1</td>
<td>General</td>
<td></td>
</tr>
<tr>
<td>2006 404.4</td>
<td>Smoke control</td>
<td>Deleted exceptions for smoke control to coordinate with a change to Section 404.1, general.</td>
</tr>
<tr>
<td>2003 404.4</td>
<td>Smoke control</td>
<td></td>
</tr>
<tr>
<td>2006 404.5</td>
<td>Enclosure of atriums</td>
<td>Deleted language that reflected previous smoke control design requirements from the legacy codes. Now, the code does not need to prescribe that the volume of the areas open to the atrium be part of the computed volume as that will be addressed by the overall smoke control design strategy.</td>
</tr>
<tr>
<td>2003 404.5</td>
<td>Enclosure of atriums</td>
<td></td>
</tr>
<tr>
<td>2006 406.1.4</td>
<td>Separation</td>
<td>Requires doors between private garages and dwelling units to be self-closing.</td>
</tr>
<tr>
<td>2003 406.1.4</td>
<td>Separation</td>
<td></td>
</tr>
<tr>
<td>2006 406.3.6</td>
<td>Area and height increases</td>
<td>Provides another option for ventilation of open parking garages to allow for unlimited area.</td>
</tr>
<tr>
<td>2003 406.3.6</td>
<td>Area and height increases</td>
<td></td>
</tr>
<tr>
<td>2006 410.3.5</td>
<td>Proscenium curtain</td>
<td>Bases the need for such a curtain on the requirement for a proscenium wall with a fire-resistance rating. This is consistent with opening protection requirements throughout the code. Also clarified the difference between fire curtain and water curtain.</td>
</tr>
<tr>
<td>2003 410.3.5</td>
<td>Proscenium curtain</td>
<td></td>
</tr>
<tr>
<td>2006 412.2.3</td>
<td>Floor surface</td>
<td>Added an exception that allows smaller multitenant aircraft hangars (less than 2,000 square feet) to omit separators as long as the floor is graded towards the door. Service, repair or washing is not allowed.</td>
</tr>
<tr>
<td>2003 412.2.3</td>
<td>Floor surface</td>
<td></td>
</tr>
<tr>
<td>2006 412.2.4</td>
<td>Heating equipment</td>
<td>Allows vented infrared radiant heating equipment in addition to unit heaters within aircraft hangars without separation.</td>
</tr>
<tr>
<td>2003 412.2.4</td>
<td>Heating equipment</td>
<td></td>
</tr>
<tr>
<td>Table 414.2.2</td>
<td>Design and number of control areas</td>
<td>Deleted the footnote limiting Group M and S occupancies to two control areas. Now allows the same number of control areas as any other occupancy.</td>
</tr>
<tr>
<td>Table 414.2.2</td>
<td>Design and number of control areas</td>
<td></td>
</tr>
<tr>
<td>419</td>
<td>NEW</td>
<td>Group I-1, R-1, R-2, R-3</td>
</tr>
</tbody>
</table>

### Unlimited Area Open Parking Garage Type II Construction
**Section 406.3.6**

1. **Design and Construction**: This section applies to open parking garages with unlimited area, up to 200 feet to exterior openings or courts. The design and construction requirements are as follows:

   - **Height Requirements**:
     - Open parking garages are limited to 30 feet in height.
   - **Spacing Requirements**:
     - Garages are spaced at 30 feet, excluding courts.

2. **Fire Separations**: Separations between garage areas are required as follows:

   - **Fire Separations**:
     - A minimum of three hours fire separation is required for the walls between garage areas.

3. **Exterior Atriums**: Atriums within the garage are limited to 1,500 square feet and are required to have a minimum of three hours fire separation from other garage areas.

4. **Smoke Control**: Smoke control systems are required in accordance with Chapter 7 of the code.

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**Plan View**

- **200 Feet to Openings**: (Exterior Openings or Court)
- **30 Feet**: Spacing between garage areas
- **Courtyard**: Excluded area
- **Open Parking Garage**: Main area

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**New Section 419**

- **Group I-1, R-1, R-2, R-3**: A link to Chapter 7 provisions for separations between dwelling units and sleeping units as applicable.
Test Your Knowledge

2. How many control areas is a Group M occupancy allowed on the first floor level above grade?

3. The smoke control provisions for the exhaust method have been removed from the code and the code text has been revised to reference a standard for smoke control. That standard is:
   a. UL 10C
   b. ASTM E84
   c. NFPA 72
   d. NFPA 92b

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>502.1</td>
<td>Definition — Equipment Platform</td>
<td>Revised title. Removed the term “industrial” from definition “Industrial equipment platform” and throughout Section 505. The term “industrial” was thought to be too specific.</td>
</tr>
<tr>
<td>503.1.1</td>
<td>503.1.2 Special industrial occupancies</td>
<td>Replaced term “low-hazard processes” with “special industrial processes.” Better describes the spectrum of activities described within the section. Section addresses both low and moderate level hazards.</td>
</tr>
<tr>
<td>505.3</td>
<td>505.3 Egress</td>
<td>Moved exception addressing accessibility within body of the text.</td>
</tr>
<tr>
<td>505.4</td>
<td>505.4 Openness</td>
<td>Deleted Exception 5 in the 2003 edition which is more restrictive than the new exception. New exception allows enclosed mezzanines if sprinklered and provides two means of egress.</td>
</tr>
<tr>
<td>505.5</td>
<td>505.5 Equipment platforms</td>
<td>Revised title. See definition of Equipment Platform.</td>
</tr>
<tr>
<td>506.1</td>
<td>506.1 General</td>
<td>Revised equations to contain factors instead of percentages (i.e., 2 versus 200).</td>
</tr>
<tr>
<td>506.1.1</td>
<td>506.1.1 Basements</td>
<td>Clarified that basements can only be discounted from the total allowable area if considered a story below grade plane.</td>
</tr>
<tr>
<td>506.2</td>
<td>506.2 Frontage increase</td>
<td>Revised equations to contain factors instead of percentages (i.e., 2 versus 200).</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>2006 506.2.1</td>
<td>Width limits 506.2.1</td>
<td>Clarified which number is to be used when determining the weighted average W. Revised exception to clarify when W divided by 30 can equal 2.</td>
</tr>
<tr>
<td>506.3</td>
<td>Automatic sprinkler system increase</td>
<td>Changed percentages into factors (i.e., 2 versus 200). Allows area increases for buildings housing Group H-2 and H-3 occupancies but that increase can not apply to the Group H-2 and H-3 occupancies within those buildings.</td>
</tr>
<tr>
<td>506.4.1</td>
<td>Mixed occupancies</td>
<td>Allows maximum building area in a separated use building to be based upon the method provided in Section 508.3.2. The ratio can not exceed 2 in a 2 story building or 3 in buildings 3 stories or higher.</td>
</tr>
<tr>
<td>507.3</td>
<td>Sprinklered, one story</td>
<td>Allows Group A-1 and A-2 occupancies within unlimited single story sprinklered buildings with certain restrictions related to separation, area restrictions and exiting.</td>
</tr>
<tr>
<td>507.5</td>
<td>Reduced open space</td>
<td>Added Sections 507.6 Group A-3 occupancies (Section 507.5 of 2003 IBC) and 507.10 Motion picture theaters (Section 507.9 of 2003 IBC) to the laundry list of sections that are allowed to open space to 40 feet under certain conditions for unlimited buildings.</td>
</tr>
<tr>
<td>507.6</td>
<td>Group A-3 buildings</td>
<td>Type I construction deleted as it would already allow unlimited area buildings.</td>
</tr>
<tr>
<td>507.7</td>
<td>Group H occupancies</td>
<td>Revised title. Clarified that the Group H occupancies can be contained within unlimited area buildings if the building is classified as either Group F or S occupancies that comply with Sections 507.2 and 507.3. Also, more specific guidance on whether a Group H occupancy is allowed on the second story is provided.</td>
</tr>
<tr>
<td>507.11</td>
<td>Covered mall buildings and anchor stores</td>
<td>Added a new item to address that Section 402.6 allows covered mall buildings to be unlimited in area.</td>
</tr>
<tr>
<td>508</td>
<td>Mixed Use and Occupancy</td>
<td>Moved requirements from Chapter 3 into new section in Chapter 5 regarding incidental use areas, accessory occupancies and nonseparated and separated occupancies. This included Sections 302.1.1 through 302.3.2. Deleted Section 302.4. Changed Table 302.1.1 to Table 508.2. Changed Table 302.3.2 to Table 508.3.3 Separated the provisions into more succinct sections based upon occupancy classification, height and area requirements and separation requirements.</td>
</tr>
<tr>
<td>508.1</td>
<td>General</td>
<td>Introduced the new Section 508 requirements as discussed above.</td>
</tr>
<tr>
<td>508.2</td>
<td>Incidental uses</td>
<td>No significant changes from 2003.</td>
</tr>
<tr>
<td>Table 508.2</td>
<td>Incidental Use Areas</td>
<td>Clarified that incidental use areas containing a hydrogen cutoff room could not be classified as Group H; otherwise, proper separation and associated provisions would apply.</td>
</tr>
<tr>
<td>508.2.1</td>
<td>Occupancy classification</td>
<td>No significant changes from 2003.</td>
</tr>
<tr>
<td>508.2.2</td>
<td>Separation</td>
<td>No significant changes from 2003.</td>
</tr>
</tbody>
</table>
### General Issues

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2006</strong></td>
<td><strong>2003</strong></td>
<td></td>
</tr>
<tr>
<td>508.2.2.1</td>
<td>302.1.1.1</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relocated these provisions from the section which was titled “Separation.” Clarified that the separation is either a fire barrier or a horizontal assembly. This change relates to a more substantial change to the definition of fire barrier and the introduction of a definition for horizontal assembly.</td>
</tr>
<tr>
<td>508.2.3</td>
<td>NEW</td>
<td>Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarified the requirement for an automatic sprinkler system or automatic fire extinguishing system is required only in the incidental use area.</td>
</tr>
<tr>
<td>508.3</td>
<td>302.3</td>
<td>Mixed occupancies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scope now includes accessory occupancies which used to be a stand alone section from nonseparated and separated occupancy requirements.</td>
</tr>
<tr>
<td>508.3.1</td>
<td>302.2</td>
<td>Accessory occupancies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarified that allowable area increases are not applicable to accessory uses. Deleted Section 302.2.1 and added exceptions with the same language to this section. Revised to clarify that the accessibility requirements of Chapter 11 still apply to assembly areas found in Group E occupancies.</td>
</tr>
<tr>
<td>508.3.1.1</td>
<td>NEW</td>
<td>Occupancy classification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarified that such areas need to be classified in accordance with Section 302.1 and that besides for any applicable high-rise and fire protection requirements in Section 403 and Chapter 9, respectively, the requirements based upon the occupancy classification of that space can be applied. This is similar to the requirements for nonseparated occupancies.</td>
</tr>
<tr>
<td>508.3.1.2</td>
<td>302.2</td>
<td>Allowable area and height</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarified that allowable height increases are not applicable to accessory uses.</td>
</tr>
<tr>
<td>508.3.1.3</td>
<td>302.2</td>
<td>Separation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In contrast to 2003 provisions, this section does not reference the incidental uses as it is not a mixed occupancy. Additionally, the requirement to separate Group H-2, H-3, H-4 and H-5 as a separated mixed use occupancies is found in an exception instead of in the body of the code section.</td>
</tr>
<tr>
<td>508.3.2</td>
<td>302.3.1</td>
<td>Nonseparated occupancies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Previously titled “Nonseparated uses.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.2 Nonseparated occupancies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.2.1 Occupancy classifications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.2.2 Allowable area and height</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.2.3 Separation</td>
</tr>
<tr>
<td>508.3.2.1</td>
<td>302.3.1</td>
<td>Occupancy classification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No significant changes from 2003.</td>
</tr>
<tr>
<td>508.3.2.2</td>
<td>302.3.1</td>
<td>Allowable area and height</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No significant changes from 2003.</td>
</tr>
<tr>
<td>508.3.2.3</td>
<td>302.3.1</td>
<td>Separation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The exception requiring separation for Group H-2, H-3, H-4 and H-5 occupancies found in this section comes from exception 2 in Section 302.3 of the 2003 IBC.</td>
</tr>
<tr>
<td>508.3.3</td>
<td>302.3.2</td>
<td>Separated occupancies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Divided Section 302.3.2 previously titled “Separated uses” into the following sections:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.3 Separated occupancies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.3.1 Occupancy classification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.3.2 Allowable area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.3.3 Allowable height</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.3.4 Separation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 508.3.3.4.1 Construction</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Table 508.3.3</strong></td>
<td>Required Separation of Occupancies</td>
<td>Revised table completely. The focus is based upon separating dissimilar risks from one another versus providing separation requirements between like occupancies. Fire area separation requirements are addressed by Table 706.3.7. This revision was accompanied by the deletion of the exception to Section 302.3.2 (508.3.3) which allowed a 1 hour reduction in the fire resistance ratings when sprinklered. With the revision to the table this exception is no longer necessary. (See also update for Section 508.3.3.4.1).</td>
</tr>
<tr>
<td><strong>508.3.3.1</strong></td>
<td>Occupancy classification</td>
<td>No significant changes from 2003.</td>
</tr>
<tr>
<td><strong>508.3.3.2</strong></td>
<td>Allowable area</td>
<td>No significant changes from 2003.</td>
</tr>
<tr>
<td><strong>508.3.3.3</strong></td>
<td>Allowable height</td>
<td>Clarified that all intervening stories need to be included when measuring the height of any portion of the building from grade plane.</td>
</tr>
<tr>
<td><strong>508.3.3.4</strong></td>
<td>Separation</td>
<td>Deleted the fire-resistance-rating reduction for sprinklers was deleted. This relates to the entire new format for Table 508.3 that does not require fire barriers or horizontal assemblies for like hazards. The fire area requirements address those requirements independently within Section 706. (See update for Table 508.3.3).</td>
</tr>
<tr>
<td><strong>509.2</strong></td>
<td>Group S-2 enclosed or open parking garage with Group A, B, M, R or S above</td>
<td>Revised title. Permitted Group S occupancies the allowances in Section 508.2 which also applies to both enclosed and open parking garages. Item 3 clarified that multiple Group A uses in the building above the S-2 enclosed or open parking garage are permitted as long as each of the uses has an occupant load of less than 300. Item 5 clarified that the construction type with the smaller allowable height was to be used as the limiting height. The height is to be measured from grade plane.</td>
</tr>
<tr>
<td><strong>509.8</strong></td>
<td>Group B or M with Group S-2 open parking garage above</td>
<td>Allows a Group B or M occupancy under an S-2 open parking garage to be considered as a separate and distinct building.</td>
</tr>
</tbody>
</table>

### Height of Occupancies in Separated Uses

Section 508.3.3.3

![Diagram of Height of Occupancies in Separated Uses](attachment:image.png)
4. When can basements be discounted from the total allowable area?

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 602</td>
<td>Fire-Resistance Requirements for Wall Based on Fire Separation Distance</td>
<td>Deleted Footnote b which allowed no fire-resistance rating between Group R-3 and accessory Group U or R-3 occupancies when the distance is 3 feet or greater due to concerns about fires occurring in close proximity housing. New Footnote d for Group A, B, E, F-2, I, R, S-2 and U in the range of 10 feet ≤ X ≤ 30 feet denoting that 1 hour fire resistance is not required for open parking garages complying with Section 406. Correlates with Table 704.8 for opening protection. New Footnote e allows the fire-separation distance to be measured from each individual story. Some buildings have stories set back further than other stories in the same building.</td>
</tr>
<tr>
<td>602.4</td>
<td>Type IV</td>
<td>References a new table to clarify the equivalent minimum dimensions for solid sawn lumber and glued laminated timbers to meet the requirements for Type IV construction. Similar provisions are found within AITC 113.</td>
</tr>
<tr>
<td>Table 602.4</td>
<td>Wood Member Size</td>
<td>Provided equivalent minimum dimensions for solid sawn lumber and glued laminated timbers.</td>
</tr>
<tr>
<td>603.1 (Item 1)</td>
<td>Allowable materials</td>
<td>Deleted Note c Item 3 in 2003 Table 601 and created an exception for Item 1.3 to note that fire-retardant-treated wood was only prohibited in roof construction when the vertical distance from the upper floor to the roof is less than 20 feet in buildings greater than 2 stories of Type I construction.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>702</td>
<td>Definitions:</td>
<td>In the 2006 code, “Fire barriers” will mean walls only, not horizontal assemblies. Therefore, throughout the code, when a fire barrier is called out, the code will not read “fire barrier” or “horizontal assembly” or both.</td>
</tr>
<tr>
<td>704.2.3</td>
<td>Combustible projections</td>
<td>Allows combustible projections to be fire retardant treated wood.</td>
</tr>
<tr>
<td>706.2.1</td>
<td>Fire-resistance rated glazing</td>
<td>Added labeling requirements for fire-resistance rated glazing.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
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</tr>
<tr>
<td>706.7</td>
<td>Openings</td>
<td>Increase size of allowable openings in fire barrier walls from 144 sq. ft. to 156 sq. ft. with no maximum dimension. Allows fire windows to be unlimited in size as a percentage of the wall for atrium enclosure walls.</td>
</tr>
<tr>
<td>707.11</td>
<td>Enclosure at the bottom</td>
<td>Requires the fire rated construction for a room used at the bottom of a shaft in exception no. 2 to be a fire barrier.</td>
</tr>
<tr>
<td>707.14.1</td>
<td>Elevator lobby</td>
<td>New exceptions for elevator lobby: 1. Smoke partitions in lieu of fire partitions where automatic sprinklers are provided, and 2. Where the elevator shaft is pressurized.</td>
</tr>
<tr>
<td>707.14.2</td>
<td>NEW Elevator lobby pressurization alternative</td>
<td>Provided detailed requirements for pressurization of elevator lobbies when that pressurization alternative is chosen.</td>
</tr>
<tr>
<td>712.4.5</td>
<td>Floor fire doors</td>
<td>Referenced standard NFPA 288 for testing floor fire doors.</td>
</tr>
<tr>
<td>712.5</td>
<td>NEW Penetrations in smoke barriers</td>
<td>Added requirements for testing air leakage for penetrations in smoke barriers.</td>
</tr>
<tr>
<td>713.6</td>
<td>NEW Fire-resistant joint systems in smoke barriers</td>
<td>Added requirements for testing air leakage for fire resistant joint systems in smoke barriers.</td>
</tr>
<tr>
<td>715.3</td>
<td>NEW Alternative methods for determining fire protection ratings</td>
<td>Added new provisions for alternative methods for determination of fire protection ratings.</td>
</tr>
<tr>
<td>715.4.7.3</td>
<td>Smoke-activated doors</td>
<td>Added requirements for automatic closing doors at some additional locations, including:  - Doors installed in shaft enclosures in accordance with Section 707.7.  - Doors installed in refuse and laundry chutes and access and termination rooms in accordance with Section 707.13.  - Doors installed in the walls for compartmentation of underground buildings in accordance with Section 405.4.2.  - Doors installed in the elevator lobby walls of underground buildings in accordance with Section 405.4.3.  - Doors installed in smoke partitions in accordance with Section 710.5.3.</td>
</tr>
<tr>
<td>Table 715.4</td>
<td>Fire Door and Fire Shutter Fire Protection Ratings</td>
<td>Requires a 20 minute fire protection rating for fire doors in a ½ hour fire resistance rated partition. Requires 20 minute fire protection rating for fire doors in a smoke barrier.</td>
</tr>
<tr>
<td>715.4.6.3.1</td>
<td>NEW Labeling</td>
<td>Added labeling requirements for fire-resistance rated glazing.</td>
</tr>
<tr>
<td>715.5.8.1</td>
<td>NEW Labeling requirements</td>
<td>Added labeling requirements for fire-resistance rated glazing.</td>
</tr>
<tr>
<td>716.5.3</td>
<td>Shaft enclosures</td>
<td>Added exception to not require smoke dampers at penetrations of shafts with ducts which are part of a mechanical smoke control system.</td>
</tr>
<tr>
<td>Tables 720.1(1), (2) and (3)</td>
<td>Tables 720.1(1), (2) and (3)</td>
<td>Fire Resistance Rating of Assemblies</td>
</tr>
<tr>
<td>Table 720.1(3)</td>
<td>Table 720.1(1), (2) and (3)</td>
<td>Minimum Protection for Floor and Roof Systems</td>
</tr>
</tbody>
</table>
5. Which of the following is a new exception available for elevator lobbies?
   a. Lobbies are not required from a street-floor elevator provided the entrance floor is equipped with an automatic sprinkler system?
   b. Smoke partitions may be used instead of fire partitions when an automatic sprinkler system is installed throughout the building.
   c. Lobbies are not required for elevators that are not required to be installed in a fire resistance rated shaft.
   d. Lobbies are required for elevators when the shaft in which the elevator is enclosed is pressurized to prevent the incursion of smoke.

### Fire Safety

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>903.2.1.2</td>
<td>903.2.1.2</td>
<td>Group A-2</td>
<td>Lowered the threshold for sprinklers for A-2 occupancies from 300 occupants to 100 occupants.</td>
<td></td>
</tr>
<tr>
<td>909.8</td>
<td>909.8</td>
<td>Exhaust method</td>
<td>Removed detail provisions for the exhaust method for smoke control and replace with reference to standard NFPA 92B for requirements.</td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>909.8.3</td>
<td>Balcony spill plume</td>
<td>Removed balcony spill plume equation.</td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>909.8.4</td>
<td>Window spill plume</td>
<td>Removed window spill plume equation.</td>
<td></td>
</tr>
<tr>
<td>909.9</td>
<td>909.9</td>
<td>Design fire</td>
<td>Removed 5,000 Btu/sec design fire and replaced with requirements for a design fire to be determined by a rational analysis.</td>
<td></td>
</tr>
</tbody>
</table>

### Means of Egress

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1002.1</td>
<td>1002.1</td>
<td>Definitions</td>
<td>Revised definition of ‘Accessible Means of Egress’ - An accessible means of egress is similar to a typical means of egress in that it must allow for occupants to reach a public way, although sometimes with assistance. Areas of refuge and horizontal exits are components of an accessible means of egress, not a termination point. Added the definition for ‘aisle’ - Aisles are defined to clarify the differences between aisles and aisle accessways for all occupancies. Added the definition for ‘merchandise pad’ - The merchandise pad was defined as part of the proposal to address means of egress requirements in mercantile occupancies. (See Section 1014.4).</td>
<td></td>
</tr>
<tr>
<td>Code Section</td>
<td>2006</td>
<td>2003</td>
<td>Section Title</td>
<td>Change</td>
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<tr>
<td>--------------</td>
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</tr>
<tr>
<td>1003.2</td>
<td>1003.2</td>
<td></td>
<td>Ceiling height</td>
<td>Increased the minimum ceiling height to 7’-6”. This will be consistent with Section 1208.2.</td>
</tr>
<tr>
<td>1004.1</td>
<td>1004.1</td>
<td></td>
<td>Design occupant load</td>
<td>Clarified that determining occupant load for purposes of means of egress can be the actual load when less than that required by the table.</td>
</tr>
<tr>
<td>Deleted</td>
<td>1004.1.1</td>
<td>Actual number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1004.1.1</td>
<td>1004.1.2</td>
<td>Areas without fixed seating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>1004.1.3</td>
<td>Number by combination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 1004.1.1</td>
<td>Table 1004.1.2</td>
<td>Maximum Floor Area Allowable Per Occupant</td>
<td>Added a maximum floor area per occupant of 35 sq. ft. net for day care facilities.</td>
<td></td>
</tr>
<tr>
<td>1004.2</td>
<td>1004.1</td>
<td></td>
<td>Increased occupant load</td>
<td>Used 5 sq. ft. per person as an increased occupant load is a hazard to occupants. The increase to 7 sq. ft. is appropriate to avoid overcrowding, especially in assembly type occupancies.</td>
</tr>
<tr>
<td>1004.7</td>
<td>1004.7</td>
<td></td>
<td>Fixed seating</td>
<td>Requires an occupant load in fixed seating situations for areas not encompassed by the fixed seating itself, such as standing room, waiting spaces and wheelchair spaces.</td>
</tr>
<tr>
<td>1007</td>
<td>1007</td>
<td></td>
<td>Accessible Means of Egress</td>
<td>Deleted exceptions in Section 1007 for areas of refuge in sprinklered buildings.</td>
</tr>
<tr>
<td>1007.5</td>
<td>1007.5</td>
<td></td>
<td>Platform lifts</td>
<td>Expanded in Section 1109.7 where platform lifts as part of the accessible route into a space in new construction. The result of the revisions to this section is that a platform lift can be used as part of the accessible means of egress for the limited occupant spaces (i.e. Items 1-9), but not when the platform lifts were used “where exterior site constraints make use of a ramp or elevator infeasible” (i.e. Item 10). The concern is that in this situation there may be a substantial number of people with disabilities that may need to exit the facility.</td>
</tr>
<tr>
<td>1008.1.1</td>
<td>1008.1.1</td>
<td>Size of doors</td>
<td>Revised Exception 7 limits this door width exception so that it is not applicable for Group R-1 units, Accessible units, Type A units or Type B units. This is part of the ongoing coordination with new Americans with Disabilities/Architectural Barriers Act (ADA/ABA) Guidelines and the Fair Housing Accessibility Guidelines (FHAG). The result is that all doors within Group R-1 units, Accessible units and Type A units must provide a minimum of 32” clear width, and doors within Type B units must provide a minimum of 31-3/4” clear width.</td>
<td></td>
</tr>
<tr>
<td>1008.1.9</td>
<td>1008.1.9</td>
<td>Panic and fire exit hardware</td>
<td>Reduced the threshold for panic hardware in Groups A and E has been to 50 or more. Panic hardware is required for all Group H, including Group H-4. The new exception resolves a possible conflict with Section 1008.1.8.3, Item 2. The requirement for panic hardware in electrical rooms has been coordinated with the International Code Council Electrical Code Administrative Provisions.</td>
<td></td>
</tr>
<tr>
<td>1009.5.3</td>
<td>1019.1.5</td>
<td>Enclosures under stairways</td>
<td>Coordinated the requirements for enclosure under stairways with the International Residential Code® (IRC®) and relocated from the section dealing with vertical exit enclosures to the section dealing with stairways.</td>
<td></td>
</tr>
<tr>
<td>1009.11.2</td>
<td></td>
<td>Protection at roof hatch openings</td>
<td>Requires guards when the roof hatch or mechanical equipment is provided within 10 ft. of a roof edge.</td>
<td></td>
</tr>
<tr>
<td>1010.9</td>
<td>1010.9</td>
<td></td>
<td>Edge protection</td>
<td>Coordinated the options for edge protection for ramps with ICC/ANSI A117.1-2003.</td>
</tr>
<tr>
<td>Deleted</td>
<td>1010.9.1</td>
<td>Railings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1010.9.1</td>
<td>1010.9.2</td>
<td>Curb, rail, wall or barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1010.9.2</td>
<td></td>
<td>Extended floor or ground surface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1012</td>
<td>1009.11.1 - 1009.11.7</td>
<td>Handrails</td>
<td>Moved handrail provisions from within Section 1009, Stairways and Handrails, into its own section. This will allow clarification for when handrails are used in other locations, such as along ramps.</td>
<td></td>
</tr>
<tr>
<td>1013.5</td>
<td>1012.5</td>
<td>Mechanical equipment</td>
<td>Requires guards when the roof hatch or mechanical equipment is provided within 10 ft. of a roof edge.</td>
<td></td>
</tr>
<tr>
<td>1013.6</td>
<td><strong>NEW</strong></td>
<td>Roof access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1014.2</td>
<td>1013.2</td>
<td>Egress through intervening spaces</td>
<td>Added Item 2, Exception 2 to specify when egress through a back storage area in a mercantile facility would be accepted, but some editorial changes were made for clarification.</td>
<td></td>
</tr>
<tr>
<td>1014.3</td>
<td>1013.3</td>
<td>Common path of egress travel</td>
<td>Exception 4 was added. The travel distance for an individual unit in Group R-2 has been increased to 125 ft. when a NFPA 13 system is provided.</td>
<td></td>
</tr>
<tr>
<td>1014.4.1</td>
<td>1013.4.1</td>
<td>Aisle in Groups B and M</td>
<td>Added provisions to clarify the requirements for aisles and aisle accessways in Group M facilities. See also the new definitions for ‘aisle’ and ‘merchandise pad’.</td>
<td></td>
</tr>
<tr>
<td>1014.4.2</td>
<td><strong>NEW</strong></td>
<td>Aisle accessways in Group M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Table 1015.1</strong></td>
<td><strong>Table 1014.1</strong></td>
<td>Spaces with One Means of Egress</td>
<td>Revised the maximum occupant load in row 1 to 49 as part of a code wide effort to make the cut-off for provisions consistently between 49 and 50. A maximum occupant load of 10 persons for Day Care was added to notes for the table.</td>
<td></td>
</tr>
<tr>
<td>1015.2.2</td>
<td>1014.2.2</td>
<td>Three or more exits or exit access doorways</td>
<td>Revised the language in this section to coordinate with Section 1015.2.1 ‘Two exit or exit access doorways’ and to eliminate the subjective language (i.e. ‘reasonable distance’) for the location of the third exit. However, to be considered an ‘exit’ all exit doorways must be distinct and independent per Section 1019.1 ‘Minimum number of exits.’ The intent is not to allow two adjacent doors to be considered as two exits.</td>
<td></td>
</tr>
<tr>
<td><strong>Table 1019.2</strong></td>
<td><strong>Table 1018.2</strong></td>
<td>Building With One Exit</td>
<td>Added a maximum occupant load of 10 persons for day care facilities to notes for the table.</td>
<td></td>
</tr>
<tr>
<td>1020.1</td>
<td>1019.1</td>
<td>Enclosures required</td>
<td>Revised Exceptions 1, 3, 8 and 9. Exception 1 was expanded to be available for a stairway that connected a basement and first floor. Exception 3 was expanded to be allowable for within individual Group R-1 units in order to address apartment type hotel rooms. Exceptions 8 and 9 were modified to clarify that open exit stairways must be remotely located the same as enclosed exit stairways.</td>
<td></td>
</tr>
<tr>
<td>1020.1.1</td>
<td>1019.1.1</td>
<td>Openings and penetrations</td>
<td>Added the requirement that elevators cannot open into the exit enclosure to be consistent with the same provision for exit discharge passageways.</td>
<td></td>
</tr>
<tr>
<td>1020.1.7.1</td>
<td>1019.1.8.1</td>
<td>Enclosure exit</td>
<td>Added Exception 3 to clarify that a pressurized stairway can use the exit discharge options available in Section 1023.</td>
<td></td>
</tr>
</tbody>
</table>
6. Which of the following is not included in the definition of “Merchandise pad”?
   a. Display of merchandise surrounded by aisles.
   b. Merchandise pads contain display racks and counters.
   c. An area with aisle accessways leading to aisles.
   d. Dressing room areas.

7. What is the maximum floor area to determine the number of occupants in an adult day care?

   ________________________________________________________________

8. For day care facilities, what is the maximum number of occupants permitted in a single exit building or space?

   ________________________________________________________________

9. What is the minimum area allowed per person when designing a space for maximum occupant load?

   ________________________________________________________________

10. What is the minimum clear width for doors within a standard hotel room?

    ________________________________________________________________
11. What option below is not acceptable for edge protection along ramps?

![Options a, b, c with diagrams]

a. Extended Surface
b. Curb or Barrier
c. Rollings

12. Can an elevator open into an exit stairway enclosure if the elevator is enclosed in a separate shaft?

---

### Means of Egress

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1104.3</td>
<td>1104.3</td>
<td>Connected spaces</td>
<td>Revised and removed redundant language and coordinated requirements between Sections 1104.3, 1104.4 and 1104.5.</td>
<td></td>
</tr>
<tr>
<td>1104.5</td>
<td>1104.5</td>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1105.1</td>
<td>1105.1</td>
<td>Public entrances</td>
<td>Requires special entrances and at least 60% of the public entrances are required to be accessible. This increase is coordinated with ADA/ABA Guidelines.</td>
<td></td>
</tr>
<tr>
<td>1106.1</td>
<td>1106.1</td>
<td>Required</td>
<td>When parking spaces are provided, the number of accessible parking spaces should be calculated separately for each parking facility.</td>
<td></td>
</tr>
<tr>
<td>1106.6</td>
<td>1106.6</td>
<td>Location</td>
<td>Added Exception 2 as part of the coordination with Section 1106.1. When remote lots are provided, accessible parking spaces may be located in more accessible locations.</td>
<td></td>
</tr>
<tr>
<td>1107.4</td>
<td>1107.4</td>
<td>Accessible route</td>
<td>The Department of Housing and Urban Development (HUD) has issued a statement that the 2003 IBC is a ‘safe harbor’ document for complying with the Fair Housing Accessibility Guidelines (FHAG). This revision was approved because HUD has indicated that they wish additional clarification regarding site arrival points.</td>
<td></td>
</tr>
<tr>
<td>1107.6.2.2</td>
<td>1107.6.2.2</td>
<td>Group R-2 other than apartment houses, monasteries and convents</td>
<td>Revised to clarify where all types of facilities listed under Group R-2 would fit into the accessibility requirements.</td>
<td></td>
</tr>
<tr>
<td>1108.2</td>
<td>1108.2</td>
<td>Assembly area seating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1108.2.2.4</td>
<td>NEW</td>
<td>Team or player seating</td>
<td>Added accessible seating requirements for lawn and team or player seating.</td>
<td></td>
</tr>
<tr>
<td>1108.2.4</td>
<td>1108.2.6</td>
<td>Designated aisle seats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>1108.2.3 Integration</td>
<td>Deleted sections because of redundant language pertaining to the technical requirements for assembly seating was found in ICC/ANSI A117.1-2003.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1108.2.3</td>
<td>Dispersion of wheelchair spaces in multilevel assembly seating areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>1108.2.4 Multilevel assembly seating areas</td>
<td>Deleted sections because of redundant language pertaining to the technical requirements for assembly seating was found in ICC/ANSI A117.1-2003.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>1108.2.4.1 Companion seats</td>
<td>Deleted the exception for child size fixtures since requirements for child size facilities are not provided in ICC/ANSI A117.1-2003. When bathrooms are clustered, 50% of the bathroom must be accessible. This increase is part of the coordination with the ADA/ABA Guidelines.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.2</td>
<td>Toilet and bathing facilities</td>
<td>Deleted the exception for child size fixtures since requirements for child size facilities is not provided in ICC/ANSI A117.1-2003.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.3</td>
<td>Sinks</td>
<td>Requires that both accessible and standing person drinking fountains must be provided. The technical information for both is found in ICC/ANSI A117.1-2003.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.5</td>
<td>Drinking fountains</td>
<td>Added three additional locations where platform lifts may be used as part of an accessible route which are: amusement rides, play structures and player seating areas (i.e Items 7-9). Item 6 dealing with courtroom facilities was revised as part of the coordination efforts with ADA/ABA Guidelines.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14</td>
<td>Recreational and sports facilities</td>
<td>Added a new section on recreational and sports facilities as part of the coordination with the ADA/ABA Guidelines.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.3</td>
<td>Other occupancies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.4</td>
<td>Recreational and sports facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.4.1</td>
<td>Bowling lanes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.4.2</td>
<td>Court sports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.4.3</td>
<td>Raised boxing or wrestling rings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.4.4</td>
<td>Raised refereeing, judging, and scoring areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1109.14.4.5</td>
<td>Raised diving boards and diving platforms</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. Where would you find the technical requirements for an Accessible hotel room?

14. Where are drinking fountains for standing persons required?

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1404.9</td>
<td>Vinyl siding</td>
<td>Requires certification and labeling of vinyl siding to the requirements of ASTM D 3679.</td>
</tr>
<tr>
<td>1405.12.2</td>
<td>Window sills</td>
<td>Requires minimum window sill height of 24 inches in Group R.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1504.2.1</td>
<td>Alternative test method</td>
<td>Added an alternative test method for testing the acceptability of special fastening methods for asphalt shingles.</td>
</tr>
<tr>
<td>1507.2.7</td>
<td>Attachment</td>
<td>Requires asphalt shingles to bear a label demonstrating compliance with ASTM D 3161, Class F, in high wind areas where wind speed exceeds 110 mph.</td>
</tr>
<tr>
<td>1507.3.5</td>
<td>Concrete tile</td>
<td>References ASTM C1492 for requirements for concrete roof tiles, and remove the detail requirements from the body of the code.</td>
</tr>
</tbody>
</table>
15. Which of the following provisions are not new to the 2006 IBC?

a. Vinyl siding is required to be certified and labeled.

b. Fire-resistance-rated glazing will have labeling requirements

c. Fire barriers are now required to be tested in accordance with ASTM E84.

d. Fire barriers enclosing atriums may contain an unlimited amount of windows.

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1602</td>
<td>Definitions</td>
<td>Revised the definitions for clarification in terminology (e.g., “flexible diaphragm,” and “dead loads”). Adds definitions for “fabric partitions,” “occupancy category” and “vehicle barrier system”. Notation was updated for consistency with provisions of the code.</td>
</tr>
<tr>
<td>1603.1</td>
<td>General</td>
<td>Clarified information shown on construction documents.</td>
</tr>
<tr>
<td>1603.1.1</td>
<td>Flood live load</td>
<td>Clarified information shown on construction documents.</td>
</tr>
<tr>
<td>1603.1.5</td>
<td>Earthquake design data</td>
<td>Clarified seismic information required on construction documents.</td>
</tr>
<tr>
<td>1603.1.6</td>
<td>Flood design data</td>
<td>Revised to state that section 1612.5 design requirements are to be included if required.</td>
</tr>
<tr>
<td>1603.4</td>
<td>Occupancy permits for changed loads</td>
<td>Deleted construction document requirements that conflicted with other code sections.</td>
</tr>
<tr>
<td>Table 1604.3</td>
<td>Deflection Limits</td>
<td>Clarified the footnote that indicates the deflection requirements for sunroom additions constructed of aluminum structural framing and sandwich panels.</td>
</tr>
<tr>
<td>1604.4</td>
<td>Analysis</td>
<td>Clarified treatment of flexible diaphragms.</td>
</tr>
<tr>
<td>1604.5</td>
<td>Occupancy category</td>
<td>Revisited to require assignment of building to an occupancy category.</td>
</tr>
<tr>
<td>Table 1604.5</td>
<td>Occupancy Category of Buildings and Other Structures</td>
<td>Removed importance factors from table. Category III structure with occupant load greater than 300 clarified to apply to public assembly.</td>
</tr>
<tr>
<td>1604.5.1</td>
<td>NEW Multiple occupancies</td>
<td>Provided direction for structures with more than 1 occupancy category.</td>
</tr>
<tr>
<td>1604.9</td>
<td>NEW Counteracting structural actions</td>
<td>Requires consideration of sliding, overturning and uplift in designing for earthquake and wind.</td>
</tr>
<tr>
<td>1604.10</td>
<td>Wind and seismic detailing</td>
<td>Moved this provision.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
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</tr>
<tr>
<td>1605.2.1</td>
<td>Basic load combinations</td>
<td>Modified basic load combinations and related requirements for allowable stress design as well as load and resistance factor design consistency with ASCE 7.</td>
</tr>
<tr>
<td>1605.2.2</td>
<td>Other loads</td>
<td></td>
</tr>
<tr>
<td>1605.3.1</td>
<td>Basic load combinations</td>
<td></td>
</tr>
<tr>
<td>1605.3.1.1</td>
<td>Stress increases</td>
<td></td>
</tr>
<tr>
<td>1605.3.1.2</td>
<td>Other loads</td>
<td></td>
</tr>
<tr>
<td>1605.3.2</td>
<td>Alternative basic load combinations</td>
<td>Moved requirement for dead loads resisting wind effect from section 1609.1.3. Clarified seismic load effects applicable to foundation design.</td>
</tr>
<tr>
<td>1605.3.2.1</td>
<td>Other loads</td>
<td>Revised for consistency with other code sections.</td>
</tr>
<tr>
<td>1605.5</td>
<td>Heliports and helistops</td>
<td>Corrected terminology and added exception for reduced uniform live load.</td>
</tr>
<tr>
<td>1606.1</td>
<td>NEW General</td>
<td>Reformatted dead load requirements for clarity.</td>
</tr>
<tr>
<td>1606.2</td>
<td>Design dead load</td>
<td></td>
</tr>
<tr>
<td>Table 1607.1</td>
<td>Minimum Uniformly Distributed Live Loads and Minimum Concentrated Live Loads</td>
<td>Revised loads for assembly, catwalks, hospitals, residential, roof, stairs and exits. Footnotes clarify residential attic storage loads.</td>
</tr>
<tr>
<td>1607.5</td>
<td>Partition loads</td>
<td>Decreased the minimum uniform live load for partitions.</td>
</tr>
<tr>
<td>1607.7.1</td>
<td>Handrails and guards</td>
<td>Corrected terminology for consistency with other sections.</td>
</tr>
<tr>
<td>1607.9</td>
<td>Reduction in live loads</td>
<td>Clarified that this section is not applicable to roof live loads.</td>
</tr>
<tr>
<td>1607.9.1.1</td>
<td>Heavy line loads</td>
<td>Reformatted and added exception for alternative live load reductions.</td>
</tr>
<tr>
<td>1607.9.2</td>
<td>Alternative floor live load reduction</td>
<td>Revised terminology and reformatted for clarity. Other revisions were made to make limitations on alternate live load reductions similar to Section 1607.9.1.</td>
</tr>
<tr>
<td>1607.11.1</td>
<td>Distribution of roof loads</td>
<td>Clarified this section to apply to roof live loads that are reduced to less than 20 psf.</td>
</tr>
<tr>
<td>1607.11.2</td>
<td>Reduction in roof live loads</td>
<td>Clarified that these provisions apply to reducing the tabulated live load and now refers to Table 1607.1.</td>
</tr>
<tr>
<td>1607.11.2.1</td>
<td>Flat, pitched and curved roofs</td>
<td></td>
</tr>
<tr>
<td>1607.11.2.2</td>
<td>Special-purpose roofs</td>
<td>Now, refers user to Table 1607.1 for these roof loads.</td>
</tr>
<tr>
<td>1607.11.2.4</td>
<td>Awnings and canopies</td>
<td></td>
</tr>
<tr>
<td>1607.13</td>
<td>Interior walls and partitions</td>
<td>Added fabric partition requirements.</td>
</tr>
<tr>
<td>1607.13.1</td>
<td>NEW Fabric partitions</td>
<td></td>
</tr>
<tr>
<td>1608</td>
<td>Snow Loads</td>
<td>Now, permits ground snow loads to be determined using ASCE 7. All other criteria for roof snow load must be in accordance with ASCE 7.</td>
</tr>
<tr>
<td>1609.1.1</td>
<td>Determination of wind loads</td>
<td>Simplified provisions for wind loading replaced by ASCE 7 reference.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
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</tr>
<tr>
<td><strong>Table</strong> 1609.1.2</td>
<td>Wind-Borne Debris Protection Fastening Schedule for Wood Structural Panels</td>
<td>Option to allow unprotected glazed openings removed. The exception for using wood structural panels is clarified.</td>
</tr>
<tr>
<td><strong>Table</strong> 1609.3.1</td>
<td>Equivalent Basic Wind Speeds</td>
<td>Provided formula for converting wind speed and updates tabulated values for fastest mile wind speed.</td>
</tr>
<tr>
<td><strong>Table</strong> 1609.4.1</td>
<td>Wind directions and sectors</td>
<td>Updated provisions for determination of wind exposure category for the purpose of consistency with the 2005 edition of ASCE 7.</td>
</tr>
<tr>
<td><strong>Table</strong> 1609.4.2</td>
<td>Surface roughness categories</td>
<td>Added referenced standards to provide methods for determining wind forces on asphalt shingles as well as the resistance of sealant.</td>
</tr>
<tr>
<td><strong>Table</strong> 1609.4.3</td>
<td>Exposure categories</td>
<td>Referenced ponding instability provision in ASCE 7.</td>
</tr>
<tr>
<td><strong>Table</strong> 1609.5.2</td>
<td>Roof coverings</td>
<td>Added clarification for buildings located in more than one flood hazard zone.</td>
</tr>
<tr>
<td><strong>Table</strong> 1612.1</td>
<td>Flood hazard documentation</td>
<td>Updated references to ASCE 24 to current edition.</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.1</td>
<td>Earthquake Loads</td>
<td>Replaced technical provision for earthquake load determination by referencing ASCE 7.</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.2</td>
<td>Definitions</td>
<td>Updated definition for consistency with code provisions and removes definitions of terms no longer used in the code.</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.3</td>
<td>Existing buildings</td>
<td>Cross referenced the provision for existing buildings that are relocated to chapter 34.</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.5</td>
<td>Seismic ground motion values</td>
<td>References new maps and identifies low-risk areas assigned to SDC A.</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.5.1</td>
<td>Mapped acceleration parameters</td>
<td>Incorporated latest USGS ground motion maps. (See EQ Map on next page.)</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.5.3(1)</td>
<td>Values of Site Coefficient $F_a$</td>
<td>Revised title and now references ASCE 7 for determination of site coefficients for site class F.</td>
</tr>
<tr>
<td><strong>Table</strong> 1613.5.3(2)</td>
<td>Values of Site Coefficient $F_v$</td>
<td>Clarified treatment of rock layers that are less than 100 feet in depth.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>1613.5.6</td>
<td>Determination of seismic design category</td>
<td>Now, provides direction for seismic design category determination where the mapped spectral response acceleration at one-second period is greater than or equal to 0.75g. Terminology updated for consistency with other sections.</td>
</tr>
<tr>
<td>1613.5.6.1</td>
<td>Alternative seismic design category determination</td>
<td></td>
</tr>
<tr>
<td>Table 1613.5.6(1)</td>
<td>Table 1616.3(1)</td>
<td>Seismic Design Category Based on Short Period Response Accelerations</td>
</tr>
<tr>
<td>Table 1613.5.6(2)</td>
<td>Table 1616.3(2)</td>
<td>Seismic Design Category Based on 1-Second Period Response Accelerations</td>
</tr>
<tr>
<td>1613.5.6.2</td>
<td>Simplified design procedure</td>
<td>Now, directs user to ASCE 7 for determining seismic design category under the simplified procedure.</td>
</tr>
<tr>
<td>1613.6</td>
<td>Alternatives to ASCE 7</td>
<td>Indicated modifications to ASCE 7 standard.</td>
</tr>
<tr>
<td>1613.6.1</td>
<td>Assumption of Flexible Diaphragm</td>
<td>Clarified the term “Flexible Diaphragm”.</td>
</tr>
<tr>
<td>1613.6.2</td>
<td>Additional seismic force-resisting systems for seismically isolated structures</td>
<td>Now, allows OMF’s and OCBF’s up to 160 ft. where conditions are met.</td>
</tr>
</tbody>
</table>

Maximum Considered Earthquake Ground Motion Maps Based on 2002 Updates by USGS
Excerpt from Figure 1613.5(13)
16. What referenced standard specifies earthquake, snow and wind load importance factors?

17. What uniform live load applies to a residential attic space that has a maximum clearance of 36 inches between the top of the ceiling joist and the bottom of the rafters?

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1702.1</td>
<td>1702.1</td>
<td>Definitions</td>
<td>Added definitions of “designated seismic system” and “main wind-force-resisting system”. Definition of “fabricated item” is clarified.</td>
<td></td>
</tr>
<tr>
<td>1704.1.1</td>
<td>1704.1.1</td>
<td>Statement of special inspections</td>
<td>Retitled and revised to cross reference requirements located in Section 1705.</td>
<td></td>
</tr>
<tr>
<td>Table 1704.3</td>
<td>Table 1704.3</td>
<td>Required Verification and Inspection of Steel Construction</td>
<td>Updated referenced standards.</td>
<td></td>
</tr>
<tr>
<td>1704.4</td>
<td>1704.4</td>
<td>Concrete construction</td>
<td>Clarified Item 2.3 for footings and the new concrete foundation wall table is referenced in Item 4.</td>
<td></td>
</tr>
<tr>
<td>Table 1704.4</td>
<td>Table 1704.4</td>
<td>Required Verification and Inspection of Concrete Construction</td>
<td>Added formwork inspection to required inspections.</td>
<td></td>
</tr>
<tr>
<td>1704.5</td>
<td>1704.5</td>
<td>Masonry construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1704.5.1</td>
<td>1704.5.1</td>
<td>Empirically designed masonry, glass unit masonry and masonry veneer in Occupancy Category IV</td>
<td>Now, added exception for masonry fireplaces and chimneys. Provides a clarification in code terminology.</td>
<td></td>
</tr>
<tr>
<td>1704.5.2</td>
<td>1704.5.2</td>
<td>Engineered masonry in Occupancy Category I, II or III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1704.5.3</td>
<td>1704.5.3</td>
<td>Engineered masonry in Occupancy Category IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 1704.5.1</td>
<td>Table 1704.5.1</td>
<td>Level 1 Special Inspection</td>
<td>Revised special inspections for masonry to be consistent with the latest masonry standards.</td>
<td></td>
</tr>
<tr>
<td>Table 1704.5.3</td>
<td>Table 1704.5.3</td>
<td>Level 2 Special Inspection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1704.7</td>
<td>1704.7</td>
<td>Soils</td>
<td>Now, refers to the new table for soil inspection requirements.</td>
<td></td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
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<td>-------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 1704.7</td>
<td>Required Verification and Inspection of Soils</td>
<td>Table states requirements for inspection of soils.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1704.8</td>
<td>Pile foundations</td>
<td>Refers to the new table for required inspections of piles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 1704.8</td>
<td>Required Verification and Inspection of Pile Foundations</td>
<td>Refers to the new table for required inspections of piers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1704.9</td>
<td>Pier foundations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table 1704.9</td>
<td>Required Verification and Inspection of Pier Foundations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1704.11</td>
<td>Mastic and intumescent fire-resistant coatings</td>
<td>Requires special inspection of fire-resistant coating.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705</td>
<td>Statement of Special Inspections</td>
<td>Retitled as “Statement of Special Inspections” and required elements are clarified.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.1</td>
<td>General</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.2</td>
<td>Content of statement of special inspections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.3</td>
<td>Seismic resistance</td>
<td>Clarified additional special inspections required for seismic resistance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.3.1</td>
<td>Seismic requirements in the statement of special inspections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.4</td>
<td>Wind resistance</td>
<td>Clarified additional special inspections for wind resistance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.4.1</td>
<td>Wind requirements in the statement of special inspections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1705.4.2</td>
<td>Detailed requirements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1706</td>
<td>Contractor Responsibilities</td>
<td>Moved contractor responsibility requirements to a separate section and revised to be consistent with statement of special inspections.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1706.1</td>
<td>Contractor responsibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1707.1</td>
<td>Special inspections for seismic resistance</td>
<td>Clarified applicability of these special inspections has been.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1707.3</td>
<td>Structural wood</td>
<td>Clarified the components of the seismic force-resisting system that require special inspections.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1707.5</td>
<td>Pier foundations</td>
<td>Relocated special inspections of pier foundations for seismic resistance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1707.7</td>
<td>Mechanical and electrical components</td>
<td>Clarified special inspection requirements for mechanical and electrical equipment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1707.9</td>
<td>Designated seismic system verifications</td>
<td>Revised title and deleted information unrelated to special inspections.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
<td></td>
<td></td>
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<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1708.1</td>
<td>Masonry</td>
<td></td>
<td></td>
<td></td>
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<td>Empirically designed masonry and glass unit masonry in Occupancy Category I, II or III</td>
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<td>Revised title and indicates required information to be shown in construction documents.</td>
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<td>Reformatted structural observation provisions to provide clarity.</td>
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18. What must the registered design professional include in the statement of special inspections?
   a. _______________________________________________________________________
   b. _______________________________________________________________________
   c. _______________________________________________________________________
   d. _______________________________________________________________________
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Updated provisions for concrete to 2005 edition of ACI 318. Copyrighted ACI 318 text removed from Sections 1902 through 1907.

Added a list of the applicable concrete exposures. Reworded Exception for consistency in terminology.

Added footnote to allow an option for garage floor slabs.

Added requirement formerly in Section 1905.6.2.3 as an exception.

Updated the modifications based on latest edition of ACI 318. In addition, portions of section 1910 that were modifications to ACI 318 are relocated to 1908.

Relocated ACI 318 modifications from Section 1910.

Added definitions for “Detailed plain concrete structural wall”, “Ordinary precast structural wall”, “Ordinary reinforced concrete structural wall” and “Ordinary structural plain concrete wall”. Revised other definition for consistency with other code sections.

Revised to reflect 2005 ACI 318 text. Additional modification made to clarify the limitation on specified yield stress of transverse reinforcement.

Reworked and relocated portions of former Section 1908.1.3 for clarity.

Reworked this ACI 318 modification for consistency with other provisions.

Added ACI 318 modification for consistency with 2003 NEHRP.

Relocated ACI 318 modification from Section 1910.

Updated ACI 318 modification for consistency with 2003 NEHRP.

Relocated ACI 318 modifications from Section 1910.

Added ACI 318 modification for consistency with 2003 NEHRP.

Added AAC masonry requirement.

Added definitions of “AAC masonry”, “Autoclaved”, “Aerated Concrete”, “Foundation Pier”, “Glass Unit Masonry” and “Thin-Bed Mortar”. 
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<td>2006 2105</td>
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<td>2006 2107</td>
<td>Allowable Stress Design</td>
<td>Updated for consistency with ACI 530/ASCE 5/TMS 402 and reformatted for clarity.</td>
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<td>2006 2108</td>
<td>Strength Design of Masonry</td>
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<td>Revised Exception 4 to reflect requirements for combustible material at the sides of fireplace openings.</td>
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<td>2106 2112.3</td>
<td>Footings and foundations</td>
<td>Revised masonry heater provisions for better consistency with industry standards.</td>
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<td>2106 2113.10.1</td>
<td>Masonry veneer chimneys</td>
<td>Added a reference to chapter 14 for masonry veneer chimneys.</td>
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<td>2106 2113.12</td>
<td>Clay flue lining (installation)</td>
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<td>Table 2113.16(2)</td>
<td>Net Cross-Sectional Area of Square and Rectangular Flue Sizes</td>
<td>Revised table to reflect the nominal outside flue dimension.</td>
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Test Your Knowledge

19. What provisions apply to the design of autoclaved aerated concrete masonry?
### Structural

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<td>2006.5 NEW</td>
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<td>2210.4 NEW</td>
<td>Wall stud design</td>
<td>Referenced AISI standard for design of cold-formed steel wall studs.</td>
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<td>2210.5 NEW</td>
<td>Lateral design</td>
<td>Replaced AISI standard for design of shear walls and diaphragms provisions formerly in Section 2211.</td>
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<td>2210.6 NEW</td>
<td>Prescriptive framing</td>
<td>Referenced AISI prescriptive standard for one-and two-family dwellings.</td>
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### Structural

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<td>Structural log members</td>
<td>Added referenced standard to establish stresses for structural log members.</td>
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<td>Round timber poles and piles</td>
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<td>Incorporated standard for determining fire-retardant-treated-wood stress adjustment factors.</td>
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**Added general requirements for the layout of lumber decking as well as installation requirements for tongue-and-groove decking.**

Specified coating weights that are based on a referenced standard. Added a new exception that allows certain types of fasteners to be mechanically galvanized.
<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
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<tbody>
<tr>
<td>2304.11.2</td>
<td>2304.11.2</td>
<td>Wood used above ground</td>
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<tr>
<td>2304.11.4</td>
<td>2304.11.4</td>
<td>Wood in contact with the ground or fresh water</td>
<td>Updated AWPA standard references to refer to new U1 standard.</td>
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<tr>
<td>2304.11.6</td>
<td>2304.11.6</td>
<td>Termite protection</td>
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<tr>
<td>2304.11.7</td>
<td>2304.11.7</td>
<td>Wood used in retaining walls and cribs</td>
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</tr>
<tr>
<td>2304.12</td>
<td>2304.12</td>
<td>Long-term loading</td>
<td>Replaced restrictions regarding support of masonry and concrete on wood members with a requirement to consider the effect of long-term loading in accordance with AF&amp;PA NDS.</td>
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</tr>
<tr>
<td>2305.1</td>
<td>2305.1</td>
<td>General</td>
<td>Added AF&amp;PA Design Provisions for Wind and Seismic as an alternative.</td>
<td></td>
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<tr>
<td>2305.1.4</td>
<td>2305.1.4</td>
<td>Shear panel connections</td>
<td>Clarified the limitation on toenails in seismic applications.</td>
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<tr>
<td>2305.1.5</td>
<td>2305.1.5</td>
<td>Wood members resisting horizontal forces contributed by masonry and concrete walls</td>
<td>Clarified restrictions on wood members used to resist seismic forces from concrete and masonry construction.</td>
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<tr>
<td>2305.1.6</td>
<td>NEW</td>
<td>Wood members resisting seismic forces from nonstructural masonry or concrete</td>
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<tr>
<td>2305.2.2</td>
<td>2305.2.2</td>
<td>Deflection</td>
<td></td>
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<tr>
<td>Table 2305.2.2(1)</td>
<td>NEW</td>
<td>e. Values For Use in Calculating Diaphragm Deflection Due to Fastener Slip Structural I</td>
<td>Added tables to provide information necessary in the deflection formulae for diaphragms and shear walls. Revised notation to refer to the new tables.</td>
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<tr>
<td>Table 2305.2.2(2)</td>
<td>NEW</td>
<td>Values of Gt For Use in Calculating Deflection of Wood Structural Panel Shear Walls and Diaphragms</td>
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<tr>
<td>2305.3.2</td>
<td>2305.3.2</td>
<td>Deflection</td>
<td></td>
<td></td>
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<tr>
<td>2305.3.4</td>
<td>2305.3.3</td>
<td>Shear wall aspect ratios</td>
<td>Clarified the determination of height and width of shear wall segments.</td>
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<tr>
<td>Table 2305.3.4</td>
<td>Table 2305.3.3</td>
<td>Maximum Shear Wall Dimension Ratios</td>
<td>Provided consistent shear wall terminology.</td>
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<tr>
<td>2305.3.5</td>
<td>Shear wall height definition</td>
<td>Revised shear wall terminology for consistency. (See Figure 2305.3.5.)</td>
<td></td>
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<tr>
<td>Figure 2305.3.5</td>
<td>General Definition of Shear Wall Height, Width and Height-to-Width Ratio</td>
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<tr>
<td>2305.3.5.1</td>
<td>Perforated shear wall segment height definition</td>
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<tr>
<td>2305.3.5.2</td>
<td>Force transfer shear wall pier height definition</td>
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<td>2305.3.6</td>
<td>Shear wall width definition</td>
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<td>Perforated shear wall segment width definition</td>
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<td>2305.3.6.2</td>
<td>Force transfer shear wall pier width definition</td>
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<tr>
<td>2305.3.8.1</td>
<td>Force transfer around openings</td>
<td></td>
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<td>2305.3.8.2</td>
<td>Perforated shear walls</td>
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<td>2305.3.8.2.2</td>
<td>Perforated shear wall resistance</td>
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<tr>
<td>2305.3.11</td>
<td>Sill plate size and anchorage in Seismic Design Category D, E, or F</td>
<td>Reduced the required thickness of the plate washer. Exception is clarified and plate washer size is revised.</td>
<td></td>
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<tr>
<td>2306.1</td>
<td>Allowable stress design</td>
<td>Revised standards referenced for allowable stress design.</td>
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<tr>
<td>2306.1.4</td>
<td>Lumber decking</td>
<td>Added allowable stress design requirements for lumber decking.</td>
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<td>Table 2306.1.4</td>
<td>Allowable Loads for Lumber Decking</td>
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<tr>
<td>2306.2.1</td>
<td>Wall stud bending stress increase</td>
<td>Updated increases for 2’ x 6’ and 2’ x 8’. Clarified that increases apply to sawn lumber studs. Clarified that all edges of wood structural panels must be supported and nailed.</td>
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<tr>
<td>Table 2306.2.1</td>
<td>Wall Stud Bending Stress Increase Factors</td>
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<tr>
<td>Table 2306.3.1</td>
<td>Table 2306.3.1</td>
<td>Allowable Shear (pounds per foot) for Wood Structural Panel Diaphragms With Framing of Douglas Fir Larch, or Southern Pine for Wind or Seismic Loading</td>
<td>Clarified column headings and footnotes. New footnote provided adjustment factors for permanent and normal duration loads.</td>
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<tr>
<td>Table 2306.3.2</td>
<td>Table 2306.3.2</td>
<td>Allowable Shear (pounds per foot) for Wood Structural Panel Blocked Diaphragms Utilizing Multiple Rows of Fasteners (high load diaphragms) With Framing of Douglas Fir Larch, or Southern Pine for Wind or Seismic Loading</td>
<td>Revised Footnote “I” to allow alternative to single 3-inch member. Editorial clarifications made to column headings and footnotes. Added new footnote to provide adjustment factors for permanent and normal duration loads.</td>
<td></td>
</tr>
<tr>
<td>Table 2306.4.1</td>
<td>Table 2306.4.1</td>
<td>Allowable Shear (pounds per foot) for Wood Structural Panel Shear Walls With Framing of Douglas Fir Larch, or Southern Pine for Wind or Seismic Loading</td>
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<tr>
<td>Table 2306.4.3</td>
<td>Table 2306.4.3</td>
<td>Allowable Shear for Particleboard Shear Wall Sheathing</td>
<td>Added Footnote on galvanized nails.</td>
<td></td>
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<tr>
<td>Table 2306.4.4</td>
<td>Table 2306.9.3(4)</td>
<td>Allowable Shear Values (plf) for Wind or Seismic Loading on Shear Walls of Fiberboard Sheathing Board Construction for Type V Construction Only a, b, c, d, e, f, g, h</td>
<td>Relocated table and revised title.</td>
<td></td>
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<tr>
<td>Table 2306.4.5</td>
<td>Table 2306.4.5</td>
<td>Allowable Shear for Wind or Seismic Forces for Shear Walls of Lath and Plaster or Gypsum Board Wood Framed Wall Assemblies</td>
<td>Clarified footnotes (e.g.: change “nails” to “fasteners”).</td>
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<td>2306.4.5.1.3</td>
<td>2306.4.5.1.3</td>
<td>Fastening</td>
<td>Revised wording from “nails” to “fasteners.”</td>
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<td>Fasteners</td>
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<tr>
<td>2308.2</td>
<td>Limitations</td>
<td>Clarified that the floor-to-floor height allows for 10 feet stud height. Also, clarified that the dead load limit is for the combined roof/ceiling assembly and adds exceptions to the dead load limits for masonry veneer, fireplaces and chimneys.</td>
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<tr>
<td>2308.2.2</td>
<td>Buildings in Seismic Design Category B, C, D, or E</td>
<td>Deleted exceptions for one- and two-family dwellings.</td>
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<tr>
<td>2308.4</td>
<td>Design of elements</td>
<td>Clarified how individual elements exceeding Section 2308.2 limitations or not specifically mentioned in the code can now be placed in otherwise conventional construction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2308.4.1</td>
<td>NEW</td>
<td>Elements exceeding limitations of conventional construction</td>
<td></td>
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</tr>
<tr>
<td>2308.4.2</td>
<td>NEW</td>
<td>Structural elements or systems not described herein</td>
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<td></td>
</tr>
<tr>
<td>2308.9.3</td>
<td>Bracing</td>
<td>Revised wording to be consistent. Limited table to 2 story buildings in Seismic Design Category C.</td>
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<tr>
<td>Table 2308.9.3(1)</td>
<td>Table 2308.9.3(1)</td>
<td>Braced Wall Panels</td>
<td></td>
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<tr>
<td>Figure 2308.9.3</td>
<td>Figure 2308.9.3</td>
<td>Basic Components of the Lateral Bracing System</td>
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<tr>
<td>2308.9.3.2</td>
<td>NEW</td>
<td>Alternate bracing wall panel adjacent to a door or window opening</td>
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<tr>
<td>Figure 2308.9.3.2</td>
<td>NEW</td>
<td>Alternate Braced Wall Panel Adjacent to a Door or Window Opening</td>
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<tr>
<td>2308.9.6</td>
<td>Openings in interior bearing partitions</td>
<td>Removed the reference to one- and two-family dwellings.</td>
<td></td>
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<tr>
<td>Table 2308.10.1</td>
<td>Table 2308.10.1</td>
<td>Required Rating of Uplift Connectors (pounds)</td>
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<td>2308.10.7</td>
<td>Engineered wood products</td>
<td>Provided caution on notching or drilling.</td>
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<tr>
<td>2308.11.1</td>
<td>Number of stories</td>
<td>Deleted exception for one-and two-family dwellings.</td>
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<tr>
<td>2308.11.2</td>
<td>Concrete or masonry</td>
<td>Corrected terminology for consistency.</td>
<td></td>
<td></td>
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<tr>
<td>2308.12.1</td>
<td>Number of stories</td>
<td>Deleted exception for one and two-family dwellings.</td>
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<tr>
<td>2308.12.2</td>
<td>Concrete or masonry</td>
<td>Corrected terminology for consistency.</td>
<td></td>
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<tr>
<td>2308.12.4</td>
<td>Braced wall line sheathing</td>
<td>Removed statement regarding ‘designed collector’.</td>
<td></td>
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<tr>
<td>Table 2308.12.4</td>
<td>Table 2308.12.4</td>
<td>Wall Bracing in Seismic Design Categories D and E</td>
<td></td>
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<tr>
<td>2308.12.7</td>
<td>Anchorage of exterior means of egress components</td>
<td>Revised title and corrected terminology for consistency.</td>
<td></td>
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<tr>
<td>2308.12.8</td>
<td>Steel plate washers</td>
<td>Increased the minimum plate washer size. Reduced minimum thickness. Permitted diagonally slotted bolt holes.</td>
<td></td>
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</tr>
</tbody>
</table>
General Definition of Shear Wall Height, Width and Height-to-Width Ratio
Figure 2305.3.5

Alternate Braced Wall Panel Adjacent to a Door or Window Opening
Figure 2308.9.3.2
20. A segmented shear wall has a clear height (h) of 9.5 feet and is sheathed with wood structural panels. The width of sheathing (w) adjacent to a door opening is 4 feet. Does a 9.5 feet by 4 feet shear wall segment comply? See Figure 2305.3.5(a).

21. What standard governs the design of wood members using the load and resistance factor design method?

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<tr>
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<td>2003</td>
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<tr>
<td>2403.1</td>
<td>2403.1</td>
<td>Identification Corrected terminology to be consistent with other code sections.</td>
</tr>
<tr>
<td>2404.1</td>
<td>2404.1</td>
<td>Vertical glass Replaced requirements with reference to ASTM E1300.</td>
</tr>
<tr>
<td>2404.2</td>
<td>2404.2</td>
<td>Sloped glass Clarified glass load resistance requirement.</td>
</tr>
<tr>
<td>2404.3</td>
<td>NEW</td>
<td>Wired, patterned and sandblasted glass Provided direction for glass that is not within the scope of ASTM 1300.</td>
</tr>
<tr>
<td>2404.3.1</td>
<td>NEW</td>
<td>Vertical wired glass</td>
</tr>
<tr>
<td>2404.3.2</td>
<td>NEW</td>
<td>Sloped wired glass</td>
</tr>
<tr>
<td>2404.3.3</td>
<td>NEW</td>
<td>Vertical patterned glass</td>
</tr>
<tr>
<td>2404.3.4</td>
<td>NEW</td>
<td>Sloped patterned glass</td>
</tr>
<tr>
<td>2404.3.5</td>
<td>NEW</td>
<td>Vertical sandblasted glass</td>
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<tr>
<td>2404.4</td>
<td>NEW</td>
<td>Other designs</td>
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### Structural

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<tr>
<td>2405.5</td>
<td>Unit skylights</td>
<td>Revised referenced standard for unit skylights.</td>
</tr>
<tr>
<td>2406.1</td>
<td>Human impact loads</td>
<td>Removed wired glass.</td>
</tr>
<tr>
<td>2406.2</td>
<td>Identification of safety glazing</td>
<td>Corrected terminology and revised for consistency with other sections.</td>
</tr>
<tr>
<td>2407.1</td>
<td>Materials</td>
<td>Revised terminology for consistency with other sections.</td>
</tr>
<tr>
<td>2407.1.3</td>
<td>Parking garages</td>
<td>Revised terminology for consistency with other sections.</td>
</tr>
<tr>
<td>2409.1</td>
<td>Glass in elevator enclosures</td>
<td>Added requirements for glass in elevator enclosures.</td>
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<tr>
<td>2509.2</td>
<td>Base for tile</td>
<td>Limited water-resistant gypsum board to water closet compartment walls. Requires cement, fiber-cement or glass mat gypsum backers in showers and wall at tubs.</td>
</tr>
<tr>
<td>2510.5.2.1</td>
<td>Use of gypsum board as a backing board</td>
<td>Revised terminology for consistency with current industry practices.</td>
</tr>
<tr>
<td>2510.5.2.2</td>
<td>Use of gypsum sheathing backing</td>
<td>Revised terminology for consistency with current industry practices.</td>
</tr>
<tr>
<td>2510.6</td>
<td>Water-resistive barriers</td>
<td>Revised title and added exception</td>
</tr>
<tr>
<td>2512.1.2</td>
<td>Weep screeds</td>
<td>Revised terminology for consistency with other sections.</td>
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<tr>
<td>2603.8</td>
<td>Protection against termites</td>
<td>Placed limitations or prohibitions of the use of foam plastics in areas where heavy termite infestation is probable.</td>
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## General Issues

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<td>3002.1.1</td>
<td>Opening protectives</td>
<td>Coordinated with A17.1 to allow elevators to be open during Phase I Recall even when opening protectives are normally required. A similar change made to Section 715.3.7.</td>
</tr>
<tr>
<td>3002.4</td>
<td>Elevator car to accommodate ambulance stretcher</td>
<td>Revised the minimum stretcher dimensions that an elevator must accommodate from 24 inches x 76 inches to 24 inches x 84 inches.</td>
</tr>
<tr>
<td>3004.2</td>
<td>Location of vents</td>
<td>Coordinated with A17.1 and removes confusing language regarding where the vents in an elevator shaft can be located.</td>
</tr>
<tr>
<td>3004.3</td>
<td>Area of Vents</td>
<td>Deleted Section 3004.4 and incorporated into Section 3004.3. This was done to clarify that vents can remain closed until activated by smoke detectors in certain conditions.</td>
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<td>3104.3</td>
<td>Construction</td>
<td>Now, allows the use of fire retardant treated wood in the roof construction of a pedestrian walkway which connects two buildings of Type I or II construction.</td>
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<tr>
<td>3104.5</td>
<td>Fire barriers between pedestrian walkways and buildings</td>
<td>The exception now allows open parking garages to take advantage of reductions in opening protective requirements without requiring a sprinkler system.</td>
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<tr>
<td>3109.5</td>
<td>Entrapment avoidance</td>
<td>Entire section rewritten to be more comprehensive reference appropriate standards with regard to suction outlets in swimming pools. The language is also more consistent with the IRC. This includes several new subsections.</td>
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<td>3402.1</td>
<td>Definition — Primary area of function (New)</td>
<td>Added a new definition to assist in the application of the accessibility provisions for existing buildings. The same definition was added to the International Existing Building Code® (IEBC®).</td>
</tr>
<tr>
<td>3403.1.1</td>
<td>Flood hazard areas</td>
<td>Converted exception from Section 3403.1 to a requirement. The original language was actually a requirement related to the full compliance with flood design for new buildings.</td>
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<tr>
<td>3403.2.3</td>
<td>Seismic</td>
<td>Correlated with several sections moved from Chapter 16 to Chapter 34.</td>
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<tr>
<td>3403.2.3.1</td>
<td>Additions to existing buildings</td>
<td>Moved from Chapter 16 to more appropriately address seismic hazards in existing buildings. References are made to ASCE 7 instead of Sections 1613 through 1623. The terms cumulative since the original construction have been added to protect against the effect of incremental increases in seismic demand or decreases in seismic capacity resulting from multiple projects occurring over the life of the structure.</td>
</tr>
<tr>
<td>3403.2.3.2</td>
<td>Alterations</td>
<td></td>
</tr>
<tr>
<td>3406.4</td>
<td>Change of occupancy</td>
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<tr>
<td>3409.3</td>
<td>Extent of application</td>
<td>Relocated the section which broadened the scope to include not only alterations but additions and change of occupancy as it relates to accessibility.</td>
</tr>
<tr>
<td>3409.5</td>
<td>Additions</td>
<td>Deleted the terms “for accessible routes” from the end of the section to clarify that the intent was not just that accessible routes be provided to an addition. Additions would require full compliance for new construction.</td>
</tr>
<tr>
<td>3409.6</td>
<td>Alterations</td>
<td>Allows existing R-2 dwelling units to meet the type B dwelling unit requirements in accordance with Chapter 11 and ANSI 117.1 instead of complying with a type A unit.</td>
</tr>
<tr>
<td>3410.2.4.1</td>
<td>Flood hazard areas</td>
<td>Correlates with new section 3403.1.1 and clarifies that if the alteration and repairs are extensive in a building located in a flood hazard area, full compliance for new buildings for flood design is required.</td>
</tr>
</tbody>
</table>
1. Group R3 Occupancy (Section 310.1)
2. 4 (Table 414.2.2)
3. D (Section 404.4)
4. When they are considered a story below grade plane (Section 506.1.1)
5. B (Section 707.14.1)
6. D (Section 1002.1)
7. 35 sq. ft. net per occupant (Table 1004.1.1)
8. 10 occupants (Table 1015.1, Table 1019.2)
9. 7 sq. ft. per person of occupiable floor space (Section 1004.2)
10. 32" clear width (Section 1008.1.1). Exception 7 is not applicable to doors within Group R-1 guestrooms.
11. C (Section 1010.9)
12. No (Section 1020.1.1)
13. ICC/ANSI A117.1-2003, Chapter 10, Section 1002 (Definition for accessible unit in Section 1102.1 and Section 1107.2)
14. 50% of the drinking fountains provided in a space are required to be wheelchair accessible and the remaining 50% are required to meet standing person provisions. (Section 1109.5)
15. C
16. ASCE 7-05 (Sections 1608, 1609 and 1613)
17. 10 psf (Table 1607.1)
18. a) Materials, systems, components and work requiring special inspection or testing.
b) Inspections and testing required for seismic or wind resistance.
c) Type and extent of required inspections and tests.
d) Identify required special inspections as continuous or periodic. (Section 1705.2)
19. Chapter 1 and Appendix A of ACI 503/ASCE 5/TMS 402 and, as applicable, IBC Section 2106 seismic design requirements. (Section 2101.2.2)
20. The height-width ratio is $9.5/4 = 2.375$. This is less than 3.5 and therefore would comply with Table 2305.3.4, provided that for resistance to earthquake loading the allowable shear values are adjusted by a factor of $0.842 (2w/h)$ in accordance with footnote a. (Table 2305.3.4)
21. AF&PA NDS-05. (Section 2307.1)
International Existing Building Code

The 2006 *International Existing Building Code*® (IEBC®) encourages the use and reuse of existing buildings, while requiring reasonable upgrades and improvements. These upgrades and improvements, where applicable, are life-safety related and include the upgrading of fire protection systems, partial or complete encloosement of vertical openings, replacement of unsafe interior finishing, ensurance of adequate means of egress and improvements of accessibility and the structural system. It is important to note that the necessity of the upgrades and improvements is determined by the type and extent of the work, not the expense.

**Scope**

The IEBC applies to existing buildings that address the following:

- Repair
- Alteration
- Change of occupancy
- Addition
- Relocation

A building or portion of a building that has not been previously occupied or used for its intended purpose shall comply with the provisions of the *International Building Code®* (IBC®) for new construction.

**Test Your Knowledge**

1. List five changes from the 2003 IEBC to the 2006 IEBC.
   - __________________________
   - __________________________
   - __________________________
   - __________________________
   - __________________________

2. Explain the significance of one of the above changes.
   __________________________
   __________________________
   __________________________

**Content**

- Administration (Chapter 1)
- Definitions (Chapter 2)
- Prescriptive Compliance Alternatives (Chapter 3)
- Classification of Work (Chapter 4)
- Repairs (Chapter 5)
- Alterations-Level 1 (Chapter 6)
- Alterations-Level 2 (Chapter 7)
- Alterations-Level 3 (Chapter 8)
- Change of Occupancy (Chapter 9)
- Additions (Chapter 10)
- Historic Buildings (Chapter 11)
- Relocated or Moved Buildings (Chapter 12)
- Compliance Alternatives (Chapter 13)
- Construction Safeguards (Chapter 14)
## Code Section

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>101.3</td>
<td>NEW</td>
<td>Intent</td>
</tr>
<tr>
<td>101.4</td>
<td>NEW</td>
<td>Applicability</td>
</tr>
<tr>
<td>101.5</td>
<td>NEW</td>
<td>Compliance methods</td>
</tr>
<tr>
<td>104.2.1</td>
<td>104.2.1</td>
<td>Preliminary meeting</td>
</tr>
</tbody>
</table>

### Test Your Knowledge

3. Is the intent of the IEBC to achieve compliance with minimum requirements for a newly constructed building?

4. A building that has not been previously occupied for its intended purpose in accordance with the laws in existence at the time of its completion needs to comply with the International Fire Code® or the International Property Maintenance Code® or as deemed necessary by the code official. (True / False)

5. Are the "work area" requirements in Chapters 4 through 12 of the IEBC the stand alone requirements for the repair, alteration, change of occupancy, addition and relocation of existing buildings?

6. The code official or the permit applicant is permitted to request a preliminary meeting to discuss the plans for proposed work to an existing building as they relate to the requirements of the IEBC. (True / False)
Chapter 3: Prescriptive Compliance Alternative

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>NEW General</td>
<td>Clarified the options of compliance with Chapter 3 or with the compliance alternatives in Section 101.4.</td>
</tr>
<tr>
<td>302-308</td>
<td>NEW Additions, Alterations or Repairs</td>
<td>Added the option of compliance with Chapter 34 of the IBC for additions, alterations or repairs, fire escapes, glass replacement, change of occupancy, historic buildings, moved structures and accessibility for existing structures by adding the applicable sections of IBC Chapter 34 into IEBC new Chapter 3.</td>
</tr>
</tbody>
</table>

Chapter 4: Classification of Work (Previously Chapter 3)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.1</td>
<td>301.1 Scope</td>
<td>Added language to clarify that the scope of Chapter 4 was to identify the classification of work for use with the &quot;work area&quot; method requirements of Chapter 5 through 12 of the IEBC.</td>
</tr>
<tr>
<td>401.1.1</td>
<td>NEW Compliance with other alternatives</td>
<td>To be consistent with changes made to Sections 101.5 and with the addition of the new Chapter 3, this section again reminds the code user of the compliance alternatives.</td>
</tr>
<tr>
<td>402.3</td>
<td>NEW Related work</td>
<td>Added language to clarify the work on non-damaged components that is necessary to perform a repair is not subject to the requirements of Chapters 6 through 9.</td>
</tr>
</tbody>
</table>

Test Your Knowledge

7. What are the options available by which compliance with the IEBC can be achieved?

Test Your Knowledge

8. The classification of work described in Chapter 4 of the IEBC relates only to the requirements contained in Chapters 5 through 12. (True/False)
Chapter 6: Alterations-Level 1 (Previously Chapter 5)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>607</td>
<td>NEW</td>
<td>Energy Conservation</td>
</tr>
</tbody>
</table>

Added language to require that repairs to existing buildings comply with the energy conservation provisions of the IECC or IRC as required for new construction, yet without requiring the entire building to comply. Note that similar language has been added to Chapters 7 and 8 to extend these requirements to Level 2 and Level 3 alterations.

606.2.1 507.2.1 Addition or replacement of roofing or replacement of equipment

Added language allowing an additional layer of roof covering, weighing 3 pounds per square foot or less, to be applied over an existing single layer of roof covering without requiring the structural system supporting the roofing to comply with the vertical load requirements of the IBC.

Chapter 7: Alterations-Level 2 (Previously Chapter 6)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>705.3.1.1(2)</td>
<td>605.3.1.1(2)</td>
<td>Single-exit buildings</td>
</tr>
</tbody>
</table>

Increased the allowable floor area per floor for Group B, F-2 and S-2 occupancies from 3,000 to 3,500 square feet.

707.4.2 607.4.2 Lateral loads

Increased the maximum allowable seismic base shear increase for an Alteration Level 2 from 5 to 10 percent. Added a maximum 10 percent limitation to the allowable decrease in base seismic shear capacity. Language was also added that allowed the change in base shear to be calculated relative to the building’s current base shear capacity if it was increased since the original construction of the building.

Test Your Knowledge

9. An existing structural beam has been damaged. The most cost effective way to repair the beam is to replace it along with the connections to the adjacent columns. Since the beam is being replaced, does this fall under a Level 1 Alteration?

10. An existing office building is undergoing a Level 3 Alteration and an addition. What are the energy conservation requirements for this project?
Chapter 8: Alterations-Level 3 (Previously Chapter 7)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>802.1.2</td>
<td>Elevators</td>
<td>Added reference to ASME A17.3 for emergency operation of existing elevators and ASME A17.1 for emergency recall operation of new elevators.</td>
</tr>
<tr>
<td>804.2.1</td>
<td>Manual fire alarm systems</td>
<td>Added requirements for the installation of a manual fire alarm system throughout all work areas of a Level 2 alteration when required by the IBC.</td>
</tr>
<tr>
<td>804.2.2</td>
<td>NEW Automatic fire detection</td>
<td>Added requirements for the installation of an automatic fire detection system throughout all work areas of a Level 2 alteration when required by the IBC.</td>
</tr>
</tbody>
</table>

Test Your Knowledge

11. A two-story building of Group S-2 is undergoing an Alteration Level 2 with a work area on the second floor. The building is 3,800 square feet per floor with a travel distance of 73 feet to the single exit that currently serves the floor. The work area includes the exit and the corridors that serve the three tenants within the work area (see Figure 1). How many exits are required for this floor?

12. An Alteration Level 2 decreases the seismic base shear capacity by 15 percent when calculated relative to the conditions at the time of original construction. However, the building’s seismic base shear capacity was increased since the original construction. These calculations indicate a decrease in seismic shear capacity of 8.5 percent. Is the building required to comply with the additional structural provisions specified in Section 807.5 as referenced in Section 707.4.2?

Test Your Knowledge

13. Are emergency operation requirements different for existing elevators and new elevators installed in existing buildings?
Chapter 9: Change of Occupancy (Previously Chapter 8)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>901.2 2006</td>
<td>NEW-change in occupancy with no change of occupancy classification</td>
<td>Added requirements for changes of occupancy with no change of occupancy classification to comply with the International Codes® subject to the approval of the code official and the issuance of a certificate of occupancy for the change in occupancy.</td>
</tr>
<tr>
<td>912.1.2 2006</td>
<td>NEW-Fire protection and interior finish</td>
<td>Added requirements for fire sprinkler systems and fire alarm and detection systems for changes of occupancy to be installed where the change of occupancy occurs in accordance with the requirements of Chapter 9 of the IBC.</td>
</tr>
<tr>
<td>912.2 2006</td>
<td>NEW-Fire protection systems</td>
<td></td>
</tr>
<tr>
<td>912.2.1 2006</td>
<td>NEW-Fire sprinkler system</td>
<td></td>
</tr>
<tr>
<td>912.2.2 2006</td>
<td>NEW-Fire alarm and detection system</td>
<td></td>
</tr>
<tr>
<td>912.5.1 2006</td>
<td>812.4.2.1-Height and area for change to higher hazard category</td>
<td>Deleted the exception. A one story building changed from Group B, F-2, S-2, A5, R-3 or U (hazard level 4) to a Group E (hazard level 3) shall be required to meet the area requirements of the IBC.</td>
</tr>
</tbody>
</table>

Test Your Knowledge

15. An existing nonsprinklered Group A-2 nightclub has a posted occupant load of 275. The owner simply wants to increase his occupant load to 325.

1a. Does this result in a change of occupancy with no change in occupancy classification as described by the IIBC?

1b. Does this space require an automatic fire sprinkler system based on the proposed increase in occupant load?
Chapter A5: Earthquake Hazard Reduction in Existing Concrete Buildings and Concrete with Masonry Infill Buildings

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A505.2.3</td>
<td>Partially grouted masonry</td>
<td>Replaced UBC standard 21-4 with ASTM C90-2003 for testing of partially grouted masonry units.</td>
</tr>
<tr>
<td>A506.1</td>
<td>Site ground motion for Tier 1 analysis</td>
<td>Added reference to ASCE 31 Tier 1, Screening Phase to indicated conformance to Chapter A5.</td>
</tr>
<tr>
<td>A507.1</td>
<td>General</td>
<td></td>
</tr>
</tbody>
</table>

Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would include:
   - Intent is added to the IEBC provisions (Section 101.3).
   - Language is added to clarify the work on non-damaged components that is necessary to perform a repair is not subject to the requirements of Chapters 6 through 9 (Section 402.3).
   - Allowable floor area per floor is increased for Group B, F-2 and S-2 occupancies from 3,000 to 3,500 square feet (Section 705.3.1.1).
   - Reference is added to A SM E A17.3 for emergency operation of existing elevators and A SM E A17.1 for emergency recall operation of new elevators (Section 802.1.2).
   - Requirements are added for the installation of a manual fire alarm system throughout all work areas of a level 2 alteration when required by the IBC (Section 804.2.1).

2. Answer will vary. For example, an acceptable answer would be:
   - Intent was added to the IEBC provisions in Section 101.3 to make consistent with other I-Codes.

3. No. The IEBC intends to provide flexibility to achieve compliance with minimum requirements to safeguard the public as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings. (see Section 101.3)

4. False. The building described above would need to comply with the IBC or International Residential Code® (IRC®) as applicable or with any current permit with such occupancy. (see Section 101.4.1)

5. No. Exclusive of compliance with the exception to Section 101.5, Section 101.5 contains three methods of achieving compliance with the IEBC; prescriptive compliance (Chapter 3), work area compliance (Chapters 4 through 12) or performance compliance (Chapter 13).
6. True. (Section 104.2.1)

7. a. Compliance with Chapter 3 of the IEBC.
   b. Compliance with Chapter 4 through 12 of the IEBC
   c. Compliance with Chapter 13 of the IEBC
   d. Alterations complying with the laws in existence when the building or portion thereof was built unless the building has sustained substantial structural damage, the work is beyond a limited structural alteration or the alteration is in a flood hazard area.

8. True. Chapters 3 and 13 are compliance alternatives to the methods contained in Chapters 5 through 12.

9. No. The need for the work is based on damage to the structural member and is therefore classified as a repair. Section 402.1 allows component replacement as a method of repair to a damaged component.

10. In accordance with Sections 808.1 and 1006.1 the entire work area of the alteration and the entire addition are subject to the requirements of the International Energy Conservation Code® (IECC®).

11. Two exits are required. Although the building occupancy, height and travel distance are within the thresholds of Section 705.3.1.1, No. 2, for a building with one exit, the square footage of the floor exceeds that allowed in that same Section.

12. No. The maximum allowable seismic base shear capacity decrease for an Alteration Level 2 is 10 percent. If the building's seismic base shear capacity has been increased since the building's original construction, the exception to Section 707.4.2 allows this capacity to be used in the calculation that determines the percentage change. Therefore, the capacity decrease is 8.5 percent and the structural provisions are not required.

13. Yes. ASME A17.3 is referenced in Section 802.1.2 for emergency operation of existing elevators and ASME A17.1 is referenced in the same section for emergency recall operation of new elevators.

14. Yes. Section 804.2.1 requires a manual alarm system to be installed throughout the work area if the system is required by the IBC. Section 907.2.7 of the IBC requires the system because the building is non-sprinklered and has an occupant load of more than 100 persons above the level of exit discharge.

15. 1a. Yes. The increase in occupant load is considered a change in occupancy without a change in occupancy classification.
   1b. Yes. In accordance with Section 901.2 special provisions of the applicable International Code are applicable to a change of occupancy with no change in occupancy classification. Under the new construction requirements of the IBC and the IFC this space would now be required to be sprinklered.

16. Yes. (See Sections 912.2.1 and 912.2.2)
International Residential Code

It is important to have an up-to-date residential construction code addressing the design and construction of one- and two-family dwellings and townhouses to protect the health and safety of the public as well as provide affordable housing.

There have been significant changes made to the International Residential Code® (IRC®), since the 2003 edition. This handout highlights many of the differences between the 2003 and 2006 editions.

Scope

The scope of the IRC encompasses detached one- and two-family dwellings and townhouses not more than three stories in height and shall apply to the following:

- Construction
- Alteration
- Movement
- Enlargement
- Replacement
- Repair
- Equipment
- Use and occupancy
- Location
- Removal and demolition

The scope of the International Building Code® (IBC®) requires compliance with the IRC.

Test your knowledge

1. List five changes from the 2003 IRC to the 2006 IRC.
   - 
   - 
   - 
   - 
   - 

2. Explain the significance of one of the above changes.
   - 
   - 
   - 

Content

- Administration (Chapters 1-2)
- Building Provisions (Chapters 3-10)
- Energy (Chapter 11)
- Mechanical (Chapters 12-23)
- Fuel Gas (Chapter 24)
- Plumbing (Chapters 25-32)
- Electrical (Chapters 33-42)
### Chapter 1: Administration

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R101.2</td>
<td>Scope</td>
<td>The scope of the IRC has been rewritten to specifically apply to structures not more than 3 stories above-grade. In a separate action, the language that referred to multiple single family dwellings has been removed from this section; however, townhouses still fall within the scope of the IRC. The exception under this section for existing buildings handled under the IEBC was deleted.</td>
</tr>
<tr>
<td>R105.2</td>
<td>Work exempt from permit</td>
<td>Three items in the list that do not require permits have been changed. <em>Item #1:</em> one-story accessory structures now has some specific examples listed to include tool, storage sheds and playhouses. <em>Item #5:</em> everything beyond “sidewalks and driveways has been deleted. <em>Item #8:</em> accessory to a one- or two-family has been deleted.</td>
</tr>
<tr>
<td>R105.3.1.1</td>
<td>Determination of substantially improved or substantially damaged existing buildings in flood hazard areas</td>
<td>The Code Correlation Committee made a minor change to the title of this section.</td>
</tr>
<tr>
<td>R106.1.3</td>
<td>Information for construction in flood hazard areas</td>
<td>Title change and minor rewording of code section for clarity.</td>
</tr>
<tr>
<td>R106.3.1</td>
<td>Approval of construction documents</td>
<td>Added new text to specifically require that approved plans be submitted in accordance with R106.3.1.</td>
</tr>
<tr>
<td>R109.1.1</td>
<td>Foundation inspection</td>
<td>Minor change which adds the word “supported” to the charging statement.</td>
</tr>
<tr>
<td>R109.1.5.2</td>
<td>Reinforced masonry, insulating concrete form (ICF) and conventionally formed concrete wall inspection</td>
<td>This new section requires inspection of reinforced masonry and ICF wall systems after plumbing, mechanical and electrical systems have been embedded within the walls prior to the placement of grout or concrete.</td>
</tr>
<tr>
<td>R110.1</td>
<td>Use and occupancy</td>
<td>Added new Exception #2 for accessory buildings and structures.</td>
</tr>
<tr>
<td>R110.3</td>
<td>Certificate issued</td>
<td>New language added to address nonrequired sprinkler systems.</td>
</tr>
</tbody>
</table>

### Chapter 2: Definitions

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R202</td>
<td>APPROVED</td>
<td>Completely rewritten. It now states “Acceptable to the building official.”</td>
</tr>
<tr>
<td>R202</td>
<td>ACCESSORY STRUCTURE</td>
<td>Completely rewritten. The old definition restriction to not more that three stories has been reduced to not more than two stories. In addition, accessory structures are limited to not greater than 3,000 square feet.</td>
</tr>
<tr>
<td>R202</td>
<td>BRANCH INTERVAL</td>
<td>This definition has been rewritten. A vertical measurement of distance, 8 feet (2,428 mm) or more in developed length, between the connections of horizontal branches to a drainage stack. Measurements are taken down the stack from the highest horizontal branch connection.</td>
</tr>
<tr>
<td>R202</td>
<td>FIRE SEPARATION DISTANCE</td>
<td>There is no technical change to this section; however, it has been reformatted to bring clarity to the definition.</td>
</tr>
<tr>
<td>R202</td>
<td>FOAM BACKER BOARD</td>
<td>New definition. Foam plastic is used in siding applications where the foam plastic is a component of the siding.</td>
</tr>
</tbody>
</table>

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2
## Chapter 2: Definitions

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R202</td>
<td>NEW FOAM PLASTIC INTERIOR TRIM</td>
<td>New definition. Exposed foam plastic used as picture molds, chair rails, crown moldings, baseboards, handrails, ceiling beams, door trim and window trim and similar decorative or protective materials used in fixed applications.</td>
</tr>
<tr>
<td>R202</td>
<td>NEW GRIDDED WATER DISTRIBUTION SYSTEM</td>
<td>New definition. A water distribution system where every water distribution pipe is interconnected so as to provide two or more paths to each fixture supply pipe.</td>
</tr>
</tbody>
</table>
| R202         | NEW NATURALLY DURABLE WOOD | New definition. The heartwood of the following species:  
- Decay-resistant redwood,  
- Cedars,  
- Black locust, and  
- Black walnut.  
This definition adds the black walnut species to the species that historically been listed in Section R319. |
| R202         | NEW PRE-CAST CONCRETE | New definition. A structural concrete element cast elsewhere than its final position in the structure. |
| R202         | R202 THERMAL ISOLATION | This definition was completely rewritten. It now reads: Physical and space conditioning separation from conditioned space(s). The conditioned space(s) shall be controlled as separate zones for heating and cooling or conditioned by separate equipment. |
| R202         | NEW VEHICULAR ACCESS DOOR | New definition. A door that is used primarily for vehicular traffic at entrances of buildings such as garages, loading docks, parking lots, factories, and industrial plants and that is not generally used for pedestrian traffic. |
| R202         | NEW VINYL SIDING | New definition. A shaped material, made principally from rigid polyvinyl chloride (PVC), that is used to cover exterior walls of buildings. |
| R202         | NEW WALL, RETAINING | New definition. A wall not laterally supported at the top that resists lateral soil load and other imposed loads. |
| R202         | NEW WATER-RESISTIVE BARRIER | New definition. A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly. |

## Chapter 3: Building Planning

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R301.1</td>
<td>R301.1 Application</td>
<td>Revised title to make it consistent with other similar sections of the code. Additionally, there has been a change to the charging text clarifies that helps to clarify that a structure built to the provisions of the <em>International Residential Code</em> meets the basic requirements for the transference of the loads to the foundation.</td>
</tr>
<tr>
<td>R301.2.1.1</td>
<td>R301.2.1.1 Design criteria</td>
<td>New language has been added to this section that specifically includes hurricane-prone regions with wind speed equal to or exceeding 100 mph.</td>
</tr>
<tr>
<td>R301.2.1.3</td>
<td>R301.2.1.3 Wind Speed conversion</td>
<td>The proper symbols $V_{3s}$ for 3-second gust and $V_{fm}$ for fastest mile have been inserted into Section R301.2.1.3 and Table R301.2.1.3.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>Table R301.2.1.3</td>
<td>Equivalent Basic Wind Speeds</td>
<td>Equivalent basic wind speeds have been adjusted to properly reflect the conversion between a 3-second gust and the fastest mile measurement. The values have been changed in the conversion table to more accurately reflect the values in ASCE 7-05 (see Table R301.2.1.3 below).</td>
</tr>
<tr>
<td>R301.2.2</td>
<td>Seismic provisions</td>
<td>This change clarifies the currently permitted exceptions to the seismic weight limits of construction materials.</td>
</tr>
<tr>
<td>Figure R301.2(2)</td>
<td>Seismic Design Categories Maps</td>
<td>Existing seismic maps were revised to make them compatible with those used in the IBC and ASCE 7. These new maps show improved local information on seismic risk for many regions of the United States to include new maps for Puerto Rico.</td>
</tr>
<tr>
<td>R302</td>
<td>Exterior Wall Location</td>
<td>Revised section title from “Location on Lot” to “Exterior Wall Location.” The section was rewritten for the purpose of clarifying the requirements. The new language is also helped by the new Table R302.1.</td>
</tr>
<tr>
<td>Table R302.1</td>
<td>Exterior Walls</td>
<td>This new table covers the multiple aspects of exterior walls which include; walls, projections, openings and penetrations, and helps a person easily ascertain how all these aspects of Section 302 relate to each other (see Table R302.1 below).</td>
</tr>
<tr>
<td>R303.6.1</td>
<td>Light activation</td>
<td>This section has been changed and adds a new switch requirement to support lighting outlets on interior stairways of six or more risers.</td>
</tr>
<tr>
<td>R305.1</td>
<td>Minimum height</td>
<td>The third exception to the section on ceiling height has been rewritten. The new language helps to clarify how to properly calculate ceiling height for spaces with sloped roofs.</td>
</tr>
<tr>
<td>R308.1</td>
<td>Identification</td>
<td>Revisions made to this section reflect the deletion of the term “label” and the effort to properly identify glazing.</td>
</tr>
<tr>
<td>R308.3</td>
<td>Human impact loads</td>
<td>Removed the exception for polished wire glass and makes this section consistent with language in the IBC.</td>
</tr>
<tr>
<td>R308.4</td>
<td>Hazardous locations</td>
<td>There has been a change to Exception #4 to areas considered to be hazardous locations for the purposes of glazing. New language has been added that takes “the wall towards which the door swings when opened” out of the exception. When a door swings open to a perpendicular wall with glazing within 24”, it is possible that the door could slam into the wall and break the glass or the door knob could impact the glass and break it. One new exception has been added for glass block panels.</td>
</tr>
<tr>
<td>R309.1.2</td>
<td>Other penetrations</td>
<td>This section permits items to penetrate the common wall between the house and garage if the annular space is then filled with an approved material to resist the free passage of flame and the products of combustion.</td>
</tr>
<tr>
<td>R310.1</td>
<td>Emergency escape and rescue required</td>
<td>Added new language to this section that requires emergency escape and rescue openings to open directly into a public street, alley, yard or court. In addition, where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement.</td>
</tr>
<tr>
<td>R310.1.4</td>
<td>Operational constraints</td>
<td>Added the words “special knowledge” to these sections. Therefore, the openings and bars, grills, covers and screens must be operational or removable without the use of a key, tools or special knowledge.</td>
</tr>
<tr>
<td>R310.4</td>
<td>Bars, grills, covers and screens</td>
<td>The landings provisions have been reworded and now clearly allows for a single step down landing at the primary exterior exit door while recognizing a two step entry at other exterior doors.</td>
</tr>
<tr>
<td>R311.4.3</td>
<td>Landings at doors</td>
<td>This code change resulted in the maximum allowable ramp slope to be changed from one unit vertical in eight units horizontal to one unit vertical in twelve units horizontal.</td>
</tr>
</tbody>
</table>
### Chapter 3: Building Planning

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R313</td>
<td>R313</td>
<td>Smoke Alarms</td>
<td>This code change removes the requirement that smoke alarms be audible in bedrooms over background noise. When this provision was originally placed into the code, the requirement for smoke alarms in each bedroom was not a requirement, which made this language necessary. Now that smoke alarms are required in each bedroom, the text was no longer needed.</td>
</tr>
<tr>
<td>R313.2.1</td>
<td>R313.1.1</td>
<td>Alterations, repairs and additions</td>
<td>Added new language to the exception to make it clear that work on the exterior of a dwelling to include reroofing, siding, replacement windows or doors, or the addition of a porch or deck do not require the installation of smoke alarms.</td>
</tr>
<tr>
<td>R314</td>
<td>R314</td>
<td>Foam Plastic</td>
<td>This entire section on foam plastic has been rewritten and reorganized. This helped to improve the clarity and organization of the requirements for utilizing foam plastics in structures covered under the scope of the IRC. Two new definitions were added for Foam Backer Board and Foam Plastic Interior Trim.</td>
</tr>
<tr>
<td>R314.5.9</td>
<td>R314.2.6</td>
<td>Interior trim</td>
<td>This changes the restriction for interior trim from not more than 10% of the area of any wall or ceiling to not more than 10% of the aggregate wall and ceiling area of any room or space.</td>
</tr>
<tr>
<td>R317.2.1</td>
<td>R317.2.1</td>
<td>Continuity</td>
<td>This section has been rewritten to clarify the continuous separation requirements of townhouses by a fire-resistance-rated wall or assembly. It makes it clear that a simple continuous common wall is not sufficient to meet the requirements of this section.</td>
</tr>
<tr>
<td>R319.1</td>
<td>R319.1</td>
<td>Location required</td>
<td>Black walnut has been added to the list of wood species that are naturally resistant to decay.</td>
</tr>
<tr>
<td>R319.1.4</td>
<td>R319.1.4</td>
<td>Wood columns</td>
<td>Minor change to remove the word “cellars” from the text. The term cellar was not defined and the word basement still includes these types of spaces.</td>
</tr>
<tr>
<td>R323</td>
<td>NEW</td>
<td>Elevators and Platform Lifts</td>
<td>This new section provides guidance for these pieces of equipment that will allow them to meet safety standards.</td>
</tr>
</tbody>
</table>

### Table R301.2.1.3

<table>
<thead>
<tr>
<th>3-second gust, (V_{3s})</th>
<th>85</th>
<th>90</th>
<th>100</th>
<th>105</th>
<th>110</th>
<th>120</th>
<th>125</th>
<th>130</th>
<th>140</th>
<th>145</th>
<th>150</th>
<th>160</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fastest mile, (V_{fm})</td>
<td>71</td>
<td>76</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>104</td>
<td>109</td>
<td>114</td>
<td>123</td>
<td>128</td>
<td>133</td>
<td>142</td>
<td>152</td>
</tr>
</tbody>
</table>

For SI: 1 mile per hour = 0.447 m/s.

a. Linear interpolation is permitted.
<table>
<thead>
<tr>
<th>EXTERIOR WALL ELEMENT</th>
<th>MINIMUM FIRE-RESISTANCE RATING</th>
<th>MINIMUM FIRE SEPARATION DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Fire-resistance rated)</td>
<td>1 hour with exposure from both sides</td>
<td>0 feet</td>
</tr>
<tr>
<td>(Not fire-resistance rated)</td>
<td>0 hours</td>
<td>5 feet</td>
</tr>
<tr>
<td>Projections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Fire-resistance rated)</td>
<td>1 hour on the underside</td>
<td>4 feet</td>
</tr>
<tr>
<td>(Not fire-resistance rated)</td>
<td>0 hours</td>
<td>5 feet</td>
</tr>
<tr>
<td>Openings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not allowed</td>
<td>N/A</td>
<td>&lt; 3 feet</td>
</tr>
<tr>
<td>25% Maximum of Wall Area</td>
<td>0 hours</td>
<td>3 feet</td>
</tr>
<tr>
<td>Unlimited</td>
<td>0 hours</td>
<td>5 feet</td>
</tr>
<tr>
<td>Penetrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>Comply with Section R317.3</td>
<td>&lt; 5 feet</td>
</tr>
<tr>
<td></td>
<td>None required</td>
<td>5 feet</td>
</tr>
</tbody>
</table>

N/A = Not Applicable
<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R401.3</td>
<td>Drainage</td>
<td>Added text that requires a 5% slope away from the foundation and requires a 2% slope for swales and impervious surfaces within 10 feet of the foundation.</td>
</tr>
<tr>
<td>Table R402.2</td>
<td>Minimum Specified Compressive Strength of Concrete</td>
<td>Added Footnote “t” to permit a reduction of the total air content when a steel trowel finish is to be provided for garage floors.</td>
</tr>
<tr>
<td>R403.1.4.1</td>
<td>Frost protection</td>
<td>Exception 1 has been revised to exempt freestanding accessory structures of light-frame construction with an area of 600 square feet from frost protection.</td>
</tr>
<tr>
<td>R403.1.6</td>
<td>Foundation anchorage</td>
<td>Exceptions 2 and 3 have been added to address anchorage for wall length of 24 inches or shorter.</td>
</tr>
<tr>
<td>R404.1</td>
<td>Concrete and masonry foundation walls</td>
<td>Added requirements for lateral support at the top and bottom of foundation walls with unbalanced backfill as follows: • Requires a 3.5 inch thick concrete floor at the bottom. • Requires connection at top in accordance with new Table R404.1(1). • Requires anchor bolt spacing in accordance with new Table R404.1(2). • Requires blocking of floor joists. • Requires maximum building aspect ratio in accordance with new Table R404.1(3).</td>
</tr>
<tr>
<td>Table R404.1(1)</td>
<td>Top Reactions and Prescriptive Support for Foundation Walls</td>
<td>[See attached Tables R404.1(1), R404.1(2) and R404.1(3).]</td>
</tr>
<tr>
<td>Table R404.1(2)</td>
<td>Maximum Plate Anchor-Bolt Spacing for Supported Foundation Wall</td>
<td></td>
</tr>
<tr>
<td>Table R404.1(3)</td>
<td>Maximum Aspect Ratio, L/W for Unbalanced Foundations</td>
<td></td>
</tr>
<tr>
<td>Table R404.1(1)</td>
<td>Plain Masonry Foundation Walls</td>
<td>Deleted the plain concrete minimum nominal wall thickness. New table R404.1.1(5) contains the plain concrete wall thicknesses.</td>
</tr>
<tr>
<td>Table R404.1(5)</td>
<td>Concrete Foundation Walls</td>
<td>This table is for both plain and reinforced concrete foundation walls. It allows a wall height of 10 feet. The thickness is minimums of 5.5, 7.5, 9.5 and 11.5 inches [see attached Table R404.1.1(5)].</td>
</tr>
<tr>
<td>R404.4.1</td>
<td>Applicability limits</td>
<td>Revised to provide reinforcing requirements for ICF foundation walls supporting above grade concrete walls.</td>
</tr>
<tr>
<td>R404.4.2</td>
<td>Flat insulating concrete form wall systems</td>
<td>Revised to permit 7.5 inch and 9.5 inch flat ICF walls to comply with new Table R404.1.1(5).</td>
</tr>
<tr>
<td>R404.5</td>
<td>Retaining walls</td>
<td>Designates when a wall is a retaining wall and provides specific design criteria.</td>
</tr>
<tr>
<td>R406.2</td>
<td>Concrete and masonry foundation waterproofing</td>
<td>Revised to provide additional waterproofing options as follows: • 60-mil flexible polymer cement, • 1/8 inch cement-based, fiber-reinforced coating, • 8.60-mil solvent-free liquid-applied synthetic rubber.</td>
</tr>
<tr>
<td>R408.2</td>
<td>Openings for under-floor ventilation</td>
<td>Deleted the exceptions.</td>
</tr>
<tr>
<td>R408.3</td>
<td>Unvented crawl space</td>
<td>New section adds requirements for unvented crawl space.</td>
</tr>
</tbody>
</table>
### TABLE R404.1(1)
**TOP REACTIONS AND PRESCRIPTIVE SUPPORT FOR FOUNDATION WALLS**

<table>
<thead>
<tr>
<th>MAXIMUM WALL HEIGHT (feet)</th>
<th>MAXIMUM UNBALANCED BACKFILL HEIGHT (feet)</th>
<th>HORIZONTAL REACTION TO TOP (plf)</th>
<th>Soil Classes (Letter indicates connection types)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GW, GP, SW and SP soils</td>
<td>GM, GC, SM-SC and ML soils</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45.7 A</td>
<td>68.6 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>89.3 A</td>
<td>133.9 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>154.3 B</td>
<td>231.4 C</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>245.0 C</td>
<td>367.5 C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40.0 A</td>
<td>60.0 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>78.1 A</td>
<td>117.2 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>135.0 B</td>
<td>202.5 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>214.0 B</td>
<td>321.6 C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>320.0 C</td>
<td>480.0 C</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>35.6 A</td>
<td>53.3 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>69.4 A</td>
<td>104.2 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120.0 B</td>
<td>180.0 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>190.6 B</td>
<td>285.8 C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>284.4 C</td>
<td>426.7 C</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>405.0 C</td>
<td>607.5 D</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm, 1 pound = 0.454 kg, 1 plf = pounds per linear foot = 1.488 kg/m.

**a.** Loads are pounds per linear foot of wall. Prescriptive options are limited to maximum joist and blocking spacing of 24 inches on center.

**b.** Prescriptive Support Requirements:

<table>
<thead>
<tr>
<th>Type</th>
<th>Joist/blocking Attachment Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3-8d per joist per Table R602.3(1).</td>
</tr>
<tr>
<td>B</td>
<td>1-20 gage angle clip each joist with 5-8d per leg.</td>
</tr>
<tr>
<td>C</td>
<td>1-$\frac{1}{2}$-inch thick steel angle. Horizontal leg attached to sill bolt adjacent to joist/blocking, vertical leg attached to joist/blocking with $\frac{1}{2}$-inch minimum diameter bolt.</td>
</tr>
<tr>
<td>D</td>
<td>$\frac{1}{2}$-inch thick steel, angles, one on each side of joist/blocking. Attach each angle to adjacent sill bolt through horizontal leg. Bolt to joist/blocking with $\frac{1}{2}$-inch minimum diameter bolt common to both angles.</td>
</tr>
</tbody>
</table>
TABLE R404.1(2)
MAXIMUM PLATE ANCHOR-BOLT SPACING FOR SUPPORTED FOUNDATION WALLa

<table>
<thead>
<tr>
<th>MAXIMUM WALL HEIGHT (feet)</th>
<th>MAXIMUM UNBALANCED BACKFILL HEIGHT (feet)</th>
<th>ANCHOR BOLT SPACING (inches)</th>
<th>Soil Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GW, GP, SW and SP soils</td>
<td>GM, GC, SM-SC and ML soils</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>72</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>72</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>51</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>72</td>
<td>72</td>
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<tr>
<td></td>
<td>5</td>
<td>57</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>33</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>10</td>
<td>7</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Spacing is based on 1/2-inch diameter anchor bolts. For 5/8-inch diameter anchor bolts, spacing may be multiplied by 1.27, with a maximum spacing of 72 inches.

TABLE R404.1(3)
MAXIMUM ASPECT RATIO, L/W FOR UNBALANCED FOUNDATIONS

<table>
<thead>
<tr>
<th>MAXIMUM WALL HEIGHT (feet)</th>
<th>MAXIMUM UNBALANCED BACKFILL HEIGHT (feet)</th>
<th>SOIL CLASSES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GW, GP, SW and SP soils</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>1.9</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.4</td>
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<tr>
<td></td>
<td>7</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>1.4</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4.0</td>
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<tr>
<td></td>
<td>6</td>
<td>3.8</td>
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<tr>
<td></td>
<td>7</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>1.1</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.
### TABLE R404.1.1(5) CONCRETE FOUNDATION WALLS

<table>
<thead>
<tr>
<th>Maximum Wall Height (feet)</th>
<th>Minimum Vertical Reinforcement Size and Spacing&lt;sup&gt;g, i, j, k&lt;/sup&gt;</th>
<th>Soil classes&lt;sup&gt;a&lt;/sup&gt; and design lateral soil (psf per foot of depth)</th>
<th>Minimum Wall Thickness (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GW, GP, SW and SP 30</td>
<td>GM, GC, SM, SM-SC and ML 45</td>
<td>SC, ML-CL and inorganic CL 60</td>
</tr>
<tr>
<td></td>
<td>5.5</td>
<td>7.5</td>
<td>9.5</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>PC</td>
<td>PC</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>PC</td>
<td>PC</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>PC</td>
<td>PC</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>PC</td>
<td>PC</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>PC</td>
<td>PC</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>PC</td>
<td>PC</td>
</tr>
</tbody>
</table>

<sup>a</sup> Soil classes are in accordance with the United Soil Classification System. Refer to Table R405.1.

<sup>b</sup> Soil backfill height shall be measured from the exterior finish ground level to the top of the interior concrete slab.

<sup>c</sup> The size and spacing of vertical reinforcement shown in the table is based on the use of reinforcement with a minimum yield strength of 60,000 psi. Vertical reinforcement with a minimum yield strength of 40,000 psi or 50,000 psi is permitted, provided the same size bar is used and the spacing shown in the table is reduced by multiplying the spacing by 0.67 or 0.83, respectively.

<sup>d</sup> Vertical reinforcement, when required, shall be placed nearest the inside face of the wall a distance d from the outside face (soil side) of the wall. The distance d is equal to the wall thickness, t, minus 1.25 inches plus one-half the bar diameter, db (d = t - (1.25 + db/2). The reinforcement shall be placed within a tolerance of ± 1/4 inch where d is less than or equal to 8 inches, or ± 1/2 inch where d is greater than 8 inches.

<sup>e</sup> In lieu of the reinforcement shown, smaller reinforcing bar sizes and closer spacings resulting in an equivalent cross-sectional area of reinforcement per linear foot of wall are permitted.

<sup>f</sup> Concrete cover for reinforcement measured from the inside face of the wall shall not be less than 3/4 inch. Concrete cover for reinforcement measured from the outside face of the wall shall not be less than 1 1/2 inches for No. 5 bars and smaller, and not less than 2 inches for larger bars.

<sup>g</sup> The minimum thickness is permitted to be reduced 2 inches, provided the minimum specified compressive strength of concrete, $f'_c$, is 4,000 psi.

<sup>h</sup> A plain concrete wall with a minimum thickness of 11.5 inches is permitted, provided minimum specified compressive strength of concrete, $f'_c$, is 3,500 psi.

<sup>i</sup> Concrete shall have a specified compressive strength of not less than 2,500 psi at 28 days, unless a higher strength is required by note g or h.

<sup>j</sup> “DR” means design is required in accordance with ACI 318 or ACI 332.

<sup>k</sup> “PC” means plain concrete.
## Chapter 5: Floors

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R502.1.6</td>
<td>NEW Structural log members</td>
<td>Added referenced standard to establish stresses for structural log members.</td>
</tr>
<tr>
<td>R502.2.1</td>
<td>NEW Framing at braced wall lines</td>
<td>This new section has given direction for providing blocking of the floor framing at braced wall lines.</td>
</tr>
<tr>
<td>Table R502.5(1)</td>
<td>Table R502.5(1) Girder Spans and Header Spans for Exterior Bearing Walls</td>
<td>This table has been revised to add a column of spans for a ground snow load of 70 psf.</td>
</tr>
<tr>
<td>R502.8.2</td>
<td>R502.8.2 Engineered wood products</td>
<td>Added the requirement that cuts, notches and bored holes are not permitted unless allowed by the manufacturer's recommendation or by a registered design professional.</td>
</tr>
<tr>
<td>R502.11.2</td>
<td>R502.11.2 Bracing</td>
<td>This section has been revised to reference the current Guide For Truss Bracing (BCSI 1-03). The Guide HIB-91 is no longer produced.</td>
</tr>
<tr>
<td>R505.1.1</td>
<td>R505.1.1 Applicability limits</td>
<td>Revised the Prescriptive Building Design from 36 feet in width to 40 feet in width.</td>
</tr>
<tr>
<td>R505.1.3</td>
<td>NEW Floor trusses</td>
<td>This new section requires floor trusses to be in accordance with the AISI Standard for Cold-formed Steel Framing-truss Design.</td>
</tr>
<tr>
<td>R505.3.2</td>
<td>R505.3.2 Allowable joist spans</td>
<td>This section has been revised to replace the span tables to reflect the change in the Prescriptive Building width from 36 feet to 40 feet and to add blocking requirements for floor framing at interior bearing supports.</td>
</tr>
<tr>
<td>R505.3.6</td>
<td>R505.3.6 Hole patching</td>
<td>Added criteria for when a member must be replaced or an engineered design is required.</td>
</tr>
<tr>
<td>R506.2.4</td>
<td>NEW Reinforcement support</td>
<td>Where reinforcement is provided, this section specifies the criteria for placing the reinforcement.</td>
</tr>
</tbody>
</table>

## Test your knowledge

3. **What standard is to be used for stress grading of structural log members?**

---

## Chapter 6: Wall Construction

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R602.1.3</td>
<td>NEW Structural log members</td>
<td>Added referenced standard to establish stresses for structural log members.</td>
</tr>
<tr>
<td>Table R602.3(1)</td>
<td>Table R602.3(1) Fastener Schedule for Structural Members</td>
<td>Revised footnote “i” to eliminate the requirement to provide framing and blocking at roof plane perimeters for the express purpose of providing roof sheathing edge nailing. Fastening at required blocking is mandatory. The length and shank diameter is listed along with the pennyweight for each fastener.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>Table R602.3(2)</td>
<td>Alternate Attachments</td>
<td>Revised the on-center spacing of fasteners so that the withdrawal strength of the assembly using the alternate is at least as strong as the fasteners in Table R602.3(1).</td>
</tr>
<tr>
<td>R602.8</td>
<td>Fireblocking required</td>
<td>Added the requirement to fireblock at openings around cables and wires.</td>
</tr>
<tr>
<td>Figure R602.10.5(1)</td>
<td>Typical Exterior Corner Framing for Continuous Structural Panel Sheathing; Showing Required Stud-to-Stud Nailing</td>
<td>Revised the stud to stud nailing from two rows of 16d nails at 24 inches on center to one row of 16d nails at 12 inches on center. A note that other corner stud orientations are permitted has been added.</td>
</tr>
<tr>
<td>R602.10.6.1</td>
<td>Alternate braced wall panels</td>
<td>Revised to add wider, up to 3'-6&quot;, and taller, up to 12 feet, alternate braced wall panel in Seismic Design Categories A, B, and C and wind speed less than 110 mph (see attached Table R602.10.6).</td>
</tr>
<tr>
<td>Table R602.10.6</td>
<td>Minimum Widths and Tie-Down Forces of Alternate Braced Wall Panels</td>
<td>Added an additional alternate bracing method (portal frame) to use adjacent to a window or door opening for opening width of 6 feet to 18 feet. Permits alternate panel width of 16 inches for a one-story building and 24 inches for the first story of a two-story building (see attached Figure R602.10.6.2).</td>
</tr>
<tr>
<td>R602.10.8</td>
<td>Connections</td>
<td>Revised to add requirements for blocking at a floor above a braced wall line. Added provisions for framing when a braced wall line is parallel to joists.</td>
</tr>
</tbody>
</table>
| R603.1.1 | Applicability limits | Revised the Prescriptive Building Design from 36 feet in width to 40 feet in width. Revised Section R603 throughout, due to building width change, to include:  
• Revised stud tables.  
• Revised header span tables.  
• Revised jack/king stud table for size of opening of up to 18 feet.  
• Added provisions and table for head track spans. |
| R606.4.1 | Bearing on support | Each masonry wythe to be supported by at least 2/3 of the wythe thickness is now required. |
| Table R611.2 | Requirements for ICF Walls | Added a footnote that permits 4.5-inch thick flat ICF wall for use in Seismic Design Categories A, B, and C. |
| R611.7.1.2 | Vertical steel | Revised the requirement that all vertical steel in the top story terminates with a hook. The hook termination is only required where the design wind pressure is 40 psf or in Seismic Design Category C, D0, D1, and D2. |
| R613.1 | General | Added the requirement that the window manufacturer provide installation instructions and that windows be installed and flashed in accordance with the instructions. |
| R613.2 | Window sills | Added the requirement that the lowest part of clear opening of the window shall be 24 inches above the finish floor when located more than 72 inches above the finished grade or surface below. |
| R613.4 | Testing and labeling | Added the requirement that exterior side hinged doors be tested and labeled in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 or ASTM E 330. |
| R613.5 | Vehicular access door | Added the requirement that vehicular access doors (garage doors) be tested in accordance with ASTM E 330 or ANSI/DASMA 108. |
TABLE R602.10.6
MINIMUM WIDTHS AND TIE-DOWN FORCES OF ALTERNATE BRACED WALL PANELS

<table>
<thead>
<tr>
<th>SEISMIC DESIGN CATEGORY AND WINDSPEED</th>
<th>TIE-DOWN FORCE (lb)</th>
<th>HEIGHT OF BRACED WALL PANEL</th>
<th>SHEATHED WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 ft. 2' - 4&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 ft. 2' - 8&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 ft. 2' - 8&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11 ft. 3' - 2&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12 ft. 3' - 6&quot;</td>
</tr>
<tr>
<td>SDC A, B, and C</td>
<td>R602.10.6.1, Item 1</td>
<td>1800</td>
<td>1800</td>
</tr>
<tr>
<td>Windspeed &lt; 110 mph</td>
<td>3000</td>
<td>1800</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>R602.10.6.1, Item 2</td>
<td>1800</td>
<td>1800</td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td>3000</td>
<td>3300</td>
</tr>
<tr>
<td>SDC D₀, D₁, and D₂</td>
<td>R602.10.6.1, Item 1</td>
<td>1800</td>
<td>1800</td>
</tr>
<tr>
<td>Windspeed &lt; 110 mph</td>
<td>3000</td>
<td>1800</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>R602.10.6.1, Item 2</td>
<td>1800</td>
<td>1800</td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td>3000</td>
<td>3300</td>
</tr>
</tbody>
</table>

Note a: Not permitted because maximum height is 10 feet.

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

FIGURE R602.10.6.2
ALTERNATE BRACED WALL PANEL ADJACENT TO A DOOR OR WINDOW OPENING
Chapter 7: Wall Covering

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R702.3.7</td>
<td>NEW</td>
<td></td>
<td>Horizontal gypsum board diaphragm ceilings</td>
<td>This section allows the use of gypsum board ceiling to create a horizontal diaphragm to resist lateral loads.</td>
</tr>
<tr>
<td>R702.4.2</td>
<td>NEW</td>
<td></td>
<td>Cement, fiber-cement, and glass mat gypsum backers</td>
<td>This new section requires cement, fiber-cement, or glass mat gypsum as the backer for ceramic tile in tub and shower areas.</td>
</tr>
<tr>
<td>R703.1</td>
<td>R703.1</td>
<td></td>
<td>General</td>
<td>Revised to clarify that all wall penetrations and joints must be appropriately flashed. Provides exception for masonry systems that comply with Chapter 6 and the flashing requirements of Chapter 7. Provides exception for tested wall systems that demonstrates the wall system performs without meeting the Prescriptive requirements.</td>
</tr>
<tr>
<td>R703.2 and Table R703.4</td>
<td>R703.2 and Table R703.4</td>
<td>Water-resistive barrier</td>
<td>Revised to require a water-resistive barrier under all exterior wall finish (siding) material.</td>
<td></td>
</tr>
<tr>
<td>R703.4</td>
<td>R703.4</td>
<td></td>
<td>Attachments</td>
<td>Added clarification that the attachment provisions in Table R703.4 are not intended for construction where the basic wind speed is 110 mph or greater. The attachments must be verified by engineered design where the basic wind speed is equal to or greater than 110 mph.</td>
</tr>
<tr>
<td>R703.6</td>
<td>R703.6</td>
<td></td>
<td>Exterior plaster</td>
<td>Added standards for the proper installation procedures of exterior plaster.</td>
</tr>
<tr>
<td>R703.6.3</td>
<td>NEW</td>
<td></td>
<td>Water-resistive barriers</td>
<td>This new text adds the requirements for water-resistive barriers under exterior plaster.</td>
</tr>
</tbody>
</table>

Test your knowledge

4. What is the minimum sill height of an operable window that is more than 72 inches above the finished grade or surface below?
   a. 44 inches
   b. 36 inches
   c. 24 inches
   d. 12 inches

5. What standard is to be used for testing garage doors?
Chapter 7: Wall Covering

### Code Section

<table>
<thead>
<tr>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R703.7</td>
<td>R703.7</td>
<td>Stone and masonry veneer, general</td>
<td>Added three (3) exceptions that allows masonry veneer in the new Seismic Design Category D0. Deleted the text for the existing four (4) exceptions and provides new tables and a figure that consolidate the exceptions into an easy to use format [see attached Tables R703.7(1) and R703.7(2) and Figure R703.7(1)].</td>
</tr>
<tr>
<td>Table R703.7(1)</td>
<td>NEW</td>
<td>Stone or Masonry Veneer Limitations and Requirements, Wood or Steel Framing, Seismic Design Categories A, B and C</td>
<td></td>
</tr>
<tr>
<td>Table R703.7(2)</td>
<td>NEW</td>
<td>Stone or Masonry Veneer Limitations and Requirements, One- and Two-Family Detached Dwellings, Wood Framing, Seismic Design Categories D0, D1 and D2</td>
<td></td>
</tr>
<tr>
<td>Figure R703.7(1)</td>
<td>NEW</td>
<td>Hold Downs at Exterior and Interior Braced Wall Panels When Using Stone or Masonry Veneer</td>
<td>Revised to provide that flashing be installed in shingle-fashion and must extend to the surface of the exterior wall finish or to the water-resistive barrier. Exemption for &quot;self-flashing windows&quot; has been deleted.</td>
</tr>
<tr>
<td>R703.8</td>
<td>R703.8</td>
<td>Flashing</td>
<td></td>
</tr>
<tr>
<td>R703.11</td>
<td>NEW</td>
<td>Vinyl siding</td>
<td>This new text adds the requirements that vinyl siding be certified and labeled to ASTM D3679.</td>
</tr>
</tbody>
</table>

### Table R703.7(1)

**STONE OR MASONRY VENEER LIMITATIONS AND REQUIREMENTS, WOOD OR STEEL FRAMING, SEISMIC DESIGN CATEGORIES A, B AND C**

<table>
<thead>
<tr>
<th>SEISMIC DESIGN CATEGORY</th>
<th>NUMBER OF WOOD OR STEEL FRAMED STORIES</th>
<th>MAXIMUM HEIGHT OF VENEER ABOVE NONCOMBUSTIBLE FOUNDATION (feet)</th>
<th>MAXIMUM NOMINAL THICKNESS OF VENEER (inches)</th>
<th>MAXIMUM WEIGHT OF VENEER (psf)b</th>
<th>WOOD OR STEEL FRAMED STORY</th>
<th>MINIMUM SHEATHING AMOUNT (percent of braced wall line length)c</th>
</tr>
</thead>
<tbody>
<tr>
<td>A or B</td>
<td>Steel: 1 or 2</td>
<td>30</td>
<td>5</td>
<td>50</td>
<td>all</td>
<td>Table R602.10.1 or Table R603.7</td>
</tr>
<tr>
<td></td>
<td>Wood: 1, 2 or 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Table R602.10.1 or Table R603.7</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>30</td>
<td>5</td>
<td>50</td>
<td>1 only</td>
<td>Table R602.10.1 or Table R603.7</td>
</tr>
<tr>
<td></td>
<td>top</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Table R602.10.1 or Table R603.7</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>30</td>
<td>5</td>
<td>50</td>
<td>top</td>
<td>Table R602.10.1 or Table R603.7</td>
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<td>bottom</td>
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<td></td>
<td></td>
<td></td>
<td>Table R602.10.1 or Table R603.7</td>
</tr>
<tr>
<td></td>
<td>Wood only: 3</td>
<td>30</td>
<td>5</td>
<td>50</td>
<td>top</td>
<td>Table R602.10.1 or Table R603.7</td>
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<td>Table R602.10.1 or Table R603.7</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Table R602.10.1 or Table R603.7</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.479 kPa.

a. An Additional 8 feet is permitted for gable end walls. See also story height limitations of Section R301.3.

b. Maximum weight is installed weight and includes weight of mortar, grout, lath and other materials used for installation. Where veneer is placed on both faces of a wall, the combined weight shall not exceed that specified in this table.

c. Applies to exterior and interior braced wall lines.
### TABLE R703.7(2)
**STONE OR MASONRY VENEER LIMITATIONS AND REQUIREMENTS, ONE- AND TWO-FAMILY DETACHED DWELLINGS, WOOD FRAMING, SEISMIC DESIGN CATEGORIES D₀, D₁ AND D₂**

<table>
<thead>
<tr>
<th>Seismic Design Category</th>
<th>Number of Wood Framed Stories⁰</th>
<th>Maximum Height of Veneer Above Noncombustible Foundation or Foundation Wall (feet)</th>
<th>Maximum Nominal Thickness of Veneer (inches)</th>
<th>Maximum Weight of Veneer (psf)b</th>
<th>Wood Framed Story</th>
<th>Minimum Sheathing Amount (percent of braced wall line length)⁶</th>
<th>Minimum Sheathing Thickness and Fastening</th>
<th>Single Story Hold Down Force (lb)⁶</th>
<th>Cumulative Hold Down Force (lb)⁶</th>
</tr>
</thead>
<tbody>
<tr>
<td>D₀</td>
<td>1</td>
<td>20⁷</td>
<td>4</td>
<td>40</td>
<td>1 only</td>
<td>35 /1₆-inch wood structural panel sheathing with 8d common nails spaced at 4 inches on center at panel edges, 12 inches on center at intermediate supports. 8d common nails at 4 inches on center at braced wall panel end posts with hold down attached.</td>
<td>N/A</td>
<td>1900</td>
<td>1900</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>20⁷</td>
<td>4</td>
<td>40</td>
<td>top</td>
<td>35</td>
<td>3200</td>
<td>3000</td>
<td>5100</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>bottom</td>
<td>45</td>
<td>3500</td>
<td>3500</td>
<td>5400</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>top</td>
<td>40</td>
<td>3500</td>
<td>3500</td>
<td>8900</td>
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<td></td>
<td></td>
<td>bottom</td>
<td>60</td>
<td>2100</td>
<td>2100</td>
<td>5800</td>
</tr>
<tr>
<td>D₁</td>
<td>1</td>
<td>20⁷</td>
<td>4</td>
<td>40</td>
<td>1 only</td>
<td>45</td>
<td>2100</td>
<td>3700</td>
<td>5800</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>20⁷</td>
<td>4</td>
<td>40</td>
<td>top</td>
<td>45</td>
<td>3700</td>
<td>3700</td>
<td>5800</td>
</tr>
<tr>
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<td></td>
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<td>bottom</td>
<td>45</td>
<td>2100</td>
<td>2100</td>
<td>5800</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>top</td>
<td>45</td>
<td>3700</td>
<td>3700</td>
<td>5800</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bottom</td>
<td>60</td>
<td>2100</td>
<td>2100</td>
<td>5800</td>
</tr>
<tr>
<td>D₂</td>
<td>1</td>
<td>20⁷</td>
<td>3</td>
<td>30</td>
<td>1 only</td>
<td>55</td>
<td>2300</td>
<td>2300</td>
<td>6200</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>20⁷</td>
<td>3</td>
<td>30</td>
<td>top</td>
<td>55</td>
<td>3900</td>
<td>3900</td>
<td>6200</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.479 kPa, 1 pound-force = 4.448 N.

a. Cripple walls are not permitted in Seismic Design Categories D₀, D₁ and D₂.
b. Maximum weight is installed weight and includes weight of mortar, grout and lath, and other materials used for installation.
c. Applies to exterior and interior braced wall lines.
d. Hold down force is minimum allowable stress design load for connector providing uplift tie from wall framing at end of braced wall panel at the noted story to wall framing at end of braced wall panel at the story below, or to foundation or foundation wall. Use single story hold down force where edges of braced wall panels do not align; a continuous load path to the foundation shall be maintained. [See Figure R703.7(1)(b)].
e. Where hold down connectors from stories above align with stories below, use cumulative hold down force to size middle and bottom story hold down connectors. [See Figure R703.7(1)(a)].
f. The veneer shall not exceed 20 feet in height above a noncombustible foundation, with an additional 8 feet permitted for gable end walls, or 30 feet in height with an additional 8 feet for gable end walls where the lower 10 feet has a backing of concrete or masonry wall. See also story height limitations of Section R301.3.
g. The veneer shall not exceed 30 feet in height above a noncombustible foundation, with an additional 8 feet permitted for gable end walls. See also story height limitations of Section R301.3.

---

**FIGURE R703.7(1)**
**HOLD DOWNS AT EXTERIOR AND INTERIOR BRACED WALL PANELS WHEN USING STONE OR MASONRY VENEER**

(a) Braided wall panels stacked (aligned story to story). Use cumulative hold down force.
(b) Braided wall panels not stacked. Use single story hold down force.
Chapter 8: Roof-Ceiling Construction

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R802.1.3</td>
<td>Structural log members</td>
<td>Added referenced standard to establish stresses for structural log members.</td>
</tr>
<tr>
<td>R802.3.1</td>
<td>Ceiling joist and rafter connections</td>
<td>Ceiling joists or rafter ties are required to resist the horizontal thrust. This section has been revised to provide the rafter ties minimum size and connection when located within the lower 1/3 of the attic space. Collar ties or roof straps are required to resist ridge uplift. This section has been revised to require collar ties or ridge straps in the upper 1/3 of the attic space. New language specifies collar ties minimum size, spacing, and connection.</td>
</tr>
<tr>
<td>Tables R802.5.1(1) through R802.5.1(8)</td>
<td>Rafter Spans for Common Lumber Species</td>
<td>Revised Footnote “a” to limit ceiling joist and rafter ties to the lower one third of the attic space.</td>
</tr>
<tr>
<td>Tables R802.5.1(1) through R802.5.1(8)</td>
<td>Rafter/Ceiling Joist Heel Connections</td>
<td>Added Footnote “g” to provide adjustment to the heel joint connection for ceiling joist or rafter ties located within the lower one third of the attic space.</td>
</tr>
<tr>
<td>R802.7.2</td>
<td>Engineered wood products</td>
<td>Added the requirement that cuts, notches and bored holes are not permitted unless allowed by the manufacturer’s recommendation or by a registered design professional.</td>
</tr>
<tr>
<td>R802.10.2.1</td>
<td>Applicability limits</td>
<td>This section has been revised to reference the current Guide For Truss Bracing (BCSI 1-03). The Guide HIP-91 is no longer produced.</td>
</tr>
<tr>
<td>R802.10.3</td>
<td>Bracing</td>
<td>This section has been revised to reference the current Guide For Truss Bracing (BCSI 1-03). The Guide HIP-91 is no longer produced.</td>
</tr>
</tbody>
</table>
| R804.1.1       | Applicability limits                 | Revised the Prescriptive Building Design from 36 feet in width to 40 feet in width. Revised Section R804 throughout, due to building width change, to include:  
  • Revised plus additional span tables.  
  • Revised fastening requirements.  
  • Spans with and without bearing stiffeners.  
  • Spans with and without attic storage. |
| R806.3         | Vent and insulation clearance        | Revised to require a minimum of 1-inch space to be provided not only at the location of the vent but also between the insulation and the roof sheathing throughout the enclosed attic and enclosed rafter spaces. |
| R806.4         | Conditioned attic assemblies         | This new section specifies the conditions under which a conditioned attic assembly is permitted to be unvented. |

**Test your knowledge**

6. **Ceiling joists or rafter ties must be located in the lower __________ of the attic space.**
   
   a. 2/3  
   b. 1/2  
   c. 1/3  
   d. 1/4
### Chapter 9: Roof Assemblies

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R903.5</td>
<td>NEW</td>
<td></td>
<td>Hail exposure</td>
<td>In this new section, criteria has been added for determining the hail exposure for roof covering. Criteria has been provided for moderate and severe hail exposure. Added Figure R903.5, HAIL EXPOSURE MAP, for use to determine hail exposure.</td>
</tr>
<tr>
<td>R905.2.4.1</td>
<td>NEW</td>
<td></td>
<td>Wind resistance of asphalt shingles</td>
<td>ASTM D3161 includes classes for wind resistance. Class F indicates the shingles have been tested and passed at 110 mph. Class F asphalt shingles are acceptable where special fastening is required.</td>
</tr>
<tr>
<td>R905.2.6</td>
<td></td>
<td>R905.2.6</td>
<td>Attachment</td>
<td>Added where special methods of fastening are required, asphalt shingle wrappers must be labeled to indicate compliance with ASTM D3161 Class F.</td>
</tr>
<tr>
<td>R905.2.7.1</td>
<td>R905.2.7.1</td>
<td></td>
<td>Ice barrier</td>
<td>Deleted the use of the average daily temperature in January of 25°F, as a criteria to require an ice barrier. Requires the use of local history as the criteria in accordance with Table R301.2(1). This applies to all roof covering where an ice barrier is required (see new Sections R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1).</td>
</tr>
<tr>
<td>R905.10.3</td>
<td>R905.10.3</td>
<td></td>
<td>Material standards</td>
<td>Added that the minimum corrosion resistance of metal-sheet roof covering is specified in new Table R905.10.2(2).</td>
</tr>
</tbody>
</table>
| R906.2       | NEW  |      | Material standards | Added industry-recognized material standards for above deck thermal insulation board for the following:  
• Cellular glass board,  
• Composite boards,  
• Expanded polystyrene,  
• Extruded polystyrene board,  
• Perlite board,  
• Polyisocyanurate board, and  
• Wood fiberboard. |
| R907.3       | R907.3 |      | Re-covering versus replacement | Added the requirement to remove asphalt shingles before installing new shingles when the building is located in areas subject to moderate or severe hail exposure. Added an exception that permits recoating of an existing polyurethane foam roofing system without removal of the existing roof covering. |

---

**Test your knowledge**

7. **Given:** An existing building with a roof covering of asphalt shingles, located in an area subject to moderate hail exposure.

**True or False:**
The roof is permitted to be recovered without removing the existing shingles.
### Chapter 10: Chimneys and Fireplaces

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1001</td>
<td>Masonry Fireplaces</td>
<td>Chapter 10 has been reorganized and Sections R1001 through R1006 have been renumbered so that masonry fireplaces come before masonry chimneys to match the sequence in which they would be built and to match the IBC.</td>
</tr>
<tr>
<td>R1002</td>
<td>Masonry Heaters</td>
<td>Revised to make the language compatible with the IBC and the current ASTM and UL Standards.</td>
</tr>
<tr>
<td>R1003</td>
<td>Masonry Chimneys</td>
<td>Correlates the seismic requirements for chimneys to the IBC seismic requirements for chimneys.</td>
</tr>
<tr>
<td>R1005</td>
<td>Factory-built Chimneys</td>
<td>Revised to require marking of factory-built chimney listed to UL 103. Distinguishes between the marking requirements for Type HT and non-Type HT factory-built chimneys.</td>
</tr>
</tbody>
</table>

### Chapter 11: Energy Efficiency

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
</table>
| N1101        | General                        | Chapter 11 has been completely rewritten to provide prescriptive requirements that are easy to understand. This rewrite has the following significant changes:  
- The climate basis has been changed from simple HDD to geographical zones that are based on multiple climate variables (so that both heating and cooling considerations are accommodated). Further, within the U.S., the zones are completely defined by political boundaries (county lines) so that code users will never have to choose from disparate climate data sources to determine local requirements.  
- The prescriptive envelope requirements are not a function of window area.  
- Requires a disclosure of each house’s R-values, U-factors, and HVAC efficiencies.  
- The change contains provisions related to unvented crawlspaces, modified vapor retarder requirements, requires sealing of air handlers in garages, and limits worst-case glazing U-factors in locations where moisture condensation can be a serious problem. |
| N1102        | Building Thermal Envelope      |                                                                         |
| N1103        | Systems                        |                                                                         |

### Chapter 13: General Mechanical System Requirements

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
</table>
| M1302.1      | Listed and labeled             | Added a requirement that appliances must be listed and labeled for the appliance in which they are installed.  
This code change is intended to prevent the use of an appliance in an application for which it has not been tested. For example, a fan that is listed for bathroom exhaust systems should not be used in a kitchen grease hood exhaust application. |
| M1305.1.3    | Appliances in attics           | Added an exception that allows the access passageway to the appliances to be extended to 50 feet in an attic and unlimited in length under floors if the passageway has a minimum height of 6 feet and width of 22 inches for the entire length. |
Chapter 13: General Mechanical System Requirements

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1307.4</td>
<td>Hydrogen generating and refueling operations</td>
<td>Deleted the limitation of three vehicles that can be located in a space containing hydrogen-generating appliances or refueling systems. Relocated the maximum floor area and rated output capacity to Section 304.4.1.</td>
</tr>
<tr>
<td>M1308.3</td>
<td>NEW Foundations and supports</td>
<td>Added a new requirement to install outdoor mechanical equipment on foundations or slabs at least three inches above grade.</td>
</tr>
</tbody>
</table>

Test your knowledge

8. An appliance installed in an attic has an unobstructed passageway for access that is at least 22 inches wide and 6 feet high, the length of the passageway is allowed to be:
   a. 20 feet.
   b. 35 feet.
   c. 50 feet.
   d. unlimited in length.

Chapter 14: Heating and Cooling Equipment

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1411.3.1</td>
<td>NEW Auxiliary and secondary drain systems</td>
<td>Added a requirement for drain pans under fuel-fired appliances that produce condensate with an exception for appliances that shut down when a blockage occurs in the condensate drain system. Added a fourth method of preventing pan overflow which uses a water level detection device installed in the primary drain line to shut down the appliance.</td>
</tr>
<tr>
<td>M1411.3.1.1</td>
<td>NEW Water level monitoring devices</td>
<td>Added a requirement for shutting off down flow units and other coils with no secondary or auxiliary pans by means of a monitoring device installed inside the primary drain pan.</td>
</tr>
</tbody>
</table>

Chapter 15: Exhaust Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1501.1</td>
<td>NEW Outdoor discharge</td>
<td>Added a new section to require mechanically exhausted air to be discharged to the outdoors. In previous editions of the IRC, there was no clear statement that all air exhausted by mechanical means must be discharged to the outdoors. This new section also prohibits exhausting into an attic, crawl space or soffit and ridge vents.</td>
</tr>
</tbody>
</table>
Chapter 15: Exhaust Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1502.6</td>
<td>Duct length</td>
<td>Deleted the exception that allowed longer clothes dryer exhaust duct lengths where a booster fan was installed and added an exception for calculating the equivalent length of large radius bends in the duct system.</td>
</tr>
</tbody>
</table>

Chapter 16: Duct Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1601.2.1</td>
<td>Duct insulation materials</td>
<td>Added the specimen preparation procedures of ASTM E2231 to the flame-spread and smoke-developed index testing requirements.</td>
</tr>
<tr>
<td>M1601.3.1</td>
<td>Joints and seams</td>
<td>Added specific UL 181 markings for various types of tapes and mastics, such as UL 181 A-H for heat-sensitive tape. Added a requirement for mechanical fasteners for use with flexible ducts to comply with UL 181B.</td>
</tr>
</tbody>
</table>

Test your knowledge

9. Pressure sensitive tape for use with flexible air ducts must be marked ________________.
   a. 181B-FX
   b. 181A-P
   c. 181A-H
   d. 181B-M

Chapter 21: Hydronic Piping

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table M2101.1</td>
<td>Hydronic Piping Materials</td>
<td>Added new standards for PEX fittings and added Polypropylene with new standards.</td>
</tr>
<tr>
<td>M2103.1</td>
<td>Piping materials</td>
<td>Added Polypropylene and PEX pipe and joints as acceptable materials for hydronic floor heating systems.</td>
</tr>
<tr>
<td>M2103.2</td>
<td>Piping joints</td>
<td>Added PEX joints as acceptable materials for low temperature hydronic heating systems.</td>
</tr>
<tr>
<td>M2104.2</td>
<td>Piping joints</td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 22: Special Piping and Storage Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2201.7</td>
<td>NEW</td>
<td></td>
<td>Tanks abandoned or removed</td>
<td>Added a new requirement to remove exterior above-grade piping when an oil tank is abandoned or removed. This new section requires that the outside pipe used to fill fuel oil tanks be removed, not just capped. There have been instances where the supplier mistakenly pumped fuel oil into a basement because the tank had been removed but the operator could not detect that the existing pipe was not connected to a tank.</td>
</tr>
</tbody>
</table>

### Chapter 27: Plumbing Fixtures

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2708.1</td>
<td>P2708.1</td>
<td>General</td>
<td>A new exception has been added that provides minimum dimension requirements for shower receptors installed as a replacement for a bathtub.</td>
<td></td>
</tr>
<tr>
<td>P2721.2</td>
<td>NEW</td>
<td>Bidet water temperature</td>
<td>An ICC appointed Ad Hoc Committee on Water Temperature and Control evaluated the types of hazards and applications where scalding and thermal shock can occur, identifying plumbing fixtures and equipment that require temperature control limits and the appropriate standards for control devices. The code requires a maximum discharge water temperature from bidet fittings of 110°F to be provided by a water temperature limiting device conforming to ASSE 1070 [see Figures P2721.2(1) and (2)].</td>
<td></td>
</tr>
<tr>
<td>P2713.3</td>
<td>NEW</td>
<td>Bathtub and whirlpool bathtub valves</td>
<td>Bathtubs and whirlpool bathtubs must be provided with a water temperature limiting device that conforms to ASSE 1070, except where such protection is otherwise provided by a combination tub/shower valve that conforms to ASSE 1016 or CSA B125. The maximum setting of such devices is limited to 120°F [see Figures P2713.3(1) and (2)].</td>
<td></td>
</tr>
</tbody>
</table>

Figures

P2721.2, P2713.3 (1)
### Plumbing Fixture Maximum Discharge Temperature Reference Standard

<table>
<thead>
<tr>
<th>Plumbing Fixture</th>
<th>Maximum Discharge Temperature</th>
<th>Reference Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bidet</td>
<td>≤110°F</td>
<td>ASSE 1070</td>
</tr>
<tr>
<td>2. Public hand-washing facilities</td>
<td>&gt;85°F and &lt;110°F</td>
<td>ASSE 1070</td>
</tr>
<tr>
<td>3. Individual shower valves</td>
<td>≤120°F</td>
<td>ASSE 1016 or CSA B125</td>
</tr>
<tr>
<td>4. Multiple (gang) showers</td>
<td>≤120°F</td>
<td>ASSE 1069 or CSA B125</td>
</tr>
<tr>
<td>5. Bathtub/whirlpool bathtubs</td>
<td>≤120°F</td>
<td>ASSE 1070, Optional Combination tub/shower valve</td>
</tr>
</tbody>
</table>

**Figures**
P2721.2, P2713.3 (2)

---

### Test your knowledge

10. List three plumbing fixtures that have water temperature limitations in the 2006 IRC. List the maximum discharge temperature and appropriate referenced standard for the control devices.

<table>
<thead>
<tr>
<th>Plumbing Fixture</th>
<th>Maximum Discharge Temperature</th>
<th>Reference Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Chapter 28: Water Heaters

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2803.6.1</td>
<td>Requirements for discharge pipe</td>
<td>This section has been reformatted creating an item list that clarifies the intent of the 13 distinct provisions. “Property damage” has been changed to “structural damage” with respect to relief valve discharge.</td>
</tr>
</tbody>
</table>
11. Which of the following fixtures does not have a discharge water temperature limitation?
   a. bidet
   b. shower
   c. lavatory
   d. bathtub

### Chapter 29: Water Supply and Distribution

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2903.9.4</td>
<td>Valve requirements</td>
<td>Ball valves, gate valves, globe valves and plug valves that convey drinking water must meet NSF 61.</td>
</tr>
<tr>
<td>P2904.4</td>
<td>Water service pipe</td>
<td>New language requires water service materials not third-party certified for water distribution to terminate at or before the full open valve located at the entrance to the structure.</td>
</tr>
<tr>
<td>P2904.9.1.2</td>
<td>CPVC plastic pipe</td>
<td>An exception has been added stating that primer is not required where all of the following conditions apply: solvent cement is third-party certified as conforming to ASTM 493; cement is yellow in color; solvent cement is used only for joining ½-inch through 2-inch sizes; CPVC pipe and fittings are manufactured in accordance with ASTM D2846.</td>
</tr>
</tbody>
</table>

### Chapter 31: Vents

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3102.1</td>
<td>Required vent extension</td>
<td>The traditional “main vent” rule has been rewritten to restate and clarify the intent. The “undiminished in size” and “directly as possible” text has been deleted (see Figure P3102.1).</td>
</tr>
<tr>
<td>P3102.2</td>
<td>Installation</td>
<td></td>
</tr>
<tr>
<td>P3102.3</td>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>P3108.2</td>
<td>Vent connections</td>
<td>Added text that clarifies the intent that each wet-vented fixture connect independently to the wet vent.</td>
</tr>
<tr>
<td>P3111.2</td>
<td>Installation</td>
<td>As revised, this section now allows a vertical pipe component for all fixtures that are permitted to connect to a combination drain and vent system, including floor drains.</td>
</tr>
</tbody>
</table>
Chapter 32: Traps

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>Table P3201.7</td>
<td>Table P3201.7</td>
<td>Size of Traps and Trap Arms for Plumbing Fixtures</td>
</tr>
</tbody>
</table>

The minimum trap size for showers has been reduced to 1½".

Chapter 43: Referenced Standards

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>Chapter 43</td>
<td>Chapter 43</td>
<td>Referenced Standards</td>
</tr>
</tbody>
</table>

Revised and updated.
### Appendix G: Swimming Pools, Spas, and Hot Tubs

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 AG 105.2</td>
<td>Outdoor swimming pool</td>
</tr>
<tr>
<td>2006 AG 105.2</td>
<td>Item 9.2</td>
</tr>
<tr>
<td>2003 AG 105.2</td>
<td>Item 9.2</td>
</tr>
<tr>
<td>AG 106.2</td>
<td>Suction fittings</td>
</tr>
</tbody>
</table>

#### Outdoor swimming pool
Now requires the alarm to sound within 7 seconds after the door is opened. Previously, the alarm was required to sound immediately after the door was opened. The alarm is required to be listed in accordance with UL 2017.

#### Suction fittings
Now requires a drain grate with a minimum size of 18" x 23". Previously the minimum size was 12” x 12”.

### Appendix J: Existing Buildings and Structures

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 Aj 501.7</td>
<td>Ceiling height</td>
</tr>
<tr>
<td>2006 Aj 601.4</td>
<td>Suction fittings</td>
</tr>
<tr>
<td>2006 Aj 501.8</td>
<td>Stairs</td>
</tr>
<tr>
<td>2006 Aj 601.1.2</td>
<td>Handrails</td>
</tr>
</tbody>
</table>

#### Ceiling height
Added provisions to permit the ceiling height for habitable spaces in existing basements to be 6 feet 8 inches for alterations or reconstruction.

#### Suction fittings
Now requires a drain grate with a minimum size of 18" x 23". Previously the minimum size was 12” x 12”.

#### Stairs
Added provisions for existing stairs in basements for the following:
- Permits existing stair width to remain.
- Permits existing headroom to remain.
- Permits existing landing depth and width to remain.

#### Handrails
Revised the requirement for a handrail from 3 or more risers to 4 or more risers.

### Appendix L: Permit Fees (NEW)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 Appendix L</td>
<td>Permit Fees</td>
</tr>
</tbody>
</table>

This new appendix provides a schedule of permit fees.

### Appendix M: Home Day Care - R-3 Occupancy (NEW)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 Appendix M</td>
<td>Home Day Care - R-3 Occupancy</td>
</tr>
</tbody>
</table>

This new appendix has added provisions for a home daycare operated within a dwelling.
## Appendix O: Gray Water Recycling Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix O</td>
<td>Gray Water Recycling Systems</td>
<td>New language now provides an update to include specific provisions for the materials, design, construction and installation of gray water systems for flushing of water closets and urinals and for subsurface landscape irrigation.</td>
</tr>
</tbody>
</table>

## Appendix P: Sprinkling (NEW)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix P</td>
<td>NEW Sprinkling</td>
<td>This new appendix now requires an automatic fire sprinkler to be installed in new one- and two-family dwellings and townhouses.</td>
</tr>
</tbody>
</table>
Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would include:
   - A requirement has been added that appliances can only be used in accordance with their listing and the manufacturer’s instructions (Section M 1302.1).
   - A new section has been added to require mechanically exhausted air to be discharged to the outdoors (Section M 1501.1).
   - A new section has been added that requires the outside pipe used to fill fuel oil tanks to be removed, not just capped (Section M 2201.7).
   - A new exception has been added that provides minimum dimension requirements for shower receptors where installed as a replacement for a bathtub (Section P2708.1).

2. Answer will vary. For example, an acceptable answer would be:
   - This code change in Section M 1302.1 is intended to prevent the use of an appliance in an application for which it has not been tested.

3. ASTM D 3957

4. c. 24 inches

5. ASTM E 330 or ANSI/DA SM A 108

6. c. 1/3

7. False

8. 50 feet (Section M 1305.1.3)

9. a. 181B-FX (Section M 1601.3.1)

10.

<table>
<thead>
<tr>
<th>Plumbing Fixture</th>
<th>Maximum Discharge Temperature</th>
<th>Reference Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidet</td>
<td>110°F</td>
<td>ASSE 1070 (Section P2721.2)</td>
</tr>
<tr>
<td>Individual shower valves</td>
<td>120°F</td>
<td>ASSE 1016 or CSA B125 (Section P2713.3)</td>
</tr>
<tr>
<td>Bathtub/whirlpool bathtubs</td>
<td>120°F</td>
<td>ASSE 1070, Option Combination tub/shower valve conforming to ASSE 1016 or CSA B125 (Section P2713.3)</td>
</tr>
</tbody>
</table>

11. c. Lavatories have no temperature limits in the IRC (Section P2711).
International Fire Code

The 2006 edition of the International Fire Code® (IFC®) continues to meet the need for a modern, up-to-date fire code, that addresses conditions hazardous to life and property arising from fire, explosion, hazardous materials storage, handling or use and the use and occupancy of buildings and premises. It includes both new and improved prescriptive and performance-based model code regulations that safeguard public health and safety in all communities, large and small. This 2006 edition is fully compatible with the entire family of International Codes®.

Scope

The scope of the updated 2006 edition of the IFC continues to encompass both new and existing buildings, structures, premises and operations. The provisions for new buildings and facilities are fully correlated with the International Building Code® (IBC®), among other I-Codes®, and focus on the regulation of materials, operations and fire protection systems. The 2006 IFC also regulates features affecting the ability of the fire department to gain access to and protect buildings as well as providing for firefighter safety. Once the building or facility is completed and legally occupied, the maintenance provisions for existing buildings and facilities intend to ensure that the level of safety established during initial construction continues throughout the life of the building. Additionally, a number of provisions included in the IFC are intended to be fully applicable retroactively to buildings constructed prior to the adoption of the code and to equalize the level of hazards present throughout the community’s building stock.

Test Your Knowledge

1. List five changes from the 2003 IFC to the 2006 IFC.
   -
   -
   -
   -
   -

2. Explain the significance of one of the above changes.
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________

Content

- Administration and General Precautions (Chapters 1-5)
- Building and Equipment (Chapters 6-10)
- Processes and Occupancies (Chapters 11-26)
- Hazardous Materials (Chapters 27-44)
## Chapter 1: Administration

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>102.3</td>
<td>102.3</td>
<td><strong>102.3</strong> Change of use or occupancy&lt;br&gt;Returns the text to the 2000 version, deleting the reference to the International Existing Building Code® (IEBC®).</td>
</tr>
<tr>
<td>102.4</td>
<td>102.4</td>
<td><strong>102.4</strong> Application of building code</td>
</tr>
<tr>
<td>102.5</td>
<td>102.5</td>
<td><strong>102.5</strong> Historic buildings</td>
</tr>
<tr>
<td>105.6.14</td>
<td>105.6.15</td>
<td><strong>105.6.15</strong> Explosives&lt;br&gt;Provides an exception to the permit requirements for storage of smokeless propellant storage, black powder and small arms primers in Group R-3 occupancies.</td>
</tr>
<tr>
<td>106.4</td>
<td><strong>NEW</strong></td>
<td><strong>106.4</strong> Approvals&lt;br&gt;Clarifies that approvals resulting from an inspection do not allow any provision of the IFC or any ordinance of the jurisdiction to be violated.</td>
</tr>
</tbody>
</table>

### Test Your Knowledge

3. The owner of a 4-story townhouse (Group R-3) is a sportsman who likes to reload his own ammunition for hunting. For the upcoming hunting season, he plans to buy a 20 pound supply of smokeless propellant and store it in its original container for his anticipated reloading needs. Is he required to obtain a permit? (See Sections 105.6.14 and 3306.)

## Chapter 3: General Precautions Against Fire

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>307.1.1</td>
<td>307.2.2</td>
<td><strong>307.1.1</strong> Prohibited open burning&lt;br&gt;The relocation and correlation of these provisions clarifies that all open burning that is offensive, objectionable or hazardous can be prohibited or summarily extinguished by authority of the fire code official.</td>
</tr>
<tr>
<td>307.3</td>
<td>307.2.2</td>
<td><strong>307.3</strong> Extinguishment authority</td>
</tr>
<tr>
<td>308.3.8</td>
<td><strong>NEW</strong></td>
<td><strong>308.3.8</strong> Group R-2 dormitories&lt;br&gt;Adds prohibition on the burning of incense, candles or other open flame producing items in dormitory sleeping units in an effort to reduce the hazards associated with the use of open flames in the close confines of dormitory living.</td>
</tr>
<tr>
<td>309.1</td>
<td>309.1</td>
<td><strong>309.1</strong> General&lt;br&gt;Expands the scope of Section 309 in recognition that these safeguards are needed for not only industrial trucks, but also other pieces of battery-powered equipment that could be charging with the attendant hazard of the off-gassing of the batteries.</td>
</tr>
<tr>
<td>311.5</td>
<td><strong>NEW</strong></td>
<td><strong>311.5</strong> Placards&lt;br&gt;This new section will enhance firefighter safety by requiring the use of a nationally recognized hazard notification marking system to identify the structural stability of vacant buildings declared to be dangerous and unsafe in accordance with Section 110.</td>
</tr>
<tr>
<td>313.1</td>
<td>313.1</td>
<td><strong>313.1</strong> General&lt;br&gt;Adds an exception that will provide practical flexibility for storing fueled equipment up to a maximum fuel capacity of ten [10] gallons in sprinklered buildings.</td>
</tr>
</tbody>
</table>
### Chapter 4: Emergency Planning and Preparedness

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 405.2</td>
<td>Table 405.2</td>
<td></td>
</tr>
<tr>
<td>2006 Fire and Evacuation Drill Frequency and Participation</td>
<td>2003</td>
<td>Adds an annual fire drill frequency for employees in high-rise buildings, employees in certain Group B buildings and all occupants in college and university Group R-2 dormitory buildings so that occupants become familiar with the evacuation strategies and can practice how to evacuate the building.</td>
</tr>
</tbody>
</table>

### Chapter 6: Building Services and Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 605.10</td>
<td>NEW Portable, electric space heaters</td>
<td>Provides needed minimum safety requirements for the use of portable, electric space heaters within any occupancy. These commonly used comfort heating devices have historically been incorrectly used and/or incorrectly installed and can be a source of ignition if not regulated.</td>
</tr>
<tr>
<td>2006 606.10</td>
<td>NEW Emergency pressure control system</td>
<td>Replaces former refrigeration system Emergency Control Box provisions with a new section which requires a fully redundant safety control system in lieu of a manual system that has proven itself to be rarely, if ever, utilized by the fire service, thus favorably resolving long-standing concerns regarding the potential for harm caused by an untrained person operating valves in an emergency control box.</td>
</tr>
<tr>
<td>2006 608</td>
<td>608 and 609 Stationary Storage Battery Systems</td>
<td>Former Sections 608 and 609 were about 80% identical. New Section 608 reduces the size of the code, eliminates redundant language and is reformatted to be more user-friendly and retains the intent as well as most of the exact wording of the original 2 sections.</td>
</tr>
</tbody>
</table>

### Chapter 7: Fire-Resistance-Rated Construction

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 703.1</td>
<td>703.1 Maintenance</td>
<td>Expands the scope of fire-resistance-rated construction maintenance by adding smoke barriers, fire resistive coatings, sprayed fire-resistant materials applied to structural members and fire-resistive-joint systems to the list of items to be maintained.</td>
</tr>
</tbody>
</table>

---

**Test Your Knowledge**

4. The IFC lists various types of fire-resistance-rated construction that are required to be maintained. List five of them. (See Section 703.1)

   a. ___________________________________________
   b. ___________________________________________
   c. ___________________________________________
   d. ___________________________________________
   e. ___________________________________________
Chapter 8: Interior Finish, Decorative Materials and Furnishings

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td>Chapter 8</td>
<td>Chapter 8 Interior Finish, Decorative Materials and Furnishings</td>
</tr>
</tbody>
</table>

The organization of Chapter 8 has always been problematic. It has been completely reorganized to more clearly portray the chapter content, make the chapter organization more logical and easily navigable for the code user and enable further study and improvement of the chapter.

Test Your Knowledge

Match the subject matter with the corresponding code section. (See entire reorganized chapter.)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Existing building interior wall finish classifications</td>
<td>a. Section and Table 803.3</td>
<td></td>
</tr>
<tr>
<td>6. Newly introduced mattress cigarette ignition test char length criteria.</td>
<td>b. 808.1</td>
<td></td>
</tr>
<tr>
<td>7. Requirements for natural cut trees and other decorative vegetation.</td>
<td>c. 807.4.3.1</td>
<td></td>
</tr>
<tr>
<td>8. Existing building interior finish requirements based on building occupancy.</td>
<td>d. 805.3.2.1</td>
<td></td>
</tr>
<tr>
<td>9. Requirements for wastebaskets in Group I-3.</td>
<td>e. 803.1.1</td>
<td></td>
</tr>
<tr>
<td>10. Storage of clothing in Group E corridors.</td>
<td>f. 806</td>
<td></td>
</tr>
</tbody>
</table>

Chapter 9: Fire Protection Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>901.9 NEW</td>
<td>Recall of fire protection components</td>
<td>Added new requirement that fire-protection-system components that are subject to voluntary or mandatory recall under federal law are to be replaced and the fire code official notified.</td>
</tr>
<tr>
<td>903.2.1.2</td>
<td>Group A-2</td>
<td>Section has been revised to provide a balanced approach to the identified need to increase the level of safety in night clubs and similar occupancies in light of The Station nightclub fire in Rhode Island. Revising the occupant load threshold down to 100 is consistent with the threshold for requiring panic hardware in Group A occupancies.</td>
</tr>
<tr>
<td>904.11.5.1 NEW</td>
<td>Portable fire extinguishers for solid fuel cooking appliances</td>
<td>Adds specific fire extinguisher requirements for the protection of solid fuel cooking equipment.</td>
</tr>
<tr>
<td>904.11.5.2 NEW</td>
<td>Class K portable fire extinguishers for deep fat fryers</td>
<td>Adds specific fire extinguisher requirements for the protection of deep fat fryers based on the number and size of fryers.</td>
</tr>
</tbody>
</table>
Chapter 9: Fire Protection Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>905.3.7</td>
<td>Marinas and boatyards</td>
<td>Adds a reference to NFPA 303 for standpipe requirements for marinas and boatyards which are typically large, expansive facilities, often built over water. Due to their unique geographical features, fire apparatus access is often difficult or even impossible. Therefore, standpipe systems are essential for their protection.</td>
</tr>
<tr>
<td>907.2</td>
<td>Where required—new buildings and structures</td>
<td>Section has been revised to clarify the intent in requiring alternative detection devices wherever smoke detection cannot be used for environmental reasons. Also, draws a needed distinction between detection and notification and clarifies the applicability of the referenced standard.</td>
</tr>
<tr>
<td>907.2.6 ff</td>
<td>Group I</td>
<td>The commonly misunderstood scope of automatic fire detection required in Group I occupancies by Section 907.2.6 has been eliminated. The 2003 text was often interpreted as requiring fire detection system coverage throughout all Group I facilities whereas the revision more clearly specifies what portions of Group I-1 and I-2 facilities must be so equipped (new Sections 907.2.6.1 and 907.2.6.2, respectively).</td>
</tr>
<tr>
<td>909.8 ff</td>
<td>Exhaust method</td>
<td>Revisions to this section include the replacement of much of the code text with a reference to NFPA 92 which has become a broadly used standard that not only includes most of the code text in this section but also provides additional and more comprehensive design information that is the basis for smoke control system design today. Also, the lowering of the smoke layer from 10 feet to 6 feet in Section 909.8.1 creates consistency with the provisions already in place in Section 1008.5.2.1 for smoke-protected seating.</td>
</tr>
<tr>
<td>914</td>
<td>Fire Protection Requirements Based on Special Detailed Requirements for Use and Occupancy</td>
<td>A new section is added to duplicate all of the fire protection system requirements from Chapter 4 of the IBC to allow the user of the IFC to know if a building is required to be provided with a fire protection system without having to look in the IBC.</td>
</tr>
</tbody>
</table>

Test Your Knowledge

11. A restaurant plans to install a group of 3 deep fat fryers in its cook line. Each of the deep fat fryers uses vegetable oil and has an oil capacity of 65 pounds. How many, what size and what type of portable fire extinguishers are required to protect the hazard posed by these fryers? (See Section 904.11.5.2.)
   a. 2 - 5 pound ABC extinguishers
   b. 2 - 1.5 gallon Class K extinguishers
   c. 1 - 1.5 gallon Class K extinguishers
   d. 1 - 2A10BC-rated extinguisher

Deep Fat Fryer Portable Extinguisher Protection - Section 904.11.5.1
### Chapter 10: Means of Egress

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>102.1</td>
<td>Definitions</td>
<td>Revised definition of 'Accessible Means of Egress’ - An accessible means of egress is similar to a typical means of egress in that it must allow for occupants to reach a public way, although sometimes with assistance. Areas of refuge and horizontal exits are components of an accessible means of egress, not a termination point. Added the definition for 'aisle' - Aisles are defined to clarify the differences between aisles and aisle accessways for all occupancies. Added the definition for 'merchandise pad' - The merchandise pad was defined as part of the proposal to address means of egress requirements in mercantile occupancies. See Section 1014.4.</td>
</tr>
<tr>
<td>103.2</td>
<td>Ceiling height</td>
<td>The minimum ceiling height has been increased to 7'-6&quot;. This will be consistent with Section 1208.2.</td>
</tr>
<tr>
<td>104.1</td>
<td>Design occupant load</td>
<td>The change will clarify that determining occupant load for purposes of means of egress can be the actual load when less than that required by the table.</td>
</tr>
<tr>
<td>Deleted</td>
<td>Actual number</td>
<td>Deleted</td>
</tr>
<tr>
<td>104.1.2</td>
<td>Areas without fixed seating</td>
<td>A maximum floor area per occupant of 35 sq. ft. net was added for day care facilities</td>
</tr>
<tr>
<td>1004.1.1</td>
<td>Number by combination</td>
<td>Using 5 sq. ft. per person as an increased occupant load is a hazard to occupants. The increase to 7 sq. ft. is appropriate to avoid overcrowding, especially in assembly type occupancies.</td>
</tr>
<tr>
<td>1004.2</td>
<td>Increased occupant load</td>
<td>An occupant load is required in fixed seating situations for areas not encompassed by the fixed seating itself, such as standing room, waiting spaces and wheelchair spaces.</td>
</tr>
<tr>
<td>1004.7</td>
<td>Fixed seating</td>
<td>Members voted to delete exceptions in Section 1007 for areas of refuge in sprinklered buildings.</td>
</tr>
<tr>
<td>1007</td>
<td>Accessible Means of Egress</td>
<td>Where platform lifts as part of the accessible route into a space in new construction has been expanded in Section 1109.7. The result of the revisions to this section is that a platform lift can be used as part of the accessible means of egress for the limited occupant spaces (i.e., Items 1-9), but not when the platform lifts were used “where exterior site constraints make use of a ramp or elevator infeasible” (i.e., Item 10). The concern is that in this situation there may be a substantial number of people with disabilities that may need to exit the facility.</td>
</tr>
<tr>
<td>1007.5</td>
<td>Platform lifts</td>
<td>Revised Exception 7 limits the door width exception so that it is not applicable for Group R-1 units, Accessible units, Type A units or Type B units. This is part of the ongoing coordination with new Americans with Disabilities/Architectural Barriers Act (ADA/ABA) Guidelines and the Fair Housing Accessibility Guidelines (FHAG). The result is that all doors within Group R-1 units, Accessible units and Type A units must provide a minimum of 32” clear width and doors within Type B units must provide a minimum of 31-3/4” clear width.</td>
</tr>
<tr>
<td>1008.1.1</td>
<td>Size of doors</td>
<td>The threshold for panic hardware in Groups A and E has been reduced to 50 or more. Panic hardware is required for all Group H, including Group H-4. The new exception resolves a possible conflict with Section 1008.1.8.3, Item 2. The requirement for panic hardware in electrical rooms has been coordinated with the International Electrical Code®.</td>
</tr>
<tr>
<td>1008.1.9</td>
<td>Panic and fire exit hardware</td>
<td>The requirements for enclosure under stairways has been coordinated with the International Residential Code® (IRC®) and relocated from the section dealing with vertical exit enclosures to the section dealing with stairways.</td>
</tr>
<tr>
<td>1009.5.3</td>
<td>Enclosures under stairways</td>
<td></td>
</tr>
</tbody>
</table>

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6
<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1009.11.2</td>
<td>NEW Protection at roof hatch openings</td>
<td>Guards are required when the roof hatch or mechanical equipment is provided within 10’ of a roof edge.</td>
</tr>
<tr>
<td>1010.9</td>
<td>Edge protection</td>
<td></td>
</tr>
<tr>
<td>Deleted</td>
<td>1010.9.1 Railings</td>
<td>The options for edge protection for ramps has been coordinated with ICC/ANSI A117.1-2003.</td>
</tr>
<tr>
<td>1010.9.2</td>
<td>Extended floor or ground surface</td>
<td></td>
</tr>
<tr>
<td>1012</td>
<td>Handrails</td>
<td>Handrail provisions were moved out from within Section 1009, Stairways and Handrails, and into its own section. This will allow clarification for when handrails are used in other locations, such as along ramps.</td>
</tr>
<tr>
<td>1013.5</td>
<td>Mechanical equipment</td>
<td>Guards are required when the roof hatch or mechanical equipment is provided within 10’ of a roof edge.</td>
</tr>
<tr>
<td>1013.6</td>
<td>Roof access</td>
<td>While some editorial changes were made to this section for clarification, the addition of Item 2, Exception 2 was to specify when egress through a back storage area in a mercantile facility would be acceptable.</td>
</tr>
<tr>
<td>1014.2</td>
<td>Egress through intervening spaces</td>
<td>Exception 4 was added. The travel distance for an individual unit in Group R-2 has been increased to 125’ when a NFPA 13 system is provided.</td>
</tr>
<tr>
<td>1014.3</td>
<td>Common path of egress travel</td>
<td></td>
</tr>
<tr>
<td>1014.4.1</td>
<td>Aisles in Groups B and M</td>
<td>Provisions were added to clarify the requirements for aisles and aisle accessways in Group M facilities. See also the new definitions for 'aisle' and 'merchandise pad'.</td>
</tr>
<tr>
<td>1014.4.2</td>
<td>NEW Aisle accessways in Group M</td>
<td></td>
</tr>
<tr>
<td>Table 1015.1</td>
<td>Spaces with One Means of Egress</td>
<td>The maximum occupant load in row 1 was revised to 49 as part of a code wide effort to make the cut-off for provisions consistently between 49 and 50. A maximum occupant load of 10 persons for day care facilities was added to notes for the table.</td>
</tr>
<tr>
<td>1015.2.2</td>
<td>Three or more exits or exit access doorways</td>
<td>The language in this section was revised to coordinate with Section 1015.2.1 ‘Two exit or exit access doorways’ and to eliminate the subjective language (i.e., ‘reasonable distance’) for the location of the third exit. However, to be considered an ‘exit’ all exit doorways must be distinct and independent per Section 1019.1 ‘Minimum number of exits.’ The intent is not to allow two adjacent doors to be considered as two exits.</td>
</tr>
<tr>
<td>Table 1019.2</td>
<td>Building With One Exit</td>
<td>A maximum occupant load of 10 persons for day care facilities was added to notes for the table.</td>
</tr>
<tr>
<td>1020.1</td>
<td>Enclosures required</td>
<td>Revisions were made to Exceptions 1, 3, 8 and 9. Exception 1 was expanded to be available for a stairway that connected a basement and first floor. Exception 3 was expanded to be allowable for within individual Group R-1 units in order to address apartment type hotel rooms. Exceptions 8 and 9 were modified to clarify that open exit stairways must be remotely located the same as enclosed exit stairways.</td>
</tr>
<tr>
<td>1020.1.1</td>
<td>Openings and penetrations</td>
<td>The requirement that elevators cannot open into the exit enclosure was added to be consistent with the same provision for exit discharge passageways.</td>
</tr>
<tr>
<td>1020.1.7.1</td>
<td>Enclosure exit</td>
<td>Exception 3 was added to clarify that a pressurized stairway can use the exit discharge options available in Section 1023.</td>
</tr>
<tr>
<td>1028.4</td>
<td>NEW Exit signs</td>
<td>Added requirements that exit signs be maintained and that exit signs must be unobstructed and readily discernable.</td>
</tr>
<tr>
<td>1028.7</td>
<td>Testing and maintenance</td>
<td>Added requirement that two-way communication systems installed in areas of refuge be inspected and tested annually.</td>
</tr>
</tbody>
</table>
Chapter 15: Flammable Finishes

The organization of Chapter 15 has always been problematic. It has been completely but nontechnically reorganized to more clearly portray the chapter content, make the chapter organization more logical and easily navigable for the code user and enable further study and improvement of the chapter.

### Test Your Knowledge

12. Which of the following is not included in the definition of “Merchandise pad”?
   a. Display of merchandise surrounded by aisles.
   b. Merchandise pads contain display racks and counters.
   c. An area with aisle accessways leading to aisles.
   d. Dressing room areas.

13. What is the maximum number of occupants permitted in a single exit building or space?

14. For day care facilities, what is the minimum area allowed per person when designing a space for maximum occupant load?

15. What option below is not acceptable for edge protection along ramps?
   a. 
   b. 
   c. 

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<table>
<thead>
<tr>
<th>Chapter 15: Flammable Finishes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code Section</strong></td>
</tr>
<tr>
<td>2006</td>
</tr>
<tr>
<td>Chapter 15</td>
</tr>
<tr>
<td>The organization of Chapter 15 has always been problematic. It has been completely but nontechnically reorganized to more clearly portray the chapter content, make the chapter organization more logical and easily navigable for the code user and enable further study and improvement of the chapter.</td>
</tr>
</tbody>
</table>
### Chapter 18: Semiconductor Fabrication Facilities

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1805.2.3.5</td>
<td>Pyrophoric liquids and Class 3 water-reactive liquids</td>
<td>Adds requirements for the storage and use of pyrophoric liquids and Class 3 water-reactive liquids at workstations. As semiconductor technology progresses, newer materials are demanded for semiconductor fabrication at atomic levels using new metal-bearing agents, including a class of materials known as metalorganics which may possess both pyrophoric and water reactive properties. Companion correlation changes also occur throughout Section 1803.</td>
</tr>
</tbody>
</table>

### Test Your Knowledge

Match the subject matter with the corresponding code section. (See entire reorganized chapter.)

<table>
<thead>
<tr>
<th></th>
<th>16. Construction of powder coating rooms.</th>
<th>a. 1503.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17. Design and construction of spray booths.</td>
<td>b. 1504.2</td>
</tr>
<tr>
<td></td>
<td>18. Protection of flammable finish operations from open flames and sparks.</td>
<td>c. 1504.3.2</td>
</tr>
<tr>
<td></td>
<td>19. Requirements for refinishing a 2,800 sq. ft. gymnasium floor.</td>
<td>d. 1505.4.2</td>
</tr>
<tr>
<td></td>
<td>20. Location of spray finishing operations.</td>
<td>e. 1506.3</td>
</tr>
<tr>
<td></td>
<td>21. Portable fire extinguishers for dip tank operations.</td>
<td>f. 1510</td>
</tr>
</tbody>
</table>

### Test Your Knowledge

22. What is the largest capacity container of pyrophoric liquid that is allowed outside of an approved cabinet at an HFM workstation?
   - a. 0.5 gallon
   - b. 5.3 gallons
   - c. 20 gallons
   - d. 2 gallons
### Chapter 22: Motor Fuel-Dispensing Facilities and Repair Garages

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table 2206.2.3</strong></td>
<td><strong>NEW</strong></td>
<td>Minimum Separation Requirements for Above-Ground Tanks</td>
</tr>
<tr>
<td>2206.2.3</td>
<td>The table has been revised to recognize the protection afforded to above-ground tanks installed in vaults by reducing the required clearances in the table.</td>
<td></td>
</tr>
<tr>
<td>2209.3.2.3</td>
<td><strong>NEW</strong></td>
<td>Indoors</td>
</tr>
<tr>
<td></td>
<td>New provisions for the inside generation, compression, storage and dispensing of hydrogen have been added. To correlate with these new provisions, new requirements for “hydrogen cutoff rooms” have also been added to IBC Chapter 4.</td>
<td></td>
</tr>
<tr>
<td>2209.3.2.6 ff</td>
<td><strong>NEW</strong></td>
<td>Canopy tops</td>
</tr>
<tr>
<td></td>
<td>New provisions for installation of gaseous hydrogen compression and storage equipment on motor fuel-dispensing facility canopies have been added. Construction requirements for such canopies have also been added to the IBC, Section 406.</td>
<td></td>
</tr>
<tr>
<td>2211.7.1.1</td>
<td>2211.7.1.1</td>
<td>Design</td>
</tr>
<tr>
<td></td>
<td>Provides a needed safety feature in the form of a continuously monitoring flammable gas detection system to monitor hydrogen gas in repair garages servicing hydrogen-powered vehicles.</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table 2703.1.1(1)</strong></td>
<td><strong>NEW</strong></td>
<td>Maximum Allowable Quantity per Control Area of Hazardous Materials Posing a Physical Hazard</td>
</tr>
<tr>
<td>2703.1.1(1)</td>
<td>On the new table, Note p exempts certain liquid or gaseous fuels when determining the maximum allowable quantities (MAQs).</td>
<td></td>
</tr>
<tr>
<td>2703.2.9 ff</td>
<td><strong>NEW</strong></td>
<td>Testing</td>
</tr>
<tr>
<td></td>
<td>New section provides the necessary provisions for testing needed in the code to ensure that the equipment, devices and systems used with hazardous materials will perform as intended and represents a consensus among the fire service and the Semiconductor Industry Association on this topic.</td>
<td></td>
</tr>
<tr>
<td>Table 2703.8.3</td>
<td><strong>NEW</strong></td>
<td>Design and Number of Control Areas</td>
</tr>
<tr>
<td>2703.8.3.2</td>
<td>The two control areas-only limitation for Groups M and S has been eliminated by deletion of Note b to the table. This will allow Group M and S occupancies to be treated the same as any other Group in terms of control areas allowed and prevent certain occupancies (e.g., drug, hardware, paint and automotive parts stores) from being prohibited in certain buildings, such as strip malls.</td>
<td></td>
</tr>
<tr>
<td>2703.8.3.4</td>
<td><strong>NEW</strong></td>
<td>Fire-resistance rating requirements</td>
</tr>
<tr>
<td>2703.8.3.3</td>
<td>An exception is added that recognizes the combination of a 1 hour floor assembly plus a sprinkler system as sufficient protection in certain construction types, thus easing the significant expense impact of providing floor separations in existing buildings, especially Group B laboratory occupancies.</td>
<td></td>
</tr>
</tbody>
</table>
Test Your Knowledge

23. In determining the maximum allowable quantity per control area of flammable liquids in a building, quantities of liquid contained in the fuel tanks of vehicles stored inside the building are included.
   a. True
   b. False

24. Which of the following is an acceptable testing frequency for automatic emergency shutoff valves for highly toxic gases?
   a. Every 5 years
   b. Biennially
   c. Not less than annually
   d. Whenever the valve is operated

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2006</td>
<td>Retail Display</td>
</tr>
</tbody>
</table>

Test Your Knowledge

25. What is the maximum net weight of level 2 aerosol products, stored 7 feet high, allowed in an unprotected retail display area located on the ground floor of a Group M building?
   a. 2,000 pounds
   b. 10,000 pounds
   c. 2,500 pounds
   d. 500 pounds
Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would include:
   - Prohibition is added on the burning of incense, candles or other open flame producing items in dormitory sleeping units (Section 308.3.8).
   - Annual fire drill frequency is added for high-rise buildings (Table 405.2).
   - A section has been added to address minimum safety requirements for the use of portable, electric space heater within any occupancy (Section 605.10).
   - A section has been added to incorporate specific fire extinguisher requirements pertaining to deep fat fryers (Section 904.11.5.2).
   - A section has been added on requirements for the storage and use of pyrophoric liquids and Class 3 water-reactive liquids at workstations (Section 1805.2.3.5).

2. Answers will vary. For example, an acceptable answer would be:
   - Section 308.3.8 was added to reduce hazards associated with the use of open flames in the close confines of dormitory living.

3. No

4. Answers will vary. For example, acceptable answers would include:
   - Walls
   - Fire stops
   - Shaft enclosures
   - Partitions
   - Smoke barriers
   - Floors
   - Fire resistive coatings and sprayed fire-resistant materials applied to structural members
   - Fire-resistive joint systems.

5. e (Section 803.1.1)
6. d (Section 805.3.2.1)
7. f (Section 806)
8. a (Section and Table 803.3)
9. b (Section 808.1)
10. c (Section 807.4.3.1)
11. c (Section 904.11.5.2)
12. d (Section 1002.1)
13. 10 occupants (Table 1015.1, Table 1019.2)
14. 7 sq. ft. per person of occupiable floor space (Section 1004.2)
15. c (Section 1010.9)
16. e (Section 1506.3)
17. c (Section 1504.3.2)
18. a (Section 1503.2.2)
19. f (Section 1510)
20. b (Section 1504.2)
21. d (Section 1505.4.2)
22. a (Section 1805.2.3.5)
23. b (Table 2703.1.1(1), Note p)
24. c (Sections 2703.2.9.1, Item 1 and 2303.2.9.2, Item 1)
25. c (Section 2806.2 and Table 2806.2.1)
The 2006 *International Mechanical Code*® (IMC®) code changes help resolve common interpretation problems and provide clarity of the content. The code has also undergone many technical changes to reflect current design, construction and inspection methods.

**Scope**

The scope of the IMC continues to include the initial design of mechanical systems through the installation and construction phases and into the maintenance of operating systems. As in the 2003 IMC, the liquid and solid types of fuel, as well as electrically powered appliances, are addressed in the 2006 IMC. Fuel-gas appliances and systems are addressed in the 2006 *International Fuel Gas Code*® (IFGC®).

In order to keep the IMC up-to-date on new technology, requirements for a water-leveling monitoring device and an emergency pressure control system have been added to assist designers, installers and inspectors as the demand for safety devices increases.

**Intent**

It is necessary to have a modern, up-to-date code to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the:

- Design
- Construction
- Installation
- Quality of materials
- Location
- Operation and maintenance
- Use of mechanical systems

**Content**

- Chapter 1: Administration
- Chapter 2: Definition
- Chapter 3: General Regulations
- Chapter 4: Ventilation
- Chapter 5: Exhaust Systems
- Chapter 6: Duct Systems
- Chapter 7: Combustion Air
- Chapter 8: Chimneys and Vents
- Chapter 9: Special Appliances, Fireplaces and Solid Fuel Burning Equipment
- Chapter 10: Vessels
- Chapter 11: Refrigeration
- Chapter 12: Hydronic Piping
- Chapter 13: Fuel Oil Piping and Storage
- Chapter 14: Solar Systems
## Chapter 2: Definition

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>Definitions</td>
<td>Adds and revises several definitions to clarify new or existing terms used in the code.</td>
</tr>
</tbody>
</table>

## Chapter 3: General Regulations

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.4</td>
<td>Listed and labeled</td>
<td>Adds a requirement that appliances must be listed and labeled for the application in which they are installed. This code change is intended to prevent the use of an appliance in an application for which it has not been tested. For example, a fan that is listed for bathroom exhaust systems should not be used in a kitchen grease hood exhaust application.</td>
</tr>
<tr>
<td>304.4</td>
<td>Hydrogen-generating and refueling operations</td>
<td>Deletes the limitation of 3 vehicles that can be located in a space containing hydrogen-generating appliances or refueling systems. Relocates the maximum floor area and rated output capacity to Section 304.4.1.</td>
</tr>
<tr>
<td>304.10</td>
<td>Guards</td>
<td>In addition to appliances and other components that require service, this section is now applicable to roof hatch openings located within 10 feet of the roof edge (See Figure 304.10).</td>
</tr>
<tr>
<td>306.3</td>
<td>Appliances in attics</td>
<td>Adds an exception to each section that allows the access passageway to the appliances to be extended to 50 feet in an attic and unlimited in length under floors if the passageway has a minimum height of 6 feet and width of 22 inches for the entire length.</td>
</tr>
<tr>
<td>306.4</td>
<td>Appliances under floors</td>
<td>Adds a requirement that drain pans are under fuel-fired appliances that produce condensate with an exception for appliances that shut down when a blockage occurs in the condensate drain system (See Figure 307.2.3). Adds a fourth method of preventing pan overflow which uses a water-level detection device, installed in the factory-supplied drain pan or the primary drain line, to shut down the appliance. Evaporators and cooling coils are no longer the only equipment that produce condensate. Condensing furnaces also produce condensate and are equally subject to blockages that result in overflow and damage to the building. The exception recognizes that some condensing furnaces are designed to automatically shut down in the event of a blockage, thus stopping the production of condensate. The fourth method of protection allows a water-level detection device, installed in the factory-supplied drain pan or the drain line from the pan, to shut off the equipment.</td>
</tr>
<tr>
<td>307.2.3</td>
<td>Auxiliary and secondary drain systems</td>
<td>Adds a requirement for downflow package units and other coils with no secondary drain pan to have a water-level detection device installed in the primary drain pan to shut down the appliance.</td>
</tr>
<tr>
<td>307.2.3.1</td>
<td>Water-level monitoring devices</td>
<td>Adds a requirement for downflow package units and other coils with no secondary drain pan to have a water-level detection device installed in the primary drain pan to shut down the appliance.</td>
</tr>
</tbody>
</table>
1. Which auxiliary or secondary drain system for capturing condensate is not allowed by the code?
   a. An auxiliary pan installed beneath the factory-supplied pan with a separate drain line connected to the building sewer.
   b. An auxiliary pan installed beneath the factory-supplied pan with a water-level detection device in the pan to shut off the appliance.
   c. A water level detection device installed in the factory-supplied drain pan to shut off the appliance.
   d. None of the above.
Auxiliary Drain Pan Required (with or without cooling coil)
Figure 307.2.3
### Chapter 4: Ventilation

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>403.2</td>
<td>Outdoor air required</td>
<td>Adds a new exception that allows a reduction of required outdoor air when an engineered ventilation system design prevents the maximum concentration of contaminants from exceeding that obtained by using Section 403.3.</td>
</tr>
<tr>
<td>403.2.1</td>
<td>Recirculation of air</td>
<td>Adds an exception to Section 403.2.1 and Footnote “h” to Table 403.3 to allow recirculation of air exhausted from spaces, such as locker rooms and swimming pools, where not more than 10% of the airstream consists of air exhausted from such spaces.</td>
</tr>
<tr>
<td>Table 403.3</td>
<td>Recirculation of Air</td>
<td>Revision relaxes the absolute ban on recirculating air exhausted from locker rooms, bathrooms and swimming pools to be consistent with ASHRAE 62. Up to 10% of the supply airstream is now allowed to consist of air exhausted from such spaces to facilitate recovering the energy from the exhaust air with an Energy Recovery Ventilation System (ERV).</td>
</tr>
<tr>
<td>404.1</td>
<td>Enclosed parking garages</td>
<td>Revised to permit intermittent operation of mechanical ventilation equipment using automatic detection devices that start the fans upon detection of the presence of vehicles or occupants.</td>
</tr>
</tbody>
</table>

### Chapter 5: Exhaust Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>501.3</td>
<td>Pressure equalization</td>
<td>Revised to clarify that make-up air must consist of either supply air, transfer air or outdoor air. Air infiltration alone cannot supply the required make-up air.</td>
</tr>
<tr>
<td>506.3.4</td>
<td>Air velocity</td>
<td>Revised to reduce the air velocity in a grease duct serving a Type I hood from 1500 feet per minute to 500 feet per minute.</td>
</tr>
<tr>
<td>506.3.10</td>
<td>Grease duct enclosure</td>
<td>Provides two exceptions to the shaft requirements for grease ducts and two standards for evaluating the duct enclosure system, ASTM E2336 and UL 2221.</td>
</tr>
<tr>
<td>507.1</td>
<td>General</td>
<td>Revised to require exhaust hoods to operate during cooking operations in commercial kitchens. It is important for the kitchen exhaust hood to be in operation any time cooking operations are being performed to ensure removal of smoke and grease-laden air, cooking odors and excess heat. This section does not require an interlock between the hood and the cooking appliance as is required in the IFGC. Manual operation of the hood, heat sensors, interlocks or other methods approved by the code official would be allowed to achieve compliance with this requirement.</td>
</tr>
<tr>
<td>507.2.11</td>
<td>Operation</td>
<td>Requires exhaust hoods to automatically operate during cooking operations in commercial kitchens by means of an electrical interlock or heat sensors or other approved means.</td>
</tr>
<tr>
<td>507.2.2</td>
<td>Type II hoods</td>
<td>Adds two exceptions to allow various appliances to operate without a Type II hood if the additional heat and moisture from the appliances is accounted for in the design of the HVAC system.</td>
</tr>
<tr>
<td>Code Section</td>
<td>Section Title</td>
<td>Change</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>510.1</td>
<td>Hazardous exhaust systems</td>
<td>Revised to allow less stringent requirements for hazardous exhaust systems in laboratory environments. Defines a laboratory facility that would qualify for these requirements.</td>
</tr>
<tr>
<td>510.2</td>
<td>510.2</td>
<td></td>
</tr>
<tr>
<td>510.4</td>
<td>510.4</td>
<td></td>
</tr>
<tr>
<td>510.7</td>
<td>510.7</td>
<td></td>
</tr>
<tr>
<td>510.6.1</td>
<td>510.6.4</td>
<td>Fire dampers Revised to clarify that fire dampers are prohibited in hazardous exhaust ducts.</td>
</tr>
<tr>
<td>511.1.3</td>
<td>511.1.3</td>
<td>Conveying systems exhaust discharge Revised to allow recirculation of exhausted air from dust, stock and refuse systems if the particulates have been removed to specified parameters.</td>
</tr>
</tbody>
</table>

### Test Your Knowledge

2. Which of the following appliances requires a Type II hood to be installed above the appliance?
   a. coffee maker
   b. warming oven
   c. hot dog cooker
   d. none of the above

3. The minimum air velocity in a grease duct serving a Type I hood is:
   a. 1,500 feet per minute
   b. 1,000 feet per minute
   c. 750 feet per minute
   d. 500 feet per minute
### Chapter 6: Duct Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>602.2.1</td>
<td>Materials exposed within plenums</td>
<td>Deletes the word “exposed” concerning materials in plenums to prohibit wrapping a plastic pipe in a material that does not comply with ASTM E84 and claiming it is no longer exposed in the plenum.</td>
</tr>
<tr>
<td>603.9</td>
<td>Joints, seams and connections</td>
<td>Adds specific UL 181 markings for various types of tapes and mastics, such as UL 181 A-H for heat-sensitive tape. Adds a requirement for mechanical fasteners for use with flexible ducts to comply with UL 181B.</td>
</tr>
<tr>
<td>604.3</td>
<td>Coverings and linings</td>
<td>Revised to include the specimen preparation and mounting procedures of ASTM E 2231 when materials are tested in accordance with ASTM E 84.</td>
</tr>
<tr>
<td>607.5.5</td>
<td>Shaft enclosures</td>
<td>Revised the second exception to allow shaft penetrations using the subduct method in Group B and R occupancies without smoke dampers where the building is sprinklered.</td>
</tr>
</tbody>
</table>

### Chapter 8: Chimneys and Vents

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>805.2</td>
<td>Solid fuel appliances</td>
<td>Revised to prescribe the markings required for factory-built chimneys installed in dwelling units with exceptions for chimneys used with open combustion chamber fireplaces in both residential and nonresidential occupancies.</td>
</tr>
</tbody>
</table>

### Chapter 11: Refrigeration

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1105.9</td>
<td>Emergency pressure control system</td>
<td>Adds a new section to require an emergency pressure control system where a refrigeration system contains more than 6.6 pounds of flammable, toxic or highly toxic refrigerant or ammonia.</td>
</tr>
</tbody>
</table>

---

Test Your Knowledge

4. An emergency pressure control system is required where the refrigeration system contains more than ____________ pounds of toxic or flammable refrigerant or ammonia.
Chapter 13: Fuel Oil Piping and Storage

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1301.5</td>
<td>Tanks abandoned or removed</td>
<td>Adds a new requirement to remove exterior above-grade piping when an oil tank is abandoned or removed. Requires that the outside pipe used to fill fuel oil tanks must be removed, not just capped. There have been instances where the supplier mistakenly pumped fuel oil into a basement because the tank had been removed but the operator could not detect that the existing pipe was not connected to a tank.</td>
</tr>
</tbody>
</table>

Answers to Test Your Knowledge

1. A (Section 307.2.3 - The drain line must discharge to a conspicuous point for observation.)
2. D (Section 507.2.2)
3. D (Section 506.3.4)
4. 6.6 (Section 1105.9)
International Plumbing Code

The 2006 International Plumbing Code® (IPC®) continues to emphasize both prescriptive and performance-related provisions. The code change cycles have made many improvements to the 2006 IPC that provide clarity of content and resolve common interpretation issues.

Scope

The scope of the 2006 IPC continues to encompass the initial design of the plumbing system, the installation and construction of plumbing systems and the maintenance of operating systems. All plumbing systems that are provided for utilization by and for the general safety and well-being of the occupants of a building are intended to be governed by the code.

Standard Use

As both a prescriptive and performance-based code, the IPC contains numerous references to standards that are used to regulate materials and methods of construction. A standard that is incorporated into the code through the code development process is an enforceable part of the code. Standards are referenced throughout the code and are listed in Chapter 14.

Test your knowledge

1. List five significant changes from the 2003 IPC to the 2006 IPC.
   - 
   - 
   - 
   - 
   - 

2. Explain the significance of one of the above changes.
   
   
   

Content

- Chapter 2: Definitions
- Chapter 3: General Regulations
- Chapter 4: Fixtures, Faucets and Fixture Fittings
- Chapter 6: Water Supply and Distribution
- Chapter 7: Sanitary Drainage
- Chapter 9: Vents
- Chapter 10: Traps, Interceptors and Separators
- Chapter 11: Storm Drainage
- Appendix C: Gray Water Recycling Systems
### Chapter 2: Definitions

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>Definitions</td>
<td>Branch Interval is further defined by referring to the distance between connections of horizontal branches to a drainage stack. Measurements are taken down the stack from the highest horizontal branch connection. [See Figures 202(1) and 202(2)].</td>
</tr>
<tr>
<td>202</td>
<td>Definitions</td>
<td>New definitions for Flow Control (vented) and Grease Removal Device, Automatic are added. These new definitions correlate with the revised requirements for grease removal devices and rate of flow controls found in Chapter 10. The definition for grease trap was deleted because all grease traps are now called grease interceptors. [See Figure 202(3)].</td>
</tr>
</tbody>
</table>

**Definition of Branch Interval**

Figure 202(1)
Definition of Branch Interval
Figure 202(2)
Chapter 3: General Regulations

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 310.5</td>
<td>NEW Urinal partitions</td>
<td>Provisions added to require partitions between urinals. Exceptions exempt single occupant or unisex toilet rooms with a lockable door and exempt a single urinal in a daycare or child care facilities with two or more urinals. [See Figures 310.5(1) and (2)].</td>
</tr>
<tr>
<td>314.2.3 #4</td>
<td>314.2.3 Condensate disposal</td>
<td>A fourth option has been added for a primary condensate pan water level detection device. [See Figures 307.2.3(1) through (3)].</td>
</tr>
</tbody>
</table>
Condensate Overflow Switch
(Photo courtesy of SMD Research, Inc)
Figure 307.2.3(1)

Condensate Overflow Switch
(Photo courtesy of SMD Research, Inc)
Figure 307.2.3(2)

Primary or Auxiliary Drain Pan Float Switch
(Photo courtesy of SMD Research, Inc)
Figure 307.2.3(3)
Urinal Partitions
(Photo courtesy of Falcon Waterfree Technologies)
Figure 310.5(1)

Plan View

18" MINIMUM OR 6" BEYOND LIP, WHICHER IS GREATER

Elevation View

60" MINIMUM

12" MAXIMUM

Urinal Partitions
Figure 310.5(2)
3. Partitions required between urinals must extend:
   a. 18” minimum from the wall in all cases.
   b. 6” minimum beyond the urinal lip in all cases.
   c. 18” from the wall, or 6” beyond the urinal lip; whichever is greater.
   d. 12” maximum from the wall.

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2003</td>
<td>403.1 Outdoor seating area occupant load</td>
<td>A new footnote is added to Table 403.1 and requires outdoor seating area occupant loads to be added to indoor occupant loads for A-1, A-2 and A-3 occupancies for the purpose of determining the required number of fixtures.</td>
</tr>
<tr>
<td>2006 2003</td>
<td>403.4 Required public toilet facilities</td>
<td>Public toilet facilities cannot be accessed through kitchens and storage spaces. (See Figure 403.6).</td>
</tr>
<tr>
<td>2006 2003</td>
<td>406.3 Clothes washer waste connection</td>
<td>The required text recognizes that gravity draining clothes washing machines need to discharge to a waste receptor such as a trench drain. (See Figure 406.3).</td>
</tr>
<tr>
<td>2006 2003</td>
<td>403.1 Outdoor seating area occupant load</td>
<td>A new footnote is added to Table 403.1 and requires outdoor seating area occupant loads to be added to indoor occupant loads for A-1, A-2 and A-3 occupancies for the purpose of determining the required number of fixtures.</td>
</tr>
<tr>
<td>2006 2003</td>
<td>403.6 Public toilet facilities</td>
<td>Public toilet facilities cannot be accessed through kitchens and storage spaces. (See Figure 403.6).</td>
</tr>
<tr>
<td>2006 2003</td>
<td>406.3 Clothes washer waste connection</td>
<td>The required text recognizes that gravity draining clothes washing machines need to discharge to a waste receptor such as a trench drain. (See Figure 406.3).</td>
</tr>
<tr>
<td>2006 2003</td>
<td>408.3 Bidet water temperature</td>
<td>An ICC appointed Ad Hoc Committee on Water Temperature and Control evaluated the types of hazards and applications where scalding and thermal shock can occur, identifying plumbing fixtures and equipment that require temperature control limits and the appropriate standards for control devices. The code requires a maximum discharge water temperature from bidet fittings of 110°F to be provided by a water temperature limiting device conforming to ASSE 1070. [See Figures 408.3(1) and (2)].</td>
</tr>
<tr>
<td>2006 2003</td>
<td>416.5 Tempered water for public hand-washing facilities</td>
<td>The code requires that tempered water be delivered from public hand-washing facilities. Tempered water must be provided by an approved water temperature limiting device that conforms to ASSE 1070. [See Figures 416.5(1) and (2)].</td>
</tr>
<tr>
<td>2006 2003</td>
<td>419.1 Urinals</td>
<td>Waterless urinals are distinguished from water-supplied urinals. [See Figures 419.1(1) and (2)].</td>
</tr>
<tr>
<td>2006 2003</td>
<td>419.2 Substitution for water closets</td>
<td>Substitution allowance is reduced to 50% maximum for occupancies other than A and E (remains 67% for A and E).</td>
</tr>
<tr>
<td>2006 2003</td>
<td>421.5 Access to pump</td>
<td>A new section is added to address the access requirements for whirlpool tub circulation pumps. [See Figures 421.5(1) and (2)].</td>
</tr>
<tr>
<td>2006 2003</td>
<td>424.4 Multiple (gang) showers</td>
<td>Water temperature limiting devices for gang showers supplied with a single-tempered water supply pipe must comply with ASSE 1069 or CSA B125. The option of using an individually controlled balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve for each shower head requires that such controls conform to ASSE 1016 or CSA B125. [See Figures 424.4(1) and (2)].</td>
</tr>
<tr>
<td>2006 2003</td>
<td>424.5 Bathtub and whirlpool bathtub valves</td>
<td>Bathtubs and whirlpool bathtubs must be provided with a water temperature limiting device that conforms to ASSE 1070, except where such protection is otherwise provided by a combination tub/shower valve that conforms to ASSE 1016 or CSA B125. The maximum setting of such devices is limited to 120°F. [See Figures 424.5(1) and (2)].</td>
</tr>
</tbody>
</table>
Customer Toilet Access
Figure 403.6

Clothes Washer Trench Drain
Figure 406.3
Waterless Urinal
(Photo courtesy of Falcon Waterfree Technologies)
Figure 419.1(1)

Waterless Urinal Cartridge
(Photo courtesy of Falcon Waterfree Technologies)
Figure 419.1(2)
### Plumbing Fixture Maximum Discharge Temperature Reference Standard

<table>
<thead>
<tr>
<th>Plumbing Fixture</th>
<th>Maximum Discharge Temperature</th>
<th>Reference Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bidet</td>
<td>$\leq 110^\circ F$</td>
<td>ASSE 1070</td>
</tr>
<tr>
<td>2. Public hand-washing facilities</td>
<td>$&gt; 85^\circ F$ and $&lt; 110^\circ F$</td>
<td>ASSE 1070</td>
</tr>
<tr>
<td>3. Individual shower valves</td>
<td>$\leq 120^\circ F$</td>
<td>ASSE 1016 or CSA B125</td>
</tr>
<tr>
<td>4. Multiple (gang) showers</td>
<td>$\leq 120^\circ F$</td>
<td>ASSE 1069 or CSA B125</td>
</tr>
<tr>
<td>5. Bathtub/whirlpool bathtubs</td>
<td>$\leq 120^\circ F$</td>
<td>ASSE 1070, Optional Combination tub/shower valve conforming to ASSE 1016 or CSA B125</td>
</tr>
</tbody>
</table>

*Figures 408.3, 416.5, 424.4, 424.5 (1)*

*Figures 408.3, 416.5, 424.4, 424.5(2)*
4. List five plumbing fixtures that have water temperature limitations in the 2006 IPC. List the maximum discharge temperature and appropriate referenced standard for the control devices.

<table>
<thead>
<tr>
<th>Plumbing Fixture</th>
<th>Maximum Discharge Temperature</th>
<th>Reference Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. In a business occupancy, a designer may choose to substitute urinals for what maximum percentage of the required number of water closets?

---

**Chapter 6: Water Supply and Distribution**

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>607.1</td>
<td>Where required</td>
<td>Where tempered water is supplied in nonresidential occupancies for bathing and washing purposes, it must be tempered by a device conforming to ASSE 1070. The tempered water is limited to a maximum temperature of 110°F.</td>
</tr>
<tr>
<td>608.16.10</td>
<td>Coffee machines and noncarbonated beverage dispensers</td>
<td>New requirements address backflow protection for the water supply connection to coffee machines and noncarbonated beverage dispensers. The connections must be protected against backflow by a device conforming to ASSE 1022 or by an air gap.</td>
</tr>
</tbody>
</table>

**Chapter 7: Sanitary Drainage**

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>706.4</td>
<td>Heel- or side-inlet quarter bends</td>
<td>Heel inlet elbows, both high- and low-inlet types, are specifically addressed regarding allowed and disallowed applications. [See Figures 706.4(1) and (2)].</td>
</tr>
<tr>
<td>Table 709.1</td>
<td>DFU’s for Fixtures and Groups</td>
<td>A DFU value of 0.5 is assigned to nonwater supplied urinals. [See Figures 419.1(1) and (2)].</td>
</tr>
</tbody>
</table>
NO LIMITATIONS BY SECTION 706.4

1/4 BEND WITH SIDE INLET

1/4 BEND WITH HIGH-HEEL INLET

1/4 BEND WITH LOW-HEEL INLET

NOT ALLOWED FOR WATER CLOSET DRAINS
AND NOT ALLOWED FOR
CONNECTION OF A WET-
VENTED FIXTURE DRAIN

Heel- and Side-Inlet Quarter Bends
Figure 706.4(1)

Side-Inlet Quarter Bend
Figure 706.4(2)

Test your knowledge

6. Do you notice any code violation in Figure 706.4(2)?

7. A coffee machine with a water supply connection must be protected against backflow by an air gap or by a device conforming to:
<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>903.1</td>
<td>Outdoor vent extension</td>
<td>The traditional “main vent” rule has been rewritten to restate and clarify the intent. The “undiminished in size” and “directly as possible” text has been deleted. (See Figure 903.1).</td>
</tr>
<tr>
<td>903.1.1</td>
<td>Installation</td>
<td></td>
</tr>
<tr>
<td>903.1.2</td>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>Table 906.1</td>
<td>Maximum Distance of Trap from Vent</td>
<td>The new replacement table reflects the principle stated in revised Section 906.2. (See Figure 906.1(2)).</td>
</tr>
<tr>
<td>906.1</td>
<td>Distance of trap from vent</td>
<td>Water closets are now exempt from the “trap to vent distance” rule. (See Figure 906.1(1)).</td>
</tr>
<tr>
<td>906.2</td>
<td>Venting of fixture drains</td>
<td>New language states that the total fall in a fixture drain resulting from pipe slope must not exceed the inside diameter of the fixture drain. (See Figure 906.2).</td>
</tr>
<tr>
<td>910.2</td>
<td>Stack installation</td>
<td>The text has been clarified regarding offsets in the stack both above the highest fixture drain connection and below the lowest fixture drain connection. (See Figure 910.2).</td>
</tr>
<tr>
<td>910.3</td>
<td>Stack vent</td>
<td>The revised text makes it apparent that the stack vent for waste-stack vent systems can connect to vent headers with other vents. (See Figure 910.3).</td>
</tr>
<tr>
<td>912.2</td>
<td>Installation</td>
<td>As revised, this section now allows a vertical pipe component for all fixtures that are permitted to connect to a combination drain and vent system, including floor drains. (See Figure 912.2).</td>
</tr>
</tbody>
</table>

**Figure 903.1**

**Required Vent to Outdoors**

*Figure 903.1*
Table 906.1(2)
MAXIMUM DISTANCE OF FIXTURE TRAP FROM VENT

<table>
<thead>
<tr>
<th>Size of Trap (inches)</th>
<th>Slope (inch per foot)</th>
<th>Distance from Trap (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/4</td>
<td>1/4</td>
<td>5</td>
</tr>
<tr>
<td>1 1/2</td>
<td>1/4</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>1/4</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>1/8</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>1/8</td>
<td>16</td>
</tr>
</tbody>
</table>

Figure 906.1(2)

Maximum Fall of Fixture Drain Between Trap and Vent
Figure 906.2
Vertical Fixture Drain Component in Combination Drain and Vent System
Figure 912.2

Waste Stack Vent Offsets and Stack Vent Connections
Figures 910.2 and 910.3
Chapter 10: Traps, Interceptors and Separators

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1003.3.1</td>
<td>Grease interceptors and automatic grease removal devices required</td>
<td>Additional language is added to include automatic grease removal devices and list the type of fixtures and equipment with grease-laden waste that must discharge to such interceptors.</td>
</tr>
<tr>
<td>1003.3.5</td>
<td>NEW Automatic grease removal devices</td>
<td>New language addresses automatic grease removal devices and their installation and sizing requirements. (See Figure 1003.3.5).</td>
</tr>
<tr>
<td>1003.4</td>
<td>Oil separators required</td>
<td>As revised, this section will require oil separators for all car washing facilities.</td>
</tr>
<tr>
<td>1003.6</td>
<td>Laundries</td>
<td>New text provides clarification regarding laundry facilities not installed within an individual dwelling unit or intended for individual family use.</td>
</tr>
</tbody>
</table>

**Automatic Grease Removal Devices**

*Figure 1003.3.5*

**Test your knowledge**

8. Six residential clothes washing machines are installed in the laundry room of an apartment building. Does this type of installation require any type of interceptor or similar device?
Appendix C: Gray Water Recycling Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 Appendix C</td>
<td>Gray Water Recycling Systems</td>
<td>New text provides greater detail and specifications of gray water systems for flushing of water closets and urinals and subsurface landscape irrigation. (See Figures C1 and C2).</td>
</tr>
</tbody>
</table>

Gray Water Recycling System for Fixture Flushing
Figure C1
Gray Water Recycling System for Subsurface Irrigation
Figure C2
Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would include:
   - There are new definitions for flow control (vented) and grease removal device, automatic (Section 202).
   - Provisions were added to address urinal partitions (Section 310.5).
   - There are new requirements that address backflow protection for the water supply connection to coffee machines and noncarbonated beverage dispensers (Section 608.16.10).

2. Answer will vary. For example, an acceptable answer would be:
   - In Section 202, new definitions correlate with the revised requirements for grease removal devices and the rate of flow controls located in Chapter 10.

3. c. 18” from the wall or 6” beyond the urinal lip; whichever is greater.

4. |
<table>
<thead>
<tr>
<th>Plumbing Fixture</th>
<th>Maximum Discharge Temperature</th>
<th>Reference Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bidet</td>
<td>110°F</td>
<td>ASSE 1070</td>
</tr>
<tr>
<td>2. Public hand-washing facilities</td>
<td>&gt; 85°F and &lt; 110°F</td>
<td>ASSE 1070</td>
</tr>
<tr>
<td>3. Individual shower valves</td>
<td>120°F</td>
<td>ASSE 1016 or CSA B125</td>
</tr>
<tr>
<td>4. Multiple (gang) showers</td>
<td>120°F</td>
<td>ASSE 1069 or CSA B125</td>
</tr>
<tr>
<td>5. Bathtub/whirlpool bathtubs</td>
<td>120°F</td>
<td>ASSE 1070, Optional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Combination tub/shower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>valve conforming to ASSE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1016 or CSA B125</td>
</tr>
</tbody>
</table>

5. 50 percent

6. The floor joist cut violates the structural provisions of the IRC and IBC.

7. ASSE 1022

8. Yes. An interceptor with a wire basket or similar device.
Fuel Gas Code

The 2006 *International Fuel Gas Code*® (IFGC®) contains all code coverage for fuel-gas-related installations in one convenient document. The IFGC is designed to coordinate with the family of International Codes, including the *International Mechanical Code*® (IMC®), *International Plumbing Code*® (IPC®), *International Fire Code*® (IFC®) and *International Building Code*® (IBC®). The content of the IFGC is affected by both the ICC code development process and the ANSI Z223.1 (NFGC) code development process. The IFGC is produced in cooperation with the American Gas Association (AGA).

**Scope**

The IFGC regulates:

- Fuel gas distribution piping systems,
- Gas-fired appliance installation, and
- Gas-fired appliance venting systems.

All fuel-gas-related coverage, including material formerly found in other I-Codes is located in the IFGC. The IFGC does not cover all systems associated with gas-fired appliances. For example, hydronic piping, refrigeration and ductwork can be part of a system containing a gas-fired appliance, but such subjects are regulated by the IMC.

**Test your knowledge**

1. List three changes from the 2003 IFGC to the 2006 IFGC.
   - 
   - 
   - 

2. Explain the significance of one of the above changes.
   
   

**Content**

- Chapter 1: Administrative
- Chapter 3: General Regulations
- Chapter 4: Gas Piping Installations
- Chapter 5: Chimney and Vents
- Chapter 6: Specific Appliances
- Chapter 7: Gaseous Hydrogen Systems
### Chapter 3: General Regulations

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.3</td>
<td>Listed and labeled</td>
<td>The code is clarified in its intent that appliances be installed and used in a manner consistent with the nature of their listing. This will prevent an appliance from being used in an application other than for what it was listed.</td>
</tr>
<tr>
<td>303.3</td>
<td>Prohibited locations</td>
<td>Text was completely reorganized to improve understanding and clarify the requirements for appliance enclosures that are accessed from the listed locations. Also, Item #2 was expanded to include gas fireplaces and gas fireplace heaters. (See Figure 303.3)</td>
</tr>
<tr>
<td>303.4</td>
<td>Protection from vehicle impact</td>
<td>The focus on this section has been narrowed to vehicle impact damage and the scope of the means of protection has been widened. (see Figure 303.4)</td>
</tr>
<tr>
<td>304.11</td>
<td>Combustion air ducts</td>
<td>The text was clarified regarding alternatives to galvanized steel ducts. Alternatives must have strength, rigidity and corrosion resistance equivalent to galvanized steel.</td>
</tr>
<tr>
<td>306.6</td>
<td>Guards</td>
<td>In addition to appliances and other components that require service, this section is now applicable to roof hatch openings located within 10 feet of the roof edge. (See Figure 306.6)</td>
</tr>
<tr>
<td>307.5</td>
<td>Auxiliary drain pan</td>
<td>Category IV condensing appliances are now required to be provided with auxiliary drain pans where condensate leakage would result in damage to the building. This is similar to what the IMC requires for cooling coils. An exception recognizes appliances that shut themselves off in the event of drain system failure. (See Figure 307.4)</td>
</tr>
</tbody>
</table>

---

**Figure 303.3**

Appliance Enclosure

**Figure 303.3**
ALCOVE CONTAINING FURNACE AND WATER HEATER

APPLIANCE PROTECTION BY MEANS OF LOCATING APPLIANCES OUT OF THE VEHICLE'S NORMAL TRAVEL PATH.

Appliances Protected from Vehicle Impact
Figure 303.4

Roof Plan View
Figure 306.6
Category IV Condensing Furnace (Direct-Vent Type)

With or Without Cooling Coil

Combustion Air Intake Pipe

Vent Exhaust Pipe

Auxiliary Drain Pan Required (with or without cooling coil)

Figure 307.4

PAN DRAIN PER ITEM #1 OF SECTION 307.2.3 OF THE IMC
-OR-
WATER LEVEL DETECTION DEVICE PER ITEM #3 OF SECTION 307.2.3 OF THE IMC
<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tables 402.4(1) - 402.4(35)</td>
<td>NEW</td>
<td>All gas pipe and tube sizing tables have been replaced with new, recalculated tables most of which include lengths up to 2,000 feet. New pressure and material application tables have been added.</td>
</tr>
<tr>
<td>404.1</td>
<td>404.1</td>
<td>Prohibited locations</td>
</tr>
<tr>
<td>404.5</td>
<td>404.5</td>
<td>Protection against physical damage</td>
</tr>
<tr>
<td>406.1.3</td>
<td>406.1.3</td>
<td>New branches</td>
</tr>
<tr>
<td>406.6 - 406.6.4</td>
<td>Various Leak Check Provisions</td>
<td>The text was revised to distinguish “leak checks” from “leak testing,” thereby avoiding confusion on applicability of the requirements.</td>
</tr>
<tr>
<td>410.3.1</td>
<td>NEW</td>
<td>Vent piping</td>
</tr>
<tr>
<td>411.1</td>
<td>411.1</td>
<td>Connecting appliances</td>
</tr>
<tr>
<td>411.1.1</td>
<td>NEW</td>
<td>Commercial cooking appliances</td>
</tr>
<tr>
<td>411.1.3, 411.1.3.1, 411.1.3.2, 411.1.3.3, 411.1.3.4</td>
<td>NEW</td>
<td>Connector installation</td>
</tr>
<tr>
<td>416</td>
<td>NEW</td>
<td>Overpressure Protection Devices</td>
</tr>
</tbody>
</table>

**Chapter 4: Gas Piping Installations**

![Diagram](image.png)

**CSST Terminated at Appliance Location**

Figure 411.1(1)
CSST Directly Connected to Nonmoveable Appliance
Figure 411.1(2)

Commercial Cooking Appliance Fuel Connectors
(Courtesy of Dormont Manufacturing Company)
Figure 411.1.1(1)
Commercial Cooking Appliance Fuel Connectors
(Courtesy of Dormont Manufacturing Company)
Figure 411.1.1(2)

LENGTH LIMITS

- ONLY ONE CONNECTOR ALLOWED PER APPLIANCE
- CONNECTOR CAPACITY MUST BE ≥ TO INPUT RATING OF APPLIANCE

LENGTH IS MEASURED ALONG CENTERLINE OF CONNECTOR

SHUTOFF VALVE

ONLY ONE CONNECTOR ALLOWED PER APPLIANCE

SEDIMENT TRAP

APPLIANCE

LENGTH LIMITS

- 6 FEET MAXIMUM FOR RANGES
- 6 FEET MAXIMUM FOR DOMESTIC CLOTHES DRYERS
- 3 FEET MAXIMUM FOR ALL OTHER APPLIANCES EXCEPT AS ALLOWED BY SECTIONS 409.5 AND 411.1.3.1. [SEE FIGURE 411.1.3.1(2)]

Appliance Fuel Connector
Figure 411.1.3.1(1)
Chapter 5: Chimney and Vents

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2003</td>
<td>Protection against physical damage</td>
</tr>
<tr>
<td>502.7</td>
<td>NEW</td>
<td>Above-ceiling air-handling spaces</td>
</tr>
<tr>
<td>503.6.4</td>
<td>Vent offsets</td>
<td>Section 503.6.4 was relocated to limit its applicability to vents sized in accordance with Section 503.6.9.1.</td>
</tr>
<tr>
<td>503.7.2</td>
<td>Cold climate</td>
<td>The revised text provides a definition of what was previously referred to as “cold climate.”</td>
</tr>
<tr>
<td>503.10.9</td>
<td>Length of vent connector</td>
<td>The text was revised to clarify that the connector length limits are applicable in all cases except where part of an engineered system.</td>
</tr>
<tr>
<td>504.2.9, 504.3.20</td>
<td>Chimney and vent location</td>
<td>These sections were revised to clarify that the sizing tables in Section 504 are not to be used for chimneys and vents exposed to the outdoors below the roof line. Provisions were added for enclosing Type B vents to prevent them from being exposed to wind and outdoor temperatures.</td>
</tr>
<tr>
<td>504.3.9.1</td>
<td>Tee and wye fittings</td>
<td>A new section requires tees and wyes used in common vent systems to be constructed of the same materials as the common vent. (See Figure 504.3.9.1.)</td>
</tr>
<tr>
<td>505.1.1</td>
<td>Commercial cooking appliances vented by exhaust hoods</td>
<td>A new exception was added to address new technology that will automatically start the hood system whenever cooking occurs, thereby making an interlock unnecessary. Text was added to specifically prohibit bypass piping for solenoid valves used in appliance/hood interlock arrangements. (See Figure 505.1.1.)</td>
</tr>
</tbody>
</table>

Appliance Fuel Connector
Figure 411.1.3.1(2)
Plan View of Stud Wall
Figure 502.7

Vents Through Air Plenums
Figure 503.3.6

(Note that all floor/ceiling assembly penetrations must be protected as required by the IBC.)
In 2003 IFGC, Type B connectors not allowed to pass through ceilings.

In 2006 IFGC, Type B connectors allowed to pass through ceilings.

Type B Vent Connector Penetrations
Figure 503.10.14

Single-Wall Tees and Wyes Prohibited in Type B Common Vent Systems
Figure 504.3.9.1
Example 1

A 40,000 Btu/h input draft hood-equipped water heater is vented by a masonry chimney having one wall exposed to the outdoors (an external chimney has one or more exterior walls). See Figure 504.2.9.

In the 20-foot height, 2-foot lateral row of Table 504.2(3) a connector size of 3 inches shows a capacity of 38,000 Btu/h in the “NAT MAX” column. A 4-inch connector shows a capacity of 74,000 Btu/h. Because the water heater input is 40,000 Btu/h, a 4-inch connector is required and because of Item #1 of Section 504.2.9 and the fact that Table 504.2(3) is for double-wall (Type B) connectors, the 4-inch connector must be of Type B vent.

The connector lateral of 2 feet is less than the maximum of 6 feet based on the limit of 1½ feet for each inch of diameter specified by Item #2 of Section 504.2.9.

The bottom of Table 504.2(3) indicates that the chimney liner must have an internal cross-sectional area within the range of 19 to 88 square inches. The chimney in this example has an internal cross-sectional area of approximately 63 square inches and falls within the range specified by the table for 4-inch connectors. The winter design temperature for the location (Newark, NJ) in this example is above 5°F.

The installation in Figure 504.2.9 complies with Items #1 through #5 of Section 504.2.9, therefore, it appears to be code compliant; however, Sections 504.2.8 and 503.5.5 limit the chimney flue liner area to seven times the area of the draft hood outlet. If the draft hood on the water heater in this example has a 3 inch outlet, the chimney would be too large since seven times the area of a 3 inch draft hood outlet is 49 square inches. If the draft hood has a 4 inch outlet, the installation is code compliant.
Exterior Chimney Sizing — Example 1
Figure 504.2.9
Example 2

A 40,000 Btu/h input draft hood-equipped water heater and a 100,000 Btu/h input Category I boiler are common vented by a masonry chimney having one wall exposed to the outdoors. See Figure 504.3.20.

Table 504.3(7a) indicates that the maximum combined appliance input rating for 20-foot tall, 63-square inch internal area, exterior masonry chimney is 668,000 Btu/h. The appliances in this example have a combined input of 140,000 Btu/h, which is less than the maximum.

Table 504.3(7b) indicates that a 20-foot tall chimney with a 63 square inch liner in a location with a 5 to 16°F winter design temperature needs a minimum space-heating appliance input of 408,000 Btu/h. In this example, the space-heating appliance input is far less than the minimum required, therefore, the installation does not comply with code and an alternative venting system must be used, such as relining the chimney. (Note that the appliance manufacturer might prohibit the use of an exterior chimney to vent their appliance.)
### Chapter 6: Specific Appliances

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>621.7.1</td>
<td>NEW</td>
<td>Ventless firebox enclosure</td>
</tr>
</tbody>
</table>

### Chapter 7: Gaseous Hydrogen Systems

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>704.1.2.3.2</td>
<td>NEW</td>
<td>Interior piping</td>
</tr>
</tbody>
</table>

---

**Test your knowledge**

3. Which of the following would trigger guard rail requirements if located within 10 feet of a roof edge 15 feet above grade?
   a. Roof-top HVAC unit
   b. Roof hatch opening
   c. Roof-top gas-fired make-up air unit
   d. All of the above.

4. Which of the following would not require an auxiliary drain pan for any installation?
   a. Category I furnace without cooling coil
   b. Category IV furnace without cooling coil
   c. Horizontal category I furnace with cooling coil
   d. Up flow Category I furnace with cooling coil
5. The vent piping connected to a line gas pressure regulator without an integral pressure relief mechanism is defined as:
   a. relief vent piping.
   b. manifold vent piping.
   c. breather vent piping.
   d. equalizer piping.

6. CSST is allowed to directly connect to which of the following appliances?
   a. Furnace
   b. Domestic clothes dryer
   c. Domestic range
   d. Commercial deep fryer

7. Commercial cooking appliances that are moved for cleaning purposes must be connected to the piping system with an appliance connector complying with what standard?
   a. Z21.24
   b. Z21.75
   c. ANSI LC-1
   d. Z21.69
Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would include:
   - The requirement for guards on roofs now applies to roof hatch openings as well as roof top appliances.
   - Text was revised to distinguish “leak checks” from “leak testing.” (see Sections 406.6-406.6.4)
   - A new exception was added to address new technology that will automatically start the hood system whenever cooking occurs, thereby making an interlock unnecessary. (see Section 505.1.1)
   - Combustion air ducts must be equivalent to galvanized steel ducts in strength and rigidity.

2. Answers will vary. For example, an acceptable answer would be:
   - Requiring combustion air ducts to have strength and rigidity equivalent to galvanized steel effectively eliminates the use of flexible ducts for combustion air applications.

3. d. (Section 306.6)

4. a. (Section 307.4)

5. c. (Section 410.3.1)

6. a. (Section 411.1)

7. d. (Section 411.1.1)
International Property Maintenance Code

The 2006 *International Property Maintenance Code*® (IPMC®) continues to emphasize protection to health, safety and welfare while providing code requirements that are enforceable in the diverse types of building environments that exist nationally. Providing a safe means of egress, preventing hazardous structural conditions and reducing health hazards by providing a clean, sanitary environment are the key components of the code. The code furthers the goal of consistent code enforcement through its use of reference codes, particularly the 2006 *International Fire Code*® (IFC®).

**Scope**

The IPMC applies to all existing structures, including both residential and nonresidential property. The code addresses the following:

- The administration, enforcement and penalties associated with the code.
- The determination and assignment of responsibility for code compliance among the owner, operator and occupant of a property.
- The minimum property maintenance conditions for existing structures and premises in regard to structural safety, sanitation, health and comfort.
- Regulating the use of existing dwellings through the establishment of occupancy limitations.
- Maintenance of means of egress and fire safety with appropriate reference to the IFC.

**Content**

- Administration (Chapter 1)
- General Requirements (Chapter 3)
- Light, Ventilation and Occupancy Limitations (Chapter 4)
- Mechanical and Electrical Requirements (Chapter 6)
Chapter 1: Administration

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2003</td>
<td>Deleted specific requirements for coordination of inspections.</td>
</tr>
<tr>
<td>N/A</td>
<td>104.8 Coordination of inspections</td>
<td>Added the term “civil infraction” to the first sentence allowing a local municipality to find an individual guilty of a civil infraction or a misdemeanor when the individual fails to comply with a notice of violation.</td>
</tr>
<tr>
<td>106.3</td>
<td>106.3 Prosecution of violation</td>
<td></td>
</tr>
</tbody>
</table>

Test your knowledge

1. A resident who had received a notice of violation from his local code enforcement office failed to abate the violations that were cited, which resulted in a civil infraction. Is there a difference between a civil infraction and a misdemeanor? (Section 106.3)

Chapter 3: General Regulations

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>303.2</td>
<td>303.2 Enclosures</td>
<td>Revised the self-closing requirements to be applicable only to screen doors used for insect control.</td>
</tr>
<tr>
<td>304.14</td>
<td>304.14 Insect screens</td>
<td>Revised to clarify the intent that deadbolts are to be easily openable from the side from which egress is to be made without the need for a key, special knowledge or effort.</td>
</tr>
<tr>
<td>304.18.1</td>
<td>304.18.1 Doors</td>
<td></td>
</tr>
</tbody>
</table>

Test your knowledge

2. Homeowners purchased a new hot tub and had it installed in their back yard. The yard is not enclosed. The children next door like to play on top of the hard insulated cover but have not been able to remove the cover. Is this a violation of 2006 IPMC? (Section 303.2)

3. The rear service entrance of a restaurant has a screen door without a self-closing device. The screen door is used regularly during the summer months to help cool off the hot kitchen. Is a self-closing device required? (Section 304.14)

4. The tenant in an apartment building complained she could not get her front door to lock with the key provided. To save time, the landlord installed an inexpensive sliding bolt on the inside of the front door. Does this repair meet the requirements for building security? (Section 304.18.1)
Chapter 4: Light, Ventilation and Occupancy Limitations

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>403.3</td>
<td>403.3</td>
<td>Cooking facilities</td>
<td>Revised to allow cooking devices, such as coffee pots and microwave ovens, to be used in rooming or dormitory units.</td>
<td></td>
</tr>
<tr>
<td>404.4</td>
<td>404.4</td>
<td>Bedroom and living room requirements</td>
<td>Revised the specific requirements for living room and bedroom sizes to be based on minimum square footage rather than square footage and number of occupants.</td>
<td></td>
</tr>
<tr>
<td>404.5</td>
<td>404.5</td>
<td>Overcrowding</td>
<td>Revised to convey that an overcrowding violation is established when the code official believes an excessive number of occupants are the cause for conditions endangering the health, safety and welfare of the occupants and that by reducing the number of occupants, the condition will cease to exist.</td>
<td></td>
</tr>
</tbody>
</table>

Test your knowledge

5. A student living in a college dormitory brought home a small two burner electric stove he purchased at a yard sale for only five dollars. The appliance gets hot enough to cook with, but does not have an open flame. Would this be considered an approved appliance without approval from the local code official? (Section 403.3)

6. Based on the revision to Section 404.4 which eliminated a minimum square footage for each person sleeping in a bedroom and the revision to Section 404.5 which no longer makes it a violation to have more people in a unit than stipulated by the table, read the following scenario and determine if a violation exists.

Eight people (four adults and four children) occupy a two bedroom apartment with a 125 square foot living room and two 10’ by 7’ bedrooms. The unit is clean and sanitary and in good condition. There is one queen size bed in each bedroom. Is this a violation of Section 404.4 or 404.5?

7. The code official enters a one bedroom apartment unit and finds two families living there. One family is occupying the bedroom and the other family is occupying the living room area. The tenant explains that her brother lost his job so he and his wife had to move in with her. There is so much furniture in the living room that she cannot open the front door completely for the inspector. The head board bookcase on her brother’s bed is blocking the window in the living room. Is this an overcrowding violation? (Sections 404.4 and 404.5)

---

Chapter 6: Mechanical and Electrical Requirements

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
</table>
Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would include:

   A civil infraction may or may not require a court appearance depending on what the local law requires. Sometimes if it’s like a parking ticket, it could be paid at the city. Other times, the offender may have to appear in court and pay the fine. Normally, these are considered fine only offenses as jail time is not a part of the ordinance.

   A misdemeanor requires an appearance in court. It is a criminal offense which carries the possibility of a jail term, normally no longer than one year. A person can be placed on probation, conditional discharge and ordered to pay a fine.

2. Only if the hot tub has a water depth of more than 24” and the cover is not an approved safety cover which complies with ASTM F 1346.

3. Yes. A screen door on a restaurant kitchen would be necessary for insect control and therefore would be required to be self-closing so as not to be left standing open when someone forgot to close it.

4. No. A sliding bolt is not considered an acceptable solution per the code. One reason is a slide bolt can only be locked from the inside which protects the occupant from intrusion when at home, but leaves the unit unsecured when not at home.

5. No. Coffee pots and microwave ovens are the only two appliances that are not considered prohibited cooking appliances under Section 403.3.

6. No. Section 404.4.1 requires every living room to be at least 120 square feet and every bedroom to be a minimum of 70 square feet. The code puts no restrictions on the number of persons who can occupy any space in a dwelling unit. Furthermore, overcrowding cannot be established unless conditions are found which endanger the occupants and are clearly caused by an excessive number of occupants.

7. Yes. The new occupants have created an unsafe condition by blocking egress from the unit with their furniture. If they intend to keep all their furniture, the unit would continue to be overcrowded. If the new tenants want to stay, they would have to eliminate the unsafe conditions caused by their occupancy.
International Energy Conservation Code

While the 2006 edition of the International Energy Conservation Code® (IECC®) continues to emphasize both prescriptive and performance-related provisions, it has been substantially revised and reformatted compared to the 2003 edition. It remains founded on broad-based principles that make energy possible without unnecessarily increasing construction codes or giving preferential treatment to particular types or classes of materials, products, or methods of construction. This 2006 edition is fully compatible with all the International Codes® (I-Codes®) published by the International Code Council (ICC).

Upon review of the IECC, you will find the chapters on Administration and Enforcement, Definitions, Climate Zones, and Residential Energy Efficiency have been deleted or revised in their entirety. This reorganization and consolidation will lead to improvements in the usability, adaptability and enforcement of the IECC.

Scope

The code applies to both residential and commercial buildings. In the code, the United States is divided into eight climate zones which are used in determining applicable requirements for residential and commercial energy efficiency. Criteria to determine the applicable climate zones for international locations are also included.

Insulation, window and skylight requirements for the thermal envelope for both residential and commercial buildings are based on the climate zones. Performance criteria for compliance with residential energy efficiency requirements using simulated energy analysis is also addressed.
### Chapter 1: Administration and Enforcement (Revised in its entirety)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 101</td>
<td>101 Scope and General Requirements</td>
<td>Revised title.</td>
</tr>
<tr>
<td>2006 101.2</td>
<td>101.2 Scope</td>
<td>Revised to state that this code applies to residential and commercial buildings. Residential buildings include one- and two-family dwellings and townhouses. Also, exemption for separated and unconditioned buildings is moved under compliance – low energy buildings.</td>
</tr>
<tr>
<td>2006 101.4</td>
<td>101.2.2 Applicability</td>
<td>Revised and restated requirements for the existing buildings (specifically), and renovations thereto.</td>
</tr>
<tr>
<td>2006 101.4.3</td>
<td>101.2.2.2 Additions, alterations, renovations or repairs</td>
<td>Revised to include four reasonable building envelope alterations considered exempt from compliance with the IECC.</td>
</tr>
<tr>
<td>2006 101.5.1</td>
<td>103.1 Compliance materials</td>
<td>Revised to permit the code official to approve specific computer software, worksheets, compliance manuals and other similar materials that meet the intent of the code.</td>
</tr>
<tr>
<td>Tables 102.1.3(1)-(3)</td>
<td>Tables 102.5.2(1)-(3) Default Fenestration</td>
<td>Solar heat gain and U-factor properties of glazed windows, doors and skylights and glass block were revised and condensed in format.</td>
</tr>
<tr>
<td>2006 103.1.1</td>
<td>NEU Above code programs</td>
<td>The authority having jurisdiction on a case-by-case basis may deem a building compliant with the IECC provisions approved in writing by where an independent commissioning professional or certified agency accepts or approves the installation in accordance with an approved above code program.</td>
</tr>
</tbody>
</table>

### Chapter 2: Definitions (Revised in its entirety)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 202</td>
<td>202 General Definitions</td>
<td>Includes new definitions for the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Above-grade wall, curtain wall, economizer - water, energy recovery ventilation system, R-value (thermal resistance), sleeping unit, solar heat gain coefficient (SHGC), storefront, U-factor (thermal transmittance) and vapor retarder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Includes revised definitions for the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Building thermal envelope, conditioned space, commercial building economizer - air, exterior wall, residential building, roof assembly, skylight and ventilation.</td>
</tr>
</tbody>
</table>
Chapter 3: Climate Zones (Revised in its entirety)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Climate Zones</td>
<td>The former 19 climate zones have been consolidated to eight. A moisture regime has been added which overlays the zones into subcategories identified as either moist, dry or marine (see Figure 301.1).</td>
</tr>
<tr>
<td>301.2</td>
<td>NEW Warm humid counties</td>
<td>Includes a list of warm humid counties.</td>
</tr>
<tr>
<td>301.3</td>
<td>NEW International climate zones</td>
<td>Includes definitions and climate criteria to determine the applicable climate zones for international locations [see Tables 301.3(1) and 301.3(2)].</td>
</tr>
<tr>
<td>301.3.1</td>
<td>NEW Warm humid criteria</td>
<td>Includes conditions that define &quot;warm humid&quot; locations.</td>
</tr>
<tr>
<td>302.1</td>
<td>NEW Interior design conditions</td>
<td>States that interior design temperatures used for heating and cooling load calculations must be a maximum of 72°F for heating and a minimum of 75°F for cooling.</td>
</tr>
</tbody>
</table>

Test Your Knowledge


Test Your Knowledge

3. What is the absolute minimum wet-bulb temperature required for a location to be classified as a “warm humid” climate where this minimum wet-bulb temperature is attained for at least 3,000 hours during the warmest consecutive six months of the year?
TABLE 301.3(1)

INTERNATIONAL CLIMATE ZONE DEFINITIONS

MAJOR CLIMATE TYPE DEFINITIONS

Marine (C) Definition - Locations meeting all four criteria:
1. Mean temperature of coldest month between -3 °C (27 °F) and 18 °C (65 °F)
2. Warmest month mean < 22 °C (72 °F)
3. At least four months with mean temperatures over 10 °C (50 °F)
4. Dry season in summer. The month with the heaviest precipitation in the cold season has at least three times as much precipitation as the month with the least precipitation in the rest of the year. The code season is October through March in the Northern Hemisphere and April through September in the Southern Hemisphere.

Dry (B) Definition - Locations meeting the following criteria: Not Marine and
\[ P_n < 0.44 \times (7F - 19.5) \quad \text{[} P_n < 2.0 \times (TC + 7) \text{] in SI units} \]
where:
\[ P_n = \text{Annual precipitation in inches (cm)} \]
\[ T = \text{Annual mean temperature in °F (°C)} \]

Moist (A) Definition - Locations that are not Marine and not Dry.

For SI: °C = [(°F) - 32]/1.8; 1 inch = 2.54 cm.

TABLE 301.3(2)

INTERNATIONAL CLIMATE ZONE DEFINITIONS

<table>
<thead>
<tr>
<th>ZONE NUMBER</th>
<th>THERMAL CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IP Units</td>
</tr>
<tr>
<td>1</td>
<td>9000 &lt; CDD50°F</td>
</tr>
<tr>
<td>2</td>
<td>6300 &lt; CDD50°F ≤ 9000</td>
</tr>
<tr>
<td>3A and 3B</td>
<td>4500 &lt; CDD50°F ≤ 6300 AND HDD65°F ≤ 5400</td>
</tr>
<tr>
<td>4A and 4B</td>
<td>CDD50°F ≤ 4500 AND HDD65°F ≤ 5400</td>
</tr>
<tr>
<td>3C</td>
<td>HDD65°F ≤ 3600</td>
</tr>
<tr>
<td>4C</td>
<td>3600 &lt; HDD65°F ≤ 5400</td>
</tr>
<tr>
<td>5</td>
<td>5400 &lt; HDD65°F ≤ 7200</td>
</tr>
<tr>
<td>6</td>
<td>7200 &lt; HDD65°F ≤ 9000</td>
</tr>
<tr>
<td>7</td>
<td>9000 &lt; HDD65°F ≤ 12600</td>
</tr>
<tr>
<td>8</td>
<td>12600 &lt; HDD65°F</td>
</tr>
</tbody>
</table>

For SI: °C = [(°F) - 32]/1.8.

Chapter 4: Residential Energy Efficiency (Revised in its entirety)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>401.2</td>
<td>NEW Compliance</td>
<td>Clearly states provisions of the code that are mandatory, Sections 401, 402.4, 402.5, and 403, and either the prescriptive requirements of Sections 402.1 through 402.3 or the performance requirements of Section 404.</td>
</tr>
<tr>
<td>401.3</td>
<td>NEW Certificate</td>
<td>Requires a permanent certificate to be posted on or in the electrical distribution panel. The certificate is to clearly depict information for energy code compliance assessment by the field inspector.</td>
</tr>
</tbody>
</table>
Chapter 4: Residential Energy Efficiency (Revised in its entirety)

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>402</td>
<td>502.2 Building thermal envelope</td>
</tr>
<tr>
<td></td>
<td>Revised and reformatted prescriptive requirements for insulation and fenestration, including mandatory requirements for air leakage and moisture control.</td>
</tr>
<tr>
<td>Table 402.1.1</td>
<td>Table 502.2 Insulation and Fenestration Requirements</td>
</tr>
<tr>
<td>403.2.1</td>
<td>Table 503.3.3.3 (Duct) insulation</td>
</tr>
<tr>
<td></td>
<td>Supply and return ducts must now be insulated to R-8. Ducts in floor trusses must be insulated to R-6.</td>
</tr>
<tr>
<td>403.3</td>
<td>Table 503.3.3.1 Mechanical system piping insulation</td>
</tr>
<tr>
<td></td>
<td>Requires all mechanical system piping carrying fluids above 105°F or below 55°F to be insulated to R-2.</td>
</tr>
<tr>
<td>403.6</td>
<td>NEW Equipment sizing</td>
</tr>
<tr>
<td></td>
<td>Heating and cooling equipment must be sized in accordance with Section M1401.3 of the International Residential Code® (IRC®).</td>
</tr>
<tr>
<td>404</td>
<td>Chapter 4 Simulated Performance Alternatives</td>
</tr>
<tr>
<td></td>
<td>Revised and reformatted criteria for compliance using simulated energy performance analysis, including the cost of heating, cooling and service water heating energy.</td>
</tr>
</tbody>
</table>

### Table 402.1.1

**INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT**

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>FENESTRATION $U$-FACTOR</th>
<th>SKYLIGHT $U$-FACTOR</th>
<th>GLAZED FENESTRATION SHGC</th>
<th>CEILING $R$-VALUE</th>
<th>WOOD FRAME WALL $R$-VALUE</th>
<th>MASS WALL $R$-VALUE</th>
<th>FLOOR $R$-VALUE</th>
<th>BASEMENT WALL $R$-VALUE</th>
<th>SLAB $R$-VALUE &amp; DEPTH</th>
<th>CRAWL SPACE WALL $R$-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.20</td>
<td>0.75</td>
<td>0.40</td>
<td>30</td>
<td>13</td>
<td>3</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0.75</td>
<td>0.75</td>
<td>0.40</td>
<td>30</td>
<td>13</td>
<td>4</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0.65</td>
<td>0.65</td>
<td>0.40</td>
<td>30</td>
<td>13</td>
<td>5</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>5/13</td>
</tr>
<tr>
<td>4 except Marine</td>
<td>0.40</td>
<td>0.60</td>
<td>NR</td>
<td>38</td>
<td>13</td>
<td>5</td>
<td>19</td>
<td>10/13</td>
<td>10, 2 ft</td>
<td>10/13</td>
</tr>
<tr>
<td>5 and Marine 4</td>
<td>0.35</td>
<td>0.60</td>
<td>NR</td>
<td>38</td>
<td>19 or 13+5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>13</td>
<td>30&lt;sup&gt;f&lt;/sup&gt;</td>
<td>10/13</td>
<td>10, 4 ft</td>
<td>10/13</td>
</tr>
<tr>
<td>6</td>
<td>0.35</td>
<td>0.60</td>
<td>NR</td>
<td>49</td>
<td>19 or 13+5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>15</td>
<td>30&lt;sup&gt;f&lt;/sup&gt;</td>
<td>10/13</td>
<td>10, 4 ft</td>
<td>10/13</td>
</tr>
<tr>
<td>7 and 8</td>
<td>0.35</td>
<td>0.60</td>
<td>NR</td>
<td>49</td>
<td>21</td>
<td>19</td>
<td>30&lt;sup&gt;f&lt;/sup&gt;</td>
<td>10/13</td>
<td>10, 4 ft</td>
<td>10/13</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm

- **a.** $R$-values are minimums. $U$-factors and SHGC are maximums. R-19 shall be permitted to be compressed into a 2 x 6 cavity.
- **b.** The fenestration $U$-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- **c.** The first $R$-value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.
- **d.** R-5 shall be added to the required slab edge $R$-values for heated slabs.
- **e.** There are no SHGC requirements in the Marine zone.
- **f.** Or insulation sufficient to fill the framing cavity, R-19 minimum.
- **g.** “13+5” means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
Chapter 5: Commercial Energy Efficiency

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>501.1 801.1</td>
<td>Scope</td>
<td>Revised to state that commercial buildings must meet either the requirements of ASHRAE Standard 90.1-2004 or the requirements in this chapter.</td>
</tr>
<tr>
<td>502.1.1, 502.3 802.2</td>
<td>Insulation and fenestration criteria</td>
<td>Revised and reformatted insulation and fenestration requirements to suit eight climate zones overlayed by three moisture regimes. Buildings with vertical fenestration area exceeding 40% or skylight area exceeding 3% must comply with the total building performance provisions of Section 506 or ASHRAE 90.1-2004.</td>
</tr>
<tr>
<td>502.2.3 802.2.1</td>
<td>Above-grade walls</td>
<td>&quot;Mass wall&quot; construction now includes walls weighing at least 25 pounds per square foot of wall surface area if the material weight is not more than 120 pounds per cubic foot.</td>
</tr>
<tr>
<td>502.2.5 802.2.6</td>
<td>Floors over outdoor air or unconditioned space</td>
<td>Revised to include floor weight requirements for &quot;Mass floors&quot;.</td>
</tr>
<tr>
<td>502.2.7 NEW</td>
<td>Opaque doors</td>
<td>Opaque door performance requirements are now included in Table 502.2(1).</td>
</tr>
<tr>
<td>503.2.2 803.2.1.1</td>
<td>Equipment and system sizing</td>
<td>Added exceptions addressing PTAC and PTHP equipment.</td>
</tr>
<tr>
<td>503.2.4.4 803.3.3.4</td>
<td>Shutoff damper controls</td>
<td>Includes new exceptions stating where gravity dampers are permitted.</td>
</tr>
<tr>
<td>503.2.6 NEW</td>
<td>Energy recovery ventilation systems</td>
<td>States the conditions under which an energy recovery ventilation system is required, and recovery efficiency when required.</td>
</tr>
<tr>
<td>503.3.1 803.2.6, 803.3.5</td>
<td>Economizers</td>
<td>Reduced economizer threshold for zones 2B, 3B, 3C, 4B, 4C, 5B, 5C, and 6B from 65,000 Btu/h to 54,000 Btu/h. Equipment efficiency exception retained but reformatted.</td>
</tr>
<tr>
<td>503.3.2 803.2.4</td>
<td>Hydronic system controls</td>
<td>Reduced aggregate system threshold for controls from 600,000 Btu/h to 300,000 Btu/h.</td>
</tr>
</tbody>
</table>

Test Your Knowledge

4. What is:
   (a) the minimum ceiling R-value for a residential building in Jackson County, Mississippi?

   (b) the maximum U-factor for glazed windows and doors for a residential building in Clinton County, Illinois?
Chapter 5: Commercial Energy Efficiency

<table>
<thead>
<tr>
<th>Code Section</th>
<th>2006</th>
<th>2003</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.4.2</td>
<td>803.3.3.6</td>
<td>Variable air volume (VAV) fan control</td>
<td>Reduced VAV fan motor horsepower threshold for variable speed drive control from 25 hp to 10 hp. A static pressure reset requirement is added for systems with direct digital control of individual zone boxes reporting to a central control panel.</td>
<td></td>
</tr>
<tr>
<td>504.7</td>
<td>NEW</td>
<td>Pools</td>
<td>Pool heaters, time switches, and pool covers must be equipped with energy conserving measures as specified in this new section.</td>
<td></td>
</tr>
<tr>
<td>505.2.2.2</td>
<td>805.2.2.2</td>
<td>Automatic lighting shutoff</td>
<td>Revised to include automatic control functionality occupant sensors that turn lighting off within 30 minutes of an occupant leaving a space, or a signal from another control or alarm system indicating the area is unoccupied. New exceptions identify spaces where automatic lighting shutoff sweeps are not required.</td>
<td></td>
</tr>
<tr>
<td>505.2.4</td>
<td>805.2.3</td>
<td>Exterior lighting controls</td>
<td>Revised to state that automatic controls must be provided which are capable of turning off exterior lighting when there is sufficient daylight or lighting is not required during night-time. Use of an astronomical time switch to control dusk-to-dawn lighting is added. An exception is also included.</td>
<td></td>
</tr>
<tr>
<td>505.5.2</td>
<td>805.5.2</td>
<td>Interior lighting power</td>
<td>Deleted the tenant area or portion of building method (space-by-space) in its entirety.</td>
<td></td>
</tr>
<tr>
<td>505.6.1</td>
<td>NEW</td>
<td>Exterior building grounds lighting</td>
<td>Exterior lighting ≥ 100 watts shall have a minimum efficacy of 60 lumens/watt or be controlled by a motion sensor.</td>
<td></td>
</tr>
<tr>
<td>505.6.2</td>
<td>NEW</td>
<td>Exterior building lighting power</td>
<td>New Table 505.6.2 lists exterior lighting power densities for various applications. A total exterior lighting power allowance for all exterior building applications is now required and shall not be exceeded. Exceptions are provided.</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 502.2(1)
BUILDING ENVELOPE REQUIREMENTS — OPAQUE ASSEMBLIES

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4 except Marine</th>
<th>5 and Marine 4</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roofs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal buildings (with R-5 thermal blocks)³</td>
<td>R-19 + R-10</td>
<td>R-19</td>
<td>R-19</td>
<td>R-19</td>
<td>R-19 + R-10</td>
<td>R-19 + R-10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attic and other</td>
<td>R-30</td>
<td>R-30</td>
<td>R-30</td>
<td>R-30</td>
<td>R-30</td>
<td>R-30</td>
<td>R-38</td>
<td>R-38</td>
</tr>
<tr>
<td><strong>Walls, Above Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>NR</td>
<td>NR</td>
<td>R-5.7 cl¹</td>
<td>R-5.7 cl⁴</td>
<td>R-7.6 cl</td>
<td>R-9.5 cl</td>
<td>R-11.4 cl</td>
<td>R-13.3 cl</td>
</tr>
<tr>
<td>Metal framed</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13 + R-3.8 cl</td>
<td>R-13 + R-3.8 cl</td>
<td>R-13 + R-7.5 cl</td>
<td>R-13 + R-7.5 cl</td>
</tr>
<tr>
<td>Wood framed and other</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13</td>
<td>R-13 + R-7.5 cl</td>
<td>R-13 + R-7.5 cl</td>
</tr>
<tr>
<td><strong>Walls, Below Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below grade wall⁵</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>R-7.5 cl</td>
<td>R-7.5 cl</td>
</tr>
<tr>
<td><strong>Floors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>NR</td>
<td>R-5 cl</td>
<td>R-5 cl</td>
<td>R-10 cl</td>
<td>R-10 cl</td>
<td>R-10 cl</td>
<td>R-15 cl</td>
<td>R-15 cl</td>
</tr>
<tr>
<td>Joist/Framing</td>
<td>NR</td>
<td>R-19</td>
<td>R-19</td>
<td>R-19</td>
<td>R-19</td>
<td>R-30</td>
<td>R-30</td>
<td>R-30</td>
</tr>
</tbody>
</table>

- continued on next page -
### TABLE 502.2(1)
**BUILDING ENVELOPE REQUIREMENTS — OPAQUE ASSEMBLIES**

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4 except Marine</th>
<th>5 and Marine 4</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slab-on-Grade Floors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unheated slabs</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>R-10 for 24 in. below</td>
</tr>
<tr>
<td>Heated slabs</td>
<td>R-7.5 for 12 in. below</td>
<td>R-7.5 for 12 in. below</td>
<td>R-7.5 for 12 in. below</td>
<td>R-7.5 for 12 in. below</td>
<td>R-7.5 for 12 in. below</td>
<td>R-10 for 36 in. below</td>
<td>R-10 for 36 in. below</td>
<td>R-10 for 48 in. below</td>
</tr>
<tr>
<td>Opaque Doors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swinging</td>
<td>U - 0.70</td>
<td>U - 0.70</td>
<td>U - 0.70</td>
<td>U - 0.70</td>
<td>U - 0.70</td>
<td>U - 0.70</td>
<td>U - 0.70</td>
<td>U - 0.50</td>
</tr>
<tr>
<td>Roll-up or sliding</td>
<td>U - 1.45</td>
<td>U - 1.45</td>
<td>U - 1.45</td>
<td>U - 1.45</td>
<td>U - 1.45</td>
<td>U - 0.50</td>
<td>U - 0.50</td>
<td>U - 0.50</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm
- Continuous Insulation
- NR = No Requirement
- a. Thermal blocks are a minimum R-5 of rigid insulation, which extends 1-inch beyond the width of the purlin on each side, perpendicular to the purlin.
- b. Assembly descriptions can be found in Table 502.2(2).
- c. R-5.7 ci maybe substituted with concrete block walls complying with ASTM C 90, ungrouted or partially grouted at 32 in. or less on center vertically and 48 in. or less on center horizontally, with ungrouted cores filled with material having a maximum thermal conductivity of 0.44 Btu-in./h·f·°F.
- d. When heated slabs are placed below grade, below grade walls must meet the exterior insulation requirements for perimeter insulation according to the heated slab-on-grade construction.
- e. Insulation is not required for mass walls in Climate Zone 3A located below the “Warm-Humid” line, and in Zone 3B.

### TABLE 502.3
**BUILDING ENVELOPE REQUIREMENTS: FENESTRATION**

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4 except Marine</th>
<th>5 and Marine 4</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical Fenestration (40% maximum of above-grade wall)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-Factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Framing materials other than metal with or without metal reinforcement or cladding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-Factor</td>
<td>1.20</td>
<td>0.75</td>
<td>0.65</td>
<td>0.40</td>
<td>0.35</td>
<td>0.35</td>
<td>0.35</td>
<td>0.35</td>
</tr>
<tr>
<td>Metal framing with or without thermal break</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curtain Wall/Storefront</td>
<td>1.20</td>
<td>0.70</td>
<td>0.60</td>
<td>0.50</td>
<td>0.45</td>
<td>0.45</td>
<td>0.45</td>
<td>0.45</td>
</tr>
<tr>
<td>Entrance Door U-Factor</td>
<td>1.20</td>
<td>1.10</td>
<td>0.90</td>
<td>0.85</td>
<td>0.80</td>
<td>0.80</td>
<td>0.80</td>
<td>0.80</td>
</tr>
<tr>
<td>All Other U-Factor*</td>
<td>1.20</td>
<td>0.75</td>
<td>0.65</td>
<td>0.55</td>
<td>0.55</td>
<td>0.55</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>SHGC - All Frame Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHGC: PF ≤ 0.25</td>
<td>0.25</td>
<td>0.25</td>
<td>0.25</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>SHGC: 0.25 ≤ PF &lt; 0.5</td>
<td>0.33</td>
<td>0.33</td>
<td>0.33</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>SHGC: PF ≥ 0.5</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>Skylights (3% maximum)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-Factor</td>
<td>1.60</td>
<td>1.05</td>
<td>0.90</td>
<td>0.60</td>
<td>0.60</td>
<td>0.60</td>
<td>0.60</td>
<td>0.60</td>
</tr>
<tr>
<td>SHGC</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>Plastic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-Factor</td>
<td>1.90</td>
<td>1.90</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
<td>0.90</td>
<td>0.90</td>
<td>0.60</td>
</tr>
<tr>
<td>SHGC</td>
<td>0.35</td>
<td>0.35</td>
<td>0.35</td>
<td>0.62</td>
<td>0.62</td>
<td>0.62</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

NR = No Requirement.
PF = Projection factor (See Section 502.3.2).
| a. All others includes operable windows, fixed windows and non-entrance doors. | | | | | | | | |
### TABLE 503.3.1(1)
#### ECONOMIZER REQUIREMENTS

<table>
<thead>
<tr>
<th>CLIMATE ZONES</th>
<th>ECONOMIZER REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A, 1B, 2A, 3A, 4A, 7, 8</td>
<td>No requirement</td>
</tr>
<tr>
<td>2B, 3B, 3C, 4B, 4C, 5B, 5C, 6B</td>
<td>Economizers on all cooling systems (\geq 54,000 \text{ Btu/h})</td>
</tr>
<tr>
<td>5A, 6A</td>
<td>Economizers on all cooling systems (\geq 135,000 \text{ Btu/h})</td>
</tr>
</tbody>
</table>

For SI: 1 British thermal unit per hour = 0.293 W.

### TABLE 503.3.1(2)
#### EQUIPMENT EFFICIENCY PERFORMANCE EXCEPTION FOR ECONOMIZERS

<table>
<thead>
<tr>
<th>CLIMATE ZONES</th>
<th>COOLING EQUIPMENT PERFORMANCE IMPROVEMENT (EER OR IPLV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B</td>
<td>10% Efficiency Improvement</td>
</tr>
<tr>
<td>3B</td>
<td>15% Efficiency Improvement</td>
</tr>
<tr>
<td>4B</td>
<td>20% Efficiency Improvement</td>
</tr>
</tbody>
</table>

### TABLE 505.6.2
#### LIGHTING POWER DENSITIES FOR BUILDING EXTERIORS

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>LIGHTING POWER DENSITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>** Tradable Surfaces** (Lighting Power Densities for uncovered parking areas, building grounds, building entrances and exits, canopies and overhangs, and outdoor sales areas may be traded.)</td>
<td></td>
</tr>
<tr>
<td>Uncovered Parking Areas</td>
<td></td>
</tr>
<tr>
<td>Parking Lots and drives</td>
<td>0.15 W/ft²</td>
</tr>
<tr>
<td>Building Grounds</td>
<td></td>
</tr>
<tr>
<td>Walkways less than 10 feet wide</td>
<td>1.0 watts/linear foot</td>
</tr>
<tr>
<td>Walkways 10 feet wide or greater, plaza areas and special feature areas</td>
<td>0.2 W/ft²</td>
</tr>
<tr>
<td>Stairways</td>
<td>1.0 W/ft²</td>
</tr>
<tr>
<td>Building Entrances and Exits</td>
<td></td>
</tr>
<tr>
<td>Main entries</td>
<td>30 watts/linear foot of door width</td>
</tr>
<tr>
<td>Other doors</td>
<td>20 watts/linear foot of door width</td>
</tr>
<tr>
<td>Canopies and Overhangs</td>
<td></td>
</tr>
<tr>
<td>Canopies (free standing &amp; attached and overhangs)</td>
<td>1.25 W/ft²</td>
</tr>
<tr>
<td>Outdoor Sales</td>
<td></td>
</tr>
<tr>
<td>Open areas (including vehicle sales lots)</td>
<td>0.5 W/ft²</td>
</tr>
<tr>
<td>Street frontage for vehicle sales lots in addition to &quot;open area&quot; allowance</td>
<td>20 watts/linear foot</td>
</tr>
<tr>
<td>** Nontradable Surfaces** (Lighting Power Density calculations for the following applications can be used only for the specific application and cannot be traded between surfaces or with other exterior lighting. The following allowances are in addition to any allowance otherwise permitted in the Tradable Surface section of this table.)</td>
<td></td>
</tr>
<tr>
<td>Building facades</td>
<td>0.2 W/ft² for each illuminated wall or surface or 5.0 Watts/linear foot for each illuminated wall or surface length</td>
</tr>
<tr>
<td>Automated teller machines and night depositories</td>
<td>270 watts per location plus 90 watts per additional ATM per location</td>
</tr>
<tr>
<td>Entrances and gatehouse inspection stations at guarded facilities</td>
<td>1.25 W/ft² of uncovered area (covered areas are included in the Canopies and Overhangs section of Tradable Surfaces)</td>
</tr>
<tr>
<td>Loading areas for law enforcement, fire, ambulance and other emergency service vehicles</td>
<td>0.5 W/ft² of uncovered areas (covered areas are included in the Canopies and Overhangs section of Tradable Surfaces)</td>
</tr>
<tr>
<td>Drive-up windows at fast food restaurants</td>
<td>400 watts per drive-through</td>
</tr>
<tr>
<td>Parking near 24-hour rental entrances</td>
<td>800 watts per main entry</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm, 1 watt per square foot = W/0.0929 m².
5. What is the minimum insulation for supply and return air ducts and plenums when located in unconditioned space?

6. What is the maximum interior lighting power density for a hospital?

7. For commercial buildings, the prescriptive envelope tables of Chapter 5 are valid up to what percentage of window-to-wall area?

8. Maricopa County, Arizona requires the installation of supply air economizers on cooling systems larger than how many Btu/h?

9. A car dealership plans to expand its sales lot by 100,000 square feet. What is the exterior lighting power budget for this new sales lot?

10. Exterior ground lighting > 100 watts is not depicted as meeting the source efficacy of 60 lumens/watt. What energy conserving feature must be installed?
Answers to Test Your Knowledge

1. Low energy buildings and buildings that do not contain conditioned space (Section 101.5.2).

2. It is the ratio of the solar heat gain entering the space through the fenestration assembly to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation which is then re-radiated, conducted or convected into the space (Section 202).

3. 67°F (Section 301.3.1)

4. (a) Ceiling $R$-value = 30 (Using Table 301.1, zone 2 for Jackson County, MS, and using Table 402.1.1, for zone 2, identify 30)
(b) $U$-factor = 0.40 (Using Table 301.1, zone 4 for Clinton County, IL, and using Table 402.1.1, for zone 4, identify 0.40)

5. R-5 (Section 503.2.7)

6. 1.2 w/sq. ft. (Table 505.5.2)

7. 402 (Table 502.3)

8. There is no requirement for supply air economizers in Maricopa County, Arizona (Zone 2B) [Figure 301.1 and Table 503.3.1(1)]

9. 100,000 ft$^2$ x 0.5 W/ft$^2$ = 50,000 watts [Table 505.6.2, Outdoor Sales, Open Areas (including vehicle sales lots), identify 0.50 W/ft$^2$]

10. A motion sensor (Section 505.6.1)
International Zoning Code

The 2006 *International Zoning Code*® (IZC®) addresses the need for consistent and uniform zoning ordinances through model code regulations that protect the public health and safety in all communities, large and small. This model code also encourages international consistency in the application of provisions.

The code changes in this cycle resulted in technical consistency with all of the International Codes® published by the International Code Council (ICC).

Scope

The provisions of this code shall apply to the construction, addition, alteration, moving, repair and use of any building, structure, parcel of land or sign within a jurisdiction, except:

- Work located primarily in a public way.
- Public utility towers and poles.
- Public utilities unless specifically mentioned in this code.

Intent

This code is to safeguard the health, property and public welfare by controlling the design, location, use or occupancy of all buildings and structures through the regulated and orderly development of land and land uses within this jurisdiction. Standards are referenced through the code and are listed in Chapter 14. In fulfilling these purposes, this ordinance is intended to benefit the public as a whole and not any specific person or class of persons.
Chapter 8: General Provisions

<table>
<thead>
<tr>
<th>Code Section</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>801.1</td>
<td>General</td>
<td>Language revised to require off-street parking in compliance with Chapter 8 whenever any building is erected, altered, enlarged, converted or increased in size of capacity.</td>
</tr>
<tr>
<td>806.1</td>
<td>General</td>
<td>Deleted the allowance for the code official to waive the requirements for loading docks on unusual lots.</td>
</tr>
<tr>
<td>N/A</td>
<td>807 Grading and Excavating Regulations</td>
<td>Deleted all requirements for grading and excavation from the IZC.</td>
</tr>
</tbody>
</table>

Zoning Code vs. Building Code

<table>
<thead>
<tr>
<th>Classification</th>
<th>Zoning Code Building Types</th>
<th>Building Code Classification</th>
<th>Building Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>R, Division 1</td>
<td>• Police and fire stations • Recreation centers • Schools and non-profit colleges • Single-family dwellings</td>
<td>R-1</td>
<td>• Boarding houses (transient) • Hotels (including motels)</td>
</tr>
<tr>
<td>R, Division 2</td>
<td>R, Division 1 zones and two-family dwellings</td>
<td>R-2</td>
<td>• Apartment houses • Boarding houses (not transient) • Convents • Dormitories • Fraternities and sororities • Monasteries</td>
</tr>
<tr>
<td>R, Division 3</td>
<td>• Apartment houses • Boarding houses • Condominiums • Congregate residences • R, Division 2 zones</td>
<td>R-3</td>
<td>• Do not qualify as R-1, R-2 or I • Two or less dwelling units • Adult and child care facilities for five or fewer persons of any age for less than 24 hours</td>
</tr>
</tbody>
</table>

For Discussion

International Fire Code® (IFC®) Section 903.2.7 Group R-1 — An automatic sprinkler system shall be provided throughout buildings with a Group R-1 fire area.

Mr. Person has just recently began working as a building official and does not yet have a complete knowledge of the various codes that he is required to enforce. If Mr. Person has confused the residential classifications of the zoning codes such as the fire code stated above, what are some of the challenges he would face from contractors, owners and inspectors? How could he recover from this mistake?
Exempt Signs

The following signs shall be exempt from the provisions of this chapter. No sign shall be exempt from Section 1004.4.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Official notices authorized by a court, public body or public safety official.</td>
</tr>
<tr>
<td>2</td>
<td>Directional, warning or information signs authorized by federal, state or municipal governments.</td>
</tr>
<tr>
<td>3</td>
<td>Memorial plaques, building identification signs and building cornerstones when cut or carved into a masonry surface or when made of noncombustible material and an integral part of the building or structure.</td>
</tr>
<tr>
<td>4</td>
<td>The flag of a government or noncommercial institution, such as a school.</td>
</tr>
<tr>
<td>5</td>
<td>Religious symbols and seasonal decorations within the appropriate public holiday season.</td>
</tr>
<tr>
<td>6</td>
<td>Works of fine art displayed in conjunction with a commercial enterprise where the enterprise is to receive direct commercial gain.</td>
</tr>
<tr>
<td>7</td>
<td>Street address signs and combination nameplate and street address signs that contain no advertising copy and which does not exceed 6 square feet (0.56 m²) in area.</td>
</tr>
</tbody>
</table>

Section 1004.4 Traffic Visibility — No sign or sign structure shall be erected at the intersection of any street in such a manner as to obstruct free and clear vision, nor at any location where its position, shape or color may interfere with or obstruct the view of or be confused with any authorized traffic sign, signal or device.

Prohibited Signs

The following devices and locations shall be specifically prohibited.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Signs that obstruct or interfere with an official traffic sign, signal or device. Signs that obstruct or interfere with a driver’s view of approaching, merging or intersecting traffic.</td>
</tr>
<tr>
<td>2</td>
<td>Signs that encroach upon or overhang public right-of-way except as allowed elsewhere in this code.</td>
</tr>
<tr>
<td>3</td>
<td>Signs which blink, flash or are animated by lighting in any fashion that would cause signs to look like traffic safety signs and lights or municipal vehicle warnings from a distance.</td>
</tr>
<tr>
<td>4</td>
<td>Portable signs except as allowed for temporary signs.</td>
</tr>
<tr>
<td>5</td>
<td>Any sign attached to or placed on a vehicle or trailer parked on public or private property, except for signs indicated in the IZC.</td>
</tr>
<tr>
<td>6</td>
<td>Vehicles and trailers that are not used primarily as static displays, advertising a product or service, nor utilized as storage, shelter or distribution points for commercial products or services for the general public.</td>
</tr>
<tr>
<td>7</td>
<td>Balloons, streamers or pinwheels except those temporarily displayed as part of a special sale, promotion or community event. “Temporarily” means no more than 20 days.</td>
</tr>
</tbody>
</table>
There are specific requirements provided in the IZC for the following types of signs.

<table>
<thead>
<tr>
<th>Identification Signs</th>
<th>Temporary Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Directional signs</td>
<td>• Development and construction signs</td>
</tr>
<tr>
<td>• Free-standing signs</td>
<td>• Political signs</td>
</tr>
<tr>
<td>• Wall signs</td>
<td>• Portable signs</td>
</tr>
<tr>
<td></td>
<td>• Real estate signs</td>
</tr>
<tr>
<td></td>
<td>• Special event signs in public ways</td>
</tr>
<tr>
<td></td>
<td>• Special promotion, event and grand opening signs</td>
</tr>
</tbody>
</table>

Requirements for Specific Sign Types

- Awning signs
- Canopy and marquee signs
- Menu boards
- Projecting signs
- Roof signs
- Under canopy signs
- Window signs
COMMON FREESTANDING SIGN TYPES

WALL OR FASCIA SIGNS ON STOREFRONTS

ROOF SIGN

PROJECTING SIGN

CANOPY SIGN
ON FREESTANDING CANOPY
Test Your Knowledge

1. List two changes from the 2003 IZC to the 2006 IZC.
   
   •
   
   •

2. A set of drawings is submitted to the building department proposing a structure that is designed to provide complete living facilities for two families. In applying the International Zoning Code, the correct Classification would be:
   a. R, Division 1.
   b. R-3.
   c. R-2.
   d. R, Division 2.

3. A boarding house for individuals that are transient in nature is proposed for construction in a jurisdiction. In applying the International Zoning Code the correct classification would be:
   a. R-1.
   b. R, Division 3.
   c. R-2.
   d. R, Division 1.

4. A multi-family dwelling is proposed for construction in a jurisdiction. The building contains two dwelling units per floor for each of its three floor levels. In applying the International Zoning Code, the correct classification would be:
   a. R, Division 2.
   b. R-2.
   c. R, Division 3.
   d. R-3.
5. A building containing Joe’s Barber Shop is proposed for construction in a jurisdiction. The front elevation shows the words “Barber Shop” on the brick parapet above the entry. The lettering is achieved by incorporating a different color of masonry within the background masonry color. In applying the sign provisions of the International Zoning Code, this sign is:

a. prohibited.
b. a roof sign.
c. exempt.
d. a canopy sign.

6. A sign has been placed on an old trailer once used to transport produce. The sign will be displayed for only two weeks and then moved to another location. It is well off the road and away from any traffic signals and signs. The sign:

a. is exempt.
b. is prohibited.
c. requires a permit.
d. is allowed as a roof sign.

7. “In addition to any allowable wall sign, every single-family residential subdivision, multiple-family residential complex, commercial or industrial building, and every separate nonresidential building in a residential zone shall be permitted to display free-standing or combination signs per street frontage are subject to the limiting standards set forth in Table 1008.1.2.” This is a specific sign requirement for which of the following?

a. Projecting signs
b. Temporary signs
c. Identification signs
d. Canopy signs
Answers to Test Your Knowledge

1. Answers will vary. For example, acceptable answers would be:
   - In Section 801.1 language was revised to require off-street parking in compliance with Chapter 8 whenever any building is erected, altered, enlarged, converted or increased in size of capacity.
   - In Section 806.1 the allowance for the code official to waive the requirements for loading docks on unusual lots was deleted.
   - In Section 807 all requirements for grading and excavation were deleted.

2. d. R, Division 2

3. b. R, Division 3

4. c. R, Division 3

5. c. Exempt

6. b. The trailer is not allowed as a portable sign or a temporary sign. Also, vehicles and trailers are not used primarily as static displays, advertising a product or service. (Section 1006.1)

7. c. (Section 1008.1.2)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing Organization</td>
<td>International Code Council (ICC)</td>
<td>International Association of Plumbing and Mechanical Officials (IAPMO)</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>Developed by ICC founders Building Officials and Code Administrators International (BOCA), International Conference of Building Officials (ICBO) and Southern Building Code Congress International (SBCCI). The IMC was first published in 1996 after an extensive process to integrate and combine the provisions of the separate model mechanical codes published by the three members of the ICC and subject the draft IMC to the ICC code development process. Prior to 1996, the three model code groups developed separate mechanical codes: BOCA - National Mechanical Code, SBCCI - Standard Mechanical Code, and ICBO - Uniform Mechanical Code. With the consolidation of BOCA, ICBO and SBCCI into the ICC, each model code group ceased development of its own mechanical code. Subsequent to the first 1996 edition, ICC developed the 1998, 2000 and 2003 editions of the IMC.</td>
<td>Initially developed by ICBO and IAPMO. The UMC was first published in 1967. At that time, it was jointly developed by ICBO and IAPMO. They continued joint publication until IAPMO severed its relationship with ICBO in 1979. That year, each organization published separate editions of the UMC, with some differences. A cooperative effort was reestablished for the 1982, 1985, 1988 and 1991 editions. In 1994, each organization again reverted to development and publication of separate mechanical codes. ICBO published only one subsequent edition of the UMC in 1997, transferring its efforts to developing the International Mechanical Code. IAPMO has since published editions of its UMC in 1997 and 2000 and plans on publishing a 2003 edition.</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Adoption Area</td>
<td>As state and local agencies adopted the three model codes, the U.S. evolved into regional areas of adoption. ICBO Uniform Codes were predominately adopted west of the Mississippi River. BOCA National Codes were predominantly adopted east of the Mississippi and from Virginia and Kentucky north. SBCCI Standard Codes were predominantly adopted east of the Mississippi and from Tennessee and North Carolina south. Since its publication, the vast majority of state and local agencies have adopted the IMC. As of May 2003, 28 states have adopted the IMC statewide, and in 14 additional states the IMC has been adopted locally.</td>
<td>When IAPMO published its contemporary version of the UMC in 1997, it was successful in having the code adopted in some western states in lieu of the ICBO UMC as the states updated their codes. Today the UMC has been adopted in a handful of western states.</td>
<td></td>
</tr>
<tr>
<td>Mechanical Equipment Approval</td>
<td>Provides specific criteria and references standards that clarify the basis for approval by the designated authority.</td>
<td>Requires approval in certain instances, but there are no specific provisions and/or referenced standards to guide the approval process.</td>
<td>In adopting the UMC, the approval authority will have to develop and apply its own individual and unique criteria, which can have a significant impact on the time and resources needed to implement the approval process.</td>
</tr>
<tr>
<td>Listing and Labeling of Mechanical Equipment</td>
<td>Requires all appliances (devices using energy and regulated by the IMC) to be tested, listed and labeled. This ensures current and future production satisfies certain safety standards.</td>
<td>Does not require all appliances to be tested, listed and labeled, which leaves it to the administrative authority.</td>
<td>Application of the UMC can place an additional burden on the administrative authority, create additional work for manufacturers and compromise public safety.</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mechanical Ventilation for Occupied Spaces</td>
<td>The chapter on mechanical ventilation addresses the air quality occupants breathe via established minimum ventilation rates and outdoor air requirements. It is coordinated with the International Building Code (IBC).</td>
<td>Does not contain any provisions covering mechanical ventilation.</td>
<td>Under the UMC, mechanical systems could be installed that provide inadequate ventilation and indoor air quality, affecting the health and productivity of the building occupants. The adopting jurisdiction would have to develop its own requirements or reference other requirements.</td>
</tr>
<tr>
<td>Indoor Comfort Conditions</td>
<td>Provisions ensure the building interior has systems to maintain acceptable indoor temperatures during the heating season.</td>
<td>Does not contain such provisions.</td>
<td>Under the UMC, buildings could have inadequate heating system capacity. The adopting jurisdiction would have to develop its own requirements or reference other requirements.</td>
</tr>
<tr>
<td>Mechanical Refrigeration/ Cooling</td>
<td>Contains provisions for the safe application and use of many new refrigerants. Such provisions have been developed to address toxicity, fire, global warming and other issues that significantly restrict the application and use of more traditional refrigerants. The 2000 IMC provisions are based on the 1997 edition of ASHRAE Standard 15 on mechanical refrigeration. The 2003 IMC has even more information for newer refrigerants.</td>
<td>Does not have as wide coverage (as the IMC) on refrigerants and as such impacts the timely acceptance and use of more current and safe technology. References the 1978 edition of ASHRAE Standard 15.</td>
<td>Under the UMC, the adopting jurisdiction would have to amend the code to address more contemporary requirements and reference the latest edition of ASHRAE Standard 15.</td>
</tr>
<tr>
<td>Duct Materials and Construction for Mechanical Ventilation Systems</td>
<td>Contains provisions for a wider variety of duct materials. The IMC recognizes different pressure classifications to ensure the duct construction is capable of addressing the anticipated pressures of the mechanical system.</td>
<td>Does not address as broadly as the IMC.</td>
<td>Use of the UMC could limit the application of new duct materials or allow construction of duct systems that cannot adequately handle the system design pressures.</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fire and Smoke Dampers in Duct Systems</td>
<td>Provides limitations and requirements for duct and air transfer openings associated with certain building assemblies.</td>
<td>Provides no such requirements. Duct systems or air transfer openings can occur in fire walls, fire barriers, fire partitions and smoke barriers without having dampers installed to restrict the spread of fire or smoke through the building assembly.</td>
<td>Under the UMC, the adopting jurisdiction would have to develop its own requirements for duct and air transfer openings or reference other requirements.</td>
</tr>
<tr>
<td>Hydronic Piping</td>
<td>Recognizes and provides for the application and use of all piping materials suitable for hydronic systems, including nonmetallic piping.</td>
<td>Only allows certain metallic piping.</td>
<td>The UMC could affect the timely use of newer piping materials and technologies that can reduce construction costs without compromising safety and performance.</td>
</tr>
<tr>
<td>Impact on Structural Members of the Building</td>
<td>Contains provisions to limit the degree to which wood and steel framing members can be cut, notched or bored through to accommodate mechanical systems.</td>
<td>Does not contain provisions to address this issue.</td>
<td>Application of mechanical systems and equipment under the UMC could adversely impact the building structure and its performance under normal or emergency situations.</td>
</tr>
<tr>
<td>Smoke Control Systems</td>
<td>Contains provisions for smoke control systems, which provide for removal of smoke by mechanical means during a fire.</td>
<td>Does not address smoke control systems.</td>
<td>Under the UMC, the adopting jurisdiction would have to develop its own requirements for smoke control systems or reference other requirements.</td>
</tr>
<tr>
<td>Other Systems and Equipment</td>
<td>Contains requirements for the safe application and use of fuel cells, pool heaters, solid fuel-burning appliances, factory-built fireplaces and controls for space temperature and ventilation rates.</td>
<td>Provides no guidance or requirements for the safe application and use of fuel cells, pool heaters, solid fuel-burning appliances, factory-built fireplaces and controls for space temperature and ventilation rates.</td>
<td></td>
</tr>
</tbody>
</table>
IMC - is in use in 42 states and the District of Columbia (as of May 2003)

**Adopted Statewide (X) - 24**
- Alaska
- Connecticut
- District of Columbia
- Florida
- Georgia
- Idaho
- Indiana
- Michigan
- Missouri
- New Hampshire
- New Jersey
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Rhode Island
- South Carolina
- Texas
- Utah
- Virginia
- West Virginia
- Wisconsin
- Wyoming

**Adopted, But May Not Yet Be Effective (A) - 4**
- Alabama
- Massachusetts
- Pennsylvania
- Washington

**Adopted by Local Governments (L) - 14**
- Arizona
- Colorado
- Delaware
- Illinois
- Iowa
- Kansas
- Maine
- Maryland
- Nebraska
- Nevada
- New Mexico
- South Dakota
- Tennessee
- Mississippi
Review of the NFPA document comparing NFPA 5000 and the 2000 IBC that was presented by NPFA to the city of Mesa AZ – Conover/Farvardin – 02-18-03

The following are comments on random portions of the above document. Time did not permit a complete and exhaustive review, although one is recommended if ICC is to take further action to counter this document.

The document has numerous errors. The format of the document and manner in which the comparison is presented is really misleading. The most obvious and misleading problem with the document is the numerous times NFPA indicates that the IBC has “no requirements” when in fact the IBC or other I-Codes do. For the city officials that reviewed this “comparison” in Mesa AZ it is likely they would not delve into all the details behind the comparison and simply take the comparison at face value; most importantly the myriad times “no requirements” shows up in the document. Someone not familiar with both codes and the complexity of comparing their provisions would simply conclude that the ICC is clearly a substandard document. A quick scan of the document suggests that 25% of the identified NFPA 5000 sections have a corresponding “no requirements” in the ICC column.

This document is damaging to the ICC, will have an adverse effect on the interests of the ICC and consideration should be given to taking some form of “cease and desist” action against NFPA. At a minimum the ICC should prepare and publish a rebuttal review.

Random examples of errors are presented below. Section numbers below refer to those for the NFPA 5000 listed in the first column of the comparison. Most of those below address situations where NFPA indicates that the IBC has “no provisions”.

1.3.3 – The IBC does have provisions for moved buildings in section 101.2 where movement of buildings is noted. The IBC would also apply to an existing building after movement as that activity would be considered a renovation subject to the code. Chapter 34 has a section requiring moved buildings to be brought up to code as for new structures.

1.4 – The NFPA document infers that there are such requirements but a review of NFPA 5000 only finds they are “reserved” (e.g. NFPA has not requirements either). Following that logic anyone could publish an outline of a code and look good. What such requirements?

1.5.3 – The IBC has requirements. IBC section 104.11 is all about alternatives. Section 104.10 is also about modifications and allows the code official more flexibility than 104.11.
1.5.5 – The IBC has requirements. IBC section 104.11 is all about systems, materials and methods. The problem that this highlights that will be carried throughout the document is that the section outline of the NFPA 5000 document is laid out in the first column and then the document attempts to match section headings and titles in the IBC with that NFPA list. Because the two documents have clear differences in outline and approach a comparison based on section headings, instead of issues, will be misleading. This approach does not allow for a thorough comparison and because the NFPA did not spend the time to find the comparative criteria in the IBC the terms “no requirements” arise repeatedly when they should not.

1.5.7 – The IBC does specify a period for retention of records. It refers to that period applicable to public records as set by the state or local agency adopting the code.

1.5.8 – The IBC does have provisions for appeals in section 112.

1.6 – The IBC includes soft conversion of units throughout but does not have a written policy on such in the body of the code. ANSI may have a requirement that standards contain a statement on unit conversions.

1.7.1.5 – The IBC does have provisions in section 110 and the IPMC also covers the issues of unlawful use. That raises another problem with the comparison. It only covers the NFPA 5000 document against the IBC but should really cover the entire family of I-Codes as they are referenced in the IBC and together form a complete package. This becomes more pronounced in the sections related to mechanical systems.

1.7.1.6 – The IBC does have provisions on concealed work in sections 109.1 and 109.3.8.

1.7.5.3.2 – The IPMC covers this issue in section 108.1.

1.7.5.3.5 - The IPMC covers this issue in section 107.

1.7.5.3.6 – Section 115.4 (c) of the IBC specifies posting of a notice of violation. This is also covered in sections 108.3 and 108.4 of the IPMC. It is worth noting that this section of the NFPA 5000 document specifies specific prescriptive mandatory language. The intent of the IBC is to require this but, as fines may be involved, leave how it is treated to each adopting jurisdiction based on state and local laws. Because the comparison simply states no requirements the reader is clearly left with the opinion that the IBC is deficient when in fact there are criteria and valid reasons for the manner in which this is addressed by the IBC that will never be known by the reader.
1.7.5.3.7 – Emergency action is covered in section 109.2 of the IPMC. It is interesting to note that the AHJ can order occupants to vacate a building for unsafe conditions. The definition of AHJ in NFPA 5000, however, only includes the scope of approving equipment, materials, an installation or a procedure. It would appear that the intent of 1.7.5.3.7 with respect to emergency action to vacate and possibly fix a building is broader in scope than that provided to the AHJ in the definition of AHJ.

1.7.6.1.1.3 – The comparison leads the reader to believe that the I-Codes do not have provisions for buildings in flood hazard areas. The section in question deals with permits and with respect to flooding covers special conditions for putting temporary structures in a flood hazard area. As such the presentation of the information in the document is misleading.

1.7.6.1.2 - Section 105.4 of the IBC does cover this issue.

1.7.6.2.2 – The zoning code would typically cover this issue, not the building code.

1.7.6.2.4 – The issue of building relocation is covered in section 103.3 of Appendix D of the IBC. The movement of a building is also covered in section 105.1 of the IBC, and Chapter 34.

1.7.6.2.5 – Demolition is covered by sections 107 and 110 of the IPMC.

1.7.6.8.2 – The issue of authorization of an existing occupancy is covered in sections 101.2 and 101.3 of the IPMC.

1.7.6.8.6 – After this line in the document there are a number of instances noted where the NFPA 5000 document does not cover certain items. Many of these items not covered by the NFPA are serious omissions. Others are covered but the person doing the comparison was not aware of them. For instance section 101.4 of the IBC adopts other codes. This is done in section 2.2 of the NFPA 5000 but by saying they are not covered in chapter 1, which is true, and not saying where they are covered the author leads the reader into thinking that there are no such requirements in the NFPA document. This example, while in favor of the ICC, goes to the credibility of the document as a whole.

Chapter 4 – The NFPA document lists out key sections and titles in NFPA 5000 and then prefaces the presentation by saying there is no corresponding chapter. This is true but misleading in that it does not go further to say where comparable provisions are located in the I-Codes. For instance section 101.3 of the IBC covers the goals and objectives of the code in a manner similar to section 4.1 of NFPA 5000. A review of all the subsections in section 4.1 also shows they mirror the IBPC in intent. This would not be caught in just looking at the IBC instead of all the codes in the I-Code family. Section 4.2 is informational in nature and is
not a requirement. Showing that section with no comparable IBC section is also misleading. Section 4.3 establishes the option to use prescriptive or performance approaches. The document is misleading by saying the ICC has no corresponding chapter. The IBC is the prescriptive approach and the IBPC is the performance option along with section 104.11 of the IBC on alternative materials and methods. Again, in this instance the reader is left with an incorrect feeling that an issue is addressed by the NFPA but not the ICC.

Chapter 5 – The NFPA document essentially says the ICC has no performance based option. Section 104.11 of the IBC is such an option as is the IBPC. The IBPC would not necessarily have to be referenced in the IBC as under section 104.11 of the IBC the code official could use the IBPC as the litmus test for equivalent performance already.

7.1.2 – The NFPA 5000 refers to applicable codes on the issue of electrical, plumbing and mechanical matters and then the document says the ICC has no such requirements. The IMC, NEC and IPC, as referenced by the IBC, provide those requirements. The document is very misleading in this instance.

7.1.3 – The IBC does have provisions for protection of exterior walls and openings in those walls.

7.1.5 – Fire department access should be covered in the zoning or fire code. A statement of no requirements in misleading. It is covered in the fire code!

7.2.7 – The IBC does have fire resistance protection requirements for structural elements. The document is really misleading because the reader is left with the feeling that the IBC has no such provisions.

7.3.3 – The issue is addressed in section 704.11 of the IBC.

7.3.4 – This is the definition of fire separation distance, which is covered in section 702.1 of the IBC.

7.4.1.1 – This is covered in section 302.3 of the IBC.

7.4.1.2 – This is covered in table 302.3.3 of the IBC.

7.4.2.3 and 7.4.3.4 – These sections allow for multiple types of construction to be used in a building but in doing so they limit the area and height of the building to the most restrictive of the construction types used. To say that the IBC has no such requirements are misleading. It contains minimum provisions while in this situation the NFPA 5000 contains minimum provisions and also seems to indicate that if someone were to partially exceed those provisions they still have to meet the minimum code requirements. It would seem that NFPA 5000 is covering a permissive situation that could exist
and be addressed in the IBC as well (e.g. the building could be designed to the minimum in the code and if the designer chose to use a better type of construction in part of the building they could to that but the end result with the IBC would still be the same – height and area would be based on the more restrictive of the multiple construction types).

7.4.3 et. al. – These issues are covered in table 503 and section 502.1 of the IBC.

7.5.2 – This is covered in section 504.2 of the IBC.

7.6.3.3 – The two story storage building situation is covered in section 507.3 of the IBC and the single story storage building situation is covered in section 507.2 of the IBC. This part of the document is simply in error and misleading. As presented the document really says that “the IBC has no requirements for sprinklering one or two story storage buildings” when in fact that is not true (See 903.2.10-903.2.12).

8.3.2.2 – The title of this section in the NFPA 5000 code is not design loads. A review of the NFPA text also shows it to be permissive. Section 705.2 of the IBC would address the structural stability of fire walls but as presented the document misleads the reader that the NFPA 5000 has something that it does not and the IBC is completely moot on the issue.

8.3.2.10.1 – Section 705.6, exceptions 2 to 6, of the IBC covers this issue.

13.2 – Sections 3202.2 and 3202.3 would appear to address projections into alleys.

13.3 – Section 3202.1 would apply to space below sidewalks.

49.2.1 – NFPA 5000 does not require all rooms be continuously provided with required ventilation while occupied. The I-Codes do have requirements as section 1202.4 of IBC and Chapter 4 of the IMC essentially require the same thing as NFPA 5000.

49.2.2 – The IMC provides comparable requirements. Note that NFPA 5000 references ASHRAE 62 and as such the user of the NFPA 5000 must get a copy of that document, which is a standard, and try and apply it with the provisions of the NFPA 5000. The IMC contains the actual ventilation rates in the code and the user does not need to rely on another standard. Of particular important, as ASHRAE is separately responsible for updating standard 62, the folks at NFPA will always be relying on the ASHRAE process to provide them appropriate ventilation criteria. The ICC need rely only on the ICC code change process for such updating.
49.2.3 – The IMC provides comparable requirements.

49.2.4 to 49.2.6 – The I-Codes do provide requirements for these issues.

49.7 – The IMC and IECC contain design conditions as does the IBC in requiring an interior design of 68 F at a point 3 ft. above the floor and 2 ft. away from an exterior wall.

Chapter 51 – The document is misleading by saying “no requirements other than the IECC”. An unbiased review would simply refer to the IECC and omit “no requirements other than”. A review of the document shows that it is wrong.

NFPA 5000 references ASHRAE 90.1 for “commercial” buildings and provides detailed requirements for one and two family dwellings (not commercial as noted in the document). The detailed provisions for one and two family dwellings in NFPA 5000 are similarly contained in the IRC, something not noted in the document.
### Combined Summary of 2000 IBC VS. NFPA 5000

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Fire Command</td>
<td>403.8</td>
<td>33.2.5.1</td>
<td>IBC – One hour separation – Greater Fire Fighter Safety</td>
</tr>
<tr>
<td></td>
<td>911</td>
<td>33.2.5.2</td>
<td>NFPA – No specific separation or minimum sf requirements</td>
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<tr>
<td></td>
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<td></td>
<td>Fire Fighter Safety Issue: IBC provides for better protection of the fire command center</td>
</tr>
<tr>
<td></td>
<td>A fire command center complying with Section 911 shall be provided in a location approved by the fire department.</td>
<td>33.2.5.1 A central control station shall be provided in a location approved by the fire department.</td>
<td></td>
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<tr>
<td></td>
<td>911.1 Features.</td>
<td>33.2.5.2 The control station shall contain the following:</td>
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<td></td>
<td>Where required by other sections of this code, a fire command center for fire department operations shall be provided. The location and accessibility of the fire command center shall be separated from the remainder of the building by not less than a 1-hour fire-resistance-rated fire barrier. The room shall be a minimum of 96 square feet (9 m²) with a minimum dimension of 8 feet (2438 mm). A layout of the fire command center and all features required by the section to be contained therein shall be submitted for approval prior to installation. The fire command center shall comply with NFPA 72 and shall contain the following features.</td>
<td>(1) Voice fire alarm system panels and controls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. The emergency voice/alarm communication system unit.</td>
<td>(2) Fire department two-way telephone communication service panels and controls where required by another section of this Code</td>
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<td></td>
<td>(3) Fire detection and fire alarm system annunciation panels</td>
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<td></td>
<td></td>
<td>(4) Elevator floor location and operation annunciators</td>
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<td>(5) Sprinkler valve and waterflow annunciators</td>
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<td>(6) Emergency generator status indicators</td>
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<td></td>
<td></td>
<td>(7) Controls for any automatic stairway door unlocking system</td>
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### Topic 1: Stairway Communications System

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<td><strong>Section</strong></td>
<td><strong>Summary</strong></td>
<td><strong>Section</strong></td>
</tr>
<tr>
<td>403.11.1</td>
<td>Stairway communications system. A telephone or other two-way communications system connected to an approved constantly attended station shall be provided at not less than every fifth floor in each required stairway where the doors to the stairway are locked.</td>
<td></td>
</tr>
</tbody>
</table>

### Topic 2: Fire Protection of Openings

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<tbody>
<tr>
<td><strong>Section</strong></td>
<td><strong>Summary</strong></td>
<td><strong>Section</strong></td>
</tr>
<tr>
<td>1003.2.1</td>
<td>Where a building contains two or more occupancies, the means of</td>
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### Topic 2: Fire Protection of Openings

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<td><strong>Summary</strong></td>
<td><strong>Section</strong></td>
</tr>
<tr>
<td>1.7.6.3.1.5</td>
<td>Requires listing of specific materials on plans</td>
<td></td>
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<tr>
<td>14.</td>
<td>Generator supervision devices, manual start and transfer features.</td>
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<td>15.</td>
<td>Public address system, where specifically required by other sections of this code.</td>
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<td></td>
<td>eg</td>
<td>egress requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.</td>
<td>Section</td>
</tr>
<tr>
<td>Number by Combination</td>
<td>1003.2.2.3</td>
<td>Where occupants from accessory spaces egress through a primary area, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory space.</td>
<td>No related section</td>
</tr>
<tr>
<td>Posting of Occupant Loads</td>
<td>1003.2.2.5</td>
<td>Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.</td>
<td>No related section</td>
</tr>
<tr>
<td>Outdoor Areas</td>
<td>1003.2.2.10</td>
<td>Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with Chapter 11.</td>
<td>No related section</td>
</tr>
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<td>Section Summary</td>
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<td>Comment</td>
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<td>the anticipated use. Where outdoor areas are to be used by persons in</td>
<td></td>
<td>Fire Fighter Safety Issue: IBC would require MEO from outside area and include it in the design. Lack of provisions in NFPA could cause for overcrowding and insufficient MEO</td>
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<td>addition to the occupants of the building, and the path of egress</td>
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<td>travel from the outdoor areas passes through the building, means of</td>
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<td>egress requirements for the building shall be based on the sum of the</td>
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<td>occupant loads of the building plus the outdoor areas.</td>
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<td>(2) Exceptions</td>
<td></td>
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</tr>
<tr>
<td>Door</td>
<td>1003.2.3.1</td>
<td>11.2.1.4.4</td>
<td>IBC - Limits door swing into MEO so that it does not get into the egress path</td>
</tr>
<tr>
<td>Encroachment</td>
<td>Doors opening into the path of egress travel shall not reduce the</td>
<td>Also includes:</td>
<td>NFPA - Minimum landing equal to width of door would allow the door to block the egress path</td>
</tr>
<tr>
<td></td>
<td>required width to less than one-half during the course of the swing.</td>
<td>a. Doors shall not open directly onto a stair without a landing.</td>
<td>Fire Fighter Safety Issue:</td>
</tr>
<tr>
<td></td>
<td>When fully open, the door shall not project more than 7 inches (178</td>
<td>b. The landing shall have a width not less than the width of the door.</td>
<td>In NFPA the door in the open position could block the means of egress</td>
</tr>
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<td>mm) into the required width.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illumination</td>
<td>1003.2.1.2</td>
<td>28.2.9 (Biz)</td>
<td>IBC – More specific allowing for better lighting in an emergency.</td>
</tr>
<tr>
<td>Emergency Power</td>
<td>The power supply for means of egress illumination shall normally be</td>
<td>Provided where:</td>
<td>NFPA – Needs Updating</td>
</tr>
<tr>
<td></td>
<td>provided by the premise’s electrical supply.</td>
<td>a. building is 2 or more stories in height above the level of exit discharge.</td>
<td>Fire Fighter Issue: ICC provides better lighting in an emergency.</td>
</tr>
<tr>
<td></td>
<td>In the event of power supply failure, an emergency system shall</td>
<td>b. 50 or more persons above or below the level of exit discharge</td>
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<td>automatically illuminate all of the following areas:</td>
<td>c. subject to 300 or more total occupants</td>
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<tr>
<td></td>
<td>1. Exit access corridors, passageways, and aisles in rooms and spaces</td>
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<td>which require two or more means of egress.</td>
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<td>Section</td>
</tr>
<tr>
<td>2. Exit access corridors and exit stairways located in buildings required to have two or more exits.</td>
<td>1003.3.3, 12.1</td>
<td>Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with Section 1509.2.</td>
<td>4.6</td>
</tr>
<tr>
<td>3. Interior exit discharge elements, as permitted in Section 1006.1, in buildings required to have two or more exits.</td>
<td></td>
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<tr>
<td>4. The portion of the exterior exit discharge immediately adjacent to exit discharge doorways in buildings required to have two or more exits.</td>
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<td>The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with the ICC Electrical Code.</td>
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<tbody>
<tr>
<td>Width of Ramp</td>
<td>1003.3.4.4.1</td>
<td>The minimum clear width of a ramp and the minimum clear width between handrails is 36 inches.</td>
<td>11.2.5.2</td>
<td>Minimum clear width is 44 inches, except projections not more than 4-1/2 inches at or below handrail height at each side. (44-9=35 inches)</td>
<td>IBC – provides better access by controlling the width between hand rails. Minimum width for egress is wider in IBC. Fire Fighter Issue: Wider clearance between handrails in IBC will allow better egress and better access for the fire department.</td>
</tr>
<tr>
<td>(Ramp) Restrictions</td>
<td>1003.3.4.4.3</td>
<td>Means of egress ramps shall not reduce in width in the direction of egress travel. Projections into the required ramp and landing width are prohibited. Doors opening onto a landing shall not reduce the clear width to less than 42 inches (1067 mm).</td>
<td>11.3.2</td>
<td>The width of MOE shall be measured in the clear at the narrowest point of the exit component under consideration. Exception: Projections not more than 4 ½ inches on each side shall be permitted at 38 inches and below.</td>
<td>IBC – Minimum width of ramps greater in IBC along with the restriction on doors opening into the means of egress. NFPA – Allow a 4 ½ projection into the clear width on both sides. Fire Fighter Issue: NFPA narrower means of egress on ramps is further restricted by allowing 4 ½ projects on each side. Egress and access by fire fighters will be restricted as compared to IBC.</td>
</tr>
<tr>
<td>Multiple Tenants</td>
<td>1004.2.3.1</td>
<td>Where more than one tenant occupies any one floor of a building or structure, each tenant space, dwelling unit, and guestroom shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units, and guestrooms.</td>
<td>No similar section.</td>
<td></td>
<td>NFPA has no restriction on tenant occupancies and control of passing through an adjacent tenant space, dwelling, unit, and guestroom. Fire Fighter Issue: Lack of control on passing thru other spaces not under the control of a tenant occupant could restrict egress and access by the fire department due to locked doors.</td>
</tr>
<tr>
<td>Aisles In Public Area</td>
<td>1004.3.1.1</td>
<td>In public areas the minimum clear aisle width shall be 36 inches where seats, tables, or equipment occupy more than 50% of the area.</td>
<td>11.3.4.1</td>
<td>The width of any means of egress shall not be less than 36 inches.</td>
<td>Basic provisions of 36&quot; the same.</td>
</tr>
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<tr>
<td></td>
<td>where seats, tables, or equipment are placed on 1 side of the aisle and 44 inches where fixtures &amp; equipment are placed on both sides of the aisle.</td>
<td>Exception: The width of exit access formed by furniture and moveable partitions serving not more than 6 persons and having a length not exceeding 50 feet shall not be less than 18 inches above a height of 38 inches provided that widths not less than 36 inches for exit access without permanent walls.</td>
<td></td>
</tr>
<tr>
<td>Secondary Water Supply</td>
<td>903.3.5.2</td>
<td>A secondary on-site water supply shall be provided for high-rise buildings in seismic category C, D, E or F. Duration not less than 30 minutes. Exception: Existing buildings.</td>
<td></td>
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</tbody>
</table>
RESIDENTIAL SPRINKLERS ISO FACT SHEET

ISO is an independent statistical, rating, and advisory organization that serves the property/casualty insurance industry. ISO is the leading supplier of underwriting information, advisory loss costs, supplementary rating information and standardized policy language to insurers in all 50 states and the District of Columbia. ISO offers the following regarding how residential sprinklers are reflected in ISO's advisory residential property programs:

PREMIUM DISCOUNTS

The standard ISO Dwelling Fire and Homeowners Programs contain available premium credits for installation of fire sprinkler protection up to a maximum of:

- 13% for full sprinkler protection that includes all areas of a home, including attics, bathrooms, closets, and attached structures;
- 8% for fire sprinkler protection of all areas of a home excluding the attic, bathrooms, closets, and attached structures as long as fire detection equipment is installed in those areas where sprinklers are omitted;

Individual insurer programs may provide different credits.

SPRINKLER "LEAKAGE" COVERAGE

The presence of a residential sprinkler system may raise concern about the risk of accidental water leakage from the system. ISO’s standard Homeowners policy forms provide coverage for "…accidental discharge or overflow of water…from within a…fire protective sprinkler system…". This coverage is included in the basic policy. There is no extra charge for this coverage.

Also, coverage is provided for water damage related to the suppression or extinguishment of a covered fire.

Individual insurer programs may provide variations to this coverage.

BUILDING CODE EFFECTIVENESS GRADING SCHEDULE

The ISO Building Code Effectiveness Grading Schedule (BCEGS®) is used to review public building code enforcement agencies and to develop a classification that is provided as advisory information to insurers who may use it for insurance underwriting and rating. If the requirement of the International Residential Code (2009) for automatic fire sprinkler protection of residential dwellings was removed by legislation or local ordinance, BCEGS would not provide full recognition for adoption of code without amendments. A building code enforcement agency which adopted a code with amendments that weaken hazard mitigation issues as defined in the model codes and referenced standards would not receive maximum recognition for code adoption.
Frequently Asked Questions
State Legislative Action to Adopt Residential Sprinkler Requirements

- **Which states have adopted the 2009 IRC?**

To check the status of state adoptions of the *2009 International Residential Code*, you can visit our website: http://www.iccsafe.org/gr/Pages/default.aspx. You should check this site frequently as many states are in the final process of adoption and this site is updated with new information on a quarterly basis.

- **Which states that have adopted the 2009 IRC have retained the sprinkler requirements?**

ICC only tracks the adoption of its model codes. ICC promotes adoption of the latest editions of the model *I-Codes* as approved through our governmental consensus process. However, ICC respects the home-rule rights of states or other jurisdictions to make amendments to the model I-Codes to address their specific needs for safety in the built environment. We do not have the resources or staff to accurately report any and all fifty states’ modifications to the model *I-Codes*.

- **Why was the 2009 IRC approved by the ICC membership with a delayed effective date?**

During many previous code development cycles, proposals were debated to include mandatory requirements for residential fire sprinklers. Issues concerning contractor and inspector training and certification along with other administration concerns to implement these provisions were raised. The delayed effective date was considered the best way to allow building and fire inspectors the opportunity to receive training and certification to effectively administer these new requirements. It also provided a time period for the installation trades to gear-up through training, certification and other jurisdiction administration procedures, such as licensing, to implement the new requirements with minimal impact on construction.

- **Have any states delayed the effective date for the implementation of the 2009 IRC Sprinkler requirements.**

Again, ICC only tracks the adoption and effective dates of its model codes and doesn’t specifically monitor if a state or other jurisdiction enacts delayed effective dates for any *I-Code* requirements.

- **If the sprinkler requirements are eliminated from the 2009 IRC, are other sections of the IRC that are affected?**

There has been no formal analysis by the ICC or any other impartial design professional (individual or organization) that has made an assessment of the overall safety impact that would result from removing the sprinkler requirements from the 2009 IRC.

The 2009 IRC contains many new requirements that embrace new building materials, methods and best practices while maintaining an acceptable level of safety in the built environment. A list of those benefits is available from the ICC. The 2009 IRC was thoroughly vetted through
ICC’s governmental consensus process with all interested organizations and individuals participating and governmental voting members determining the content of the 2009 IRC at the Final Action Hearings. If any state or jurisdiction is considering the removal of those requirements, the deciding agency (Building Code Review Board or State Legislature) should undertake the technical analysis to answer this question utilizing an impartial third-party before rendering a final decision.

- **Why are the I-Codes revised and published every three years?**

The model codes produced by the International Code Council are a coordinated family of codes that are correlated to provide a societal accepted level of safety for both the building occupants and emergency first responders in our built environment. The *I-Codes* are developed through a governmental consensus process that is open and provides several opportunities for participation by all interested stakeholders. Each three-year update to the *I-Codes* considers a balance of new technology, innovative building materials and construction practices while balancing both cost and environmental impacts to the minimum acceptable level of safety in our built environment. This March, ICC released the Public Version of the new International Green Building Code (IgCC), which will integrate Sustainable Building Materials and Technology into the existing family of *I-Codes*.

The ICC website also provides an up to date *Adoptions Tool kit* with valuable information that may be of interest. You can access that Tool Kit at:

http://www.iccsafe.org/gr/Pages/resources.aspx

Other helpful information in the adoptions Tool kit:

- ISO position on removal of the residential sprinkler requirements
- FAQs - Residential Fire Sprinklers and the IRC

Released April 2010 - FM Global study on environmental impacts of residential fires in homes with sprinklers versus homes without fire sprinklers.

Home Builder Benefits to Adopting the 2009 IRC

R305.1 Minimum height (RB30-07/08)
Contains a new provision that allows the ceiling height above bathroom fixtures to be “such that the fixture is capable of being used for its intended purpose.” This will allow builders to construct bathrooms under stairs and other sloped ceiling locations in new and existing homes, thereby not requiring the use of other locations at additional expense and reducing the square footage available for living space. The change was submitted by NAHB.

R311.5.3 Stair treads and risers (E60-07/08)
New language requires that tread and riser dimensions be measured exclusive of carpeting. This will provide for more consistent interpretation and enforcement for builders and reduce disagreements between builders and code officials as to the correct method of measurement on carpeted stairs.

R317.2 Townhouses, exception (RB66-07/08)
Reduces from two hours to one hour the required fire-resistance rating of common walls separating townhouses.
Note: this change was part of the proposal to require sprinklers in all townhouses. Any modification to not require sprinklers should also retain the two-hour requirement.

R319.4 Wood plastic composites (RB102-06/07 & RB55-07/08), and other related sections
This adds criteria to the code for the use of these materials for decks, guards and handrails. Although previously accepted by code officials under alternate material provisions and ES reports, placing criteria for the material in the code should ease approval and acceptance for builders.

R401.3 Drainage, Exception (RB101-07/08)
The section addresses the grading of the ground adjacent to foundation walls in situations where small yard space does not allow for the usual minimum 6:10 slope. Cost savings are difficult to quantify, but the deletion of a provision that was difficult to comply with should ease the approval process for builders. The change was submitted by NAHB.
**R404.1 Concrete and masonry foundation walls (RB149-06/07)**
The lateral support requirements that were new in the 2006 IRC, including Tables R404.1(1), (2) & (3) have been deleted, and the text returns to what was in the 2003 IRC and previous IRC & CABO codes. Table R404.1(2) had anchor bolt spacings as low as every 5 inches. This section of the 2006 IRC is considered onerous by home builders and was commonly modified by adopting jurisdictions. The change was submitted by NAHB and four concrete and masonry associations.

**Table R602.3(1) Fastener Schedule for Structural Members (RB133-07/08)**
The spacing for edge fasteners for attaching gypsum sheathing to supports is increased from 4 inches to 8 inches.

**R602.10 Wall bracing (RB142 through RB166-07/08)**
This extensive section has been completely rewritten by the ICC Ad Hoc Committee on Wall Bracing with the goal of making the section technically correct and easier to understand. The section has been the source of conflict between builders and code officials due to its complexity and misinterpretation. The new section should make plan reviews easier and quicker, and reduce disagreements between builders and code officials as to the correct application of the section.

**R602.10.3 Minimum length of braced panels (RB152-07/08)**
New text provides a simpler alternate method for bracing adjacent to garage doors in braced wall lines. The change was submitted by NAHB.

**R703.7.3.2 Lintels (RB196-07/08)**
The new section provides a more-economical method for spanning large masonry veneer openings such as occur above two-car garage door openings.

**R802.8 Lateral support & R806.1 Ventilation required (RB205-07/08)**
The new language provides simpler prescriptive requirements for openings in blocking that are necessary for venting closed rafter spaces. The change was submitted by NAHB.

**P2903.5 Water hammer (RP15-06/07)**
Water hammer arrestors are no longer required to be installed everywhere quick-closing valves are used.
Residential Fire Sprinklers and the IRC
International Code Council
Frequently Asked Questions

- **What is the fire sprinkler requirement approved in the 2009 International Residential Code?**
  - The 2009 IRC requires an approved fire sprinkler system in all new one- and two-family dwellings and townhouses.

- **When will dwellings and townhouses be required to install fire sprinklers?**
  - An approved fire sprinkler system must be installed in all townhomes constructed after the 2009 IRC is adopted.
  - An approved fire sprinkler system must be installed in all one- and two-family dwellings constructed after the 2009 IRC is adopted, OR January 1, 2011 whichever is later.

- **Because the requirements for fire sprinkler systems will be included in the 2009 IRC, does that mean that it applies to everyone?**
  - No. The 2009 IRC is one of a set of model codes published by the Code Council. The IRC will not be effective locally until it is adopted at state or local level.

- **Will a row of attached townhouses have one fire sprinkler system?**
  - No. Each townhouse will have its own separate fire sprinkler system. Just as the smoke alarms within a single townhouse are not interconnected with other townhouses, the fire sprinkler system will be individual for each townhouse and is not to be interconnected with other townhouses.

- **What if a room is added on to an existing home or townhouse that does not have an approved fire sprinkler system?**
  - An exception in the 2009 IRC states that a fire sprinkler system is not required as the result of additions or alterations to an existing building that does not already have fire sprinklers.

- **Are fire sprinklers installed in the entire dwelling or townhouse?**
  - Fire sprinklers to be installed in all areas of a dwelling unit except:
    - Attics not containing fuel-fired equipment
    - Crawl spaces not containing fuel-fired equipment
    - Closets and pantries of 24 square feet or less, and with the smaller dimension not greater than 3 feet
    - Bathrooms or 55 square feet or less
    - Garages, carports, porches
    - Unheated entry areas such as mud rooms

- **How will decisions be made to determine what pipe size to use and where to place the sprinkler heads?**
  - Either NFPA 13D or IRC Section P2904 (newly added section) can be used for fire sprinkler system design and installation criteria.
  - IRC Section P2904 contains design and installation criteria for a multipurpose fire sprinkler system and contains tables to determine pipe sizes based on water meter size, length of pipe runs, sprinkler flow, piping material and other factors.

- **Is the fire sprinkler system a stand-alone system or is it part of the plumbing system?**
  - The fire sprinkler system can either be separate from the domestic plumbing system, or it can be a multipurpose fire sprinkler system. A multipurpose fire sprinkler system supplies domestic water to both the fire sprinklers and the plumbing fixtures.

- **What type of piping can be used?**
  - Piping allowed for fire sprinkler systems can be metallic (typically copper), or non-metallic (CPVC or PEX).
What is the cost of the fire sprinkler system?
- Cost is affected by several components of the fire sprinkler system. Most significantly by the type of water source (municipal water system or private well), the type of piping (metallic or non-metallic), and pipe design (stand-alone or multipurpose).
- A recent study by the National Fire Protection Research Foundation found prices ranging from $0.38 to $3.66 per square foot of sprinklered space. The bottom of the range consisted of dwellings/townhouses with a multipurpose fire sprinkler system of non-metallic piping and in an area served by a municipal water system. The top of the range consists of dwellings/townhouses with a fire sprinkler system of metallic piping and in an area where a private well and pump were required for water service. The installation of a multipurpose fire sprinkler system resulted in a cost reduction of about 33%.

Can the fire sprinkler system be eliminated if a layer of sheetrock is installed on the bottom-side of lightweight trusses?
- No, the fire sprinkler requirement does not include any alternatives.

Is the sprinkler system an absolute requirement or a trade off choice?
- The installation of the fire sprinkler system is a requirement, not an option. It cannot be traded away for other fire resistance or fire protection requirements. The reduction in separation between townhouses is the only reduction in fire protection allowed.

Are smoke alarms still installed when a fire sprinkler system is installed?
- Yes. Smoke alarms are still required to be installed. Smoke alarms react to smoke, and fire sprinklers react to heat. The smoke alarms are designed to waken and warn the occupants that a fire has occurred. The fire sprinkler system is designed to allow time for the occupants to escape by slowing the spread of fire and inhibiting flashover.
- Flashover is a phase of a structure fire which occurs when enough heat has accumulated within a room for the entire room to suddenly ignite. Recent test have found that homes today can experience flashover within 4-5 minutes after the start of the fire.

Can the fire-rated construction in a townhouse be eliminated now that a fire sprinkler system is installed?
- When fire sprinklers are installed in townhouses the required separation between townhouses can be reduced from a 2-hour rated separation to 1-hour rated separation.

Does the homeowner insurance increase because of possible water damage from the fire sprinklers?
- A 2007 study by the National Association of Home Builders found a reduction of insurance premiums in dwellings and townhomes when fire sprinklers are installed. The reductions were up to 10% and varied depending upon state and location.

There were a record setting number of voting delegates at the Final Action Hearings to vote on this item. How does that impact the validity of the code?
- It is correct that a record number of members attended the Final Action Hearings on Saturday. This is evidence of the importance of the decision. This single requirement will have enormous impact on reducing the annual life loss due to fire in this great nation. US annual fire fatalities hover at about 3,000 and repeatedly 80 - 85% of these fatalities occurring in dwellings and townhouses. The fire sprinkler systems will save lives of the occupants and reduce the tragic annual fire death toll.
- It is appropriate to see a high level of interest in such an important change. It is far better for 1,800 people to be in attendance to hear the testimony and discussions before making a decision, rather than 50 or 60 people making a decision that has such major impact.
A Message from the United States Fire Administrator about Residential Fire Sprinklers

The U.S. Fire Administration has promoted research, development, testing, and demonstrations of residential fire sprinkler systems for more than 30 years. The research regarding residential fire sprinkler systems has indisputably demonstrated the following:

- Residential fire sprinklers can save the lives of building occupants.
- Residential fire sprinklers can save the lives of firefighters called to respond to a home fire.
- Residential fire sprinklers can significantly offset the risk of premature building collapse posed to firefighters by lightweight construction components when they are involved in a fire.
- Residential fire sprinklers can substantially reduce property loss caused by a fire.

The time has come to use this affordable, simple and effective technology to save lives and property where it matters most – in our homes.

In the past year, the National debate about the benefits of residential fire sprinklers passed a major milestone with the adoption of a change to the International Residential Code that will require fire sprinklers in all new construction. This code change survived rigorous scrutiny, during which all interested parties had ample opportunity to comment on the technical merits of the issue. Since then, parties who oppose this life-saving technology have started a vigorous campaign to enact laws at the state level that will prohibit adoption of sprinkler requirements for new homes.

I encourage every member of the fire service to stay abreast of this rapidly changing situation, and to be ready to voice any concerns that you have about proposed legislation to your respective state legislature. The Fire Sprinkler Initiative website has been established to provide a central clearing house for up-to-date information. Log on to the site at http://firesprinklerinitiative.org – stay vigilant and keep the fire service community informed of developments in your area. Only by working together can we save lives.

It is the position of the U.S. Fire Administration that all Americans should be protected from death, injury, and property loss resulting from fire in their residence. All homes should be equipped with both smoke alarms and residential fire sprinklers, and all families should have and practice an emergency escape plan. The U.S. Fire Administration supports all efforts to reduce the tragic toll of fire losses in this nation, including the recently adopted changes to the International Residential Code that require residential fire sprinklers in all new residential construction.

Glenn A. Gaines

Acting Assistant Administrator
U.S. Fire Administration
January 11, 2011

Robert C. Ryan
Deputy Assistant Secretary
Office of Risk Management and Regulatory Affairs
Department of Housing and Urban Development
Robert C. Weaver Federal Building
451 Seventh Street, SW, Room 9105
Washington, DC 20410-0001

Dear Mr. Ryan:

I invite the Department of Housing and Urban Development (HUD) to join us in supporting and encouraging the installation of residential fire sprinklers. HUD’s partnership in maintaining home safety is critical to saving lives in fires and I would like to work together to ensure federal cooperation on home fire safety issues. Specifically, I am proposing HUD revise the Manufactured Home Construction and Safety Standards to require the installation of fire sprinklers in all new homes, to conform to the requirements in the applicable voluntary consensus standards (PL 104-113, and OMB Circular A-119). In addition, I propose HUD revise the appropriate regulations and guidance documents to require fire sprinklers as a condition for obtaining a federal loan guarantee or other federal financial assistance in a newly constructed home.

The Federal Emergency Management Agency’s United States Fire Administration (USFA) has the statutory responsibility set forth in the Federal Fire Prevention and Control Act of 1974 to reduce loss of life and property due to fire through better fire prevention and control. Since that time, through data collection, public education, research and training efforts, USFA has helped make our Nation’s communities and citizens safer by reducing fire related deaths by at least half and significantly reducing the loss of property as a result of fire.

While great progress has been made, much work remains to be done. From 2003 through 2008, there were an estimated 380,000 home fires per year causing an annual average of $6.4 billion in property damage. In addition, there was an annual average of 2,840 civilian deaths and 13,600 civilian injuries related to fires in homes. More Americans die from fires in their homes every year than from hurricanes and other natural disasters.
For more than 30 years, USFA has promoted research, development, testing, and demonstrations of residential fire sprinkler systems. The research regarding these systems has indisputably demonstrated that residential fire sprinklers can save the lives of building occupants and firefighters, significantly offset the risk of premature building collapse, and substantially reduce property loss.

Our research shows current home construction methods and materials are not a large part of the fire problem; the *Manufactured Home Construction and Safety Standards* (24 CFR 3280) promulgated by the Department of Housing and Urban Development (HUD) have made important improvements in home safety. Research shows that the contents in a home have changed markedly in the last 30 years. Home furnishings were once predominately made of natural materials are now mostly fabricated of synthetic materials. These synthetic materials burn faster and hotter than natural materials, leaving occupants considerably less time to escape a fast growing fire. Smoke alarms alone are no longer sufficient to ensure the safety of our citizens in their homes.

The national debate about the benefits of residential fire sprinklers recently passed a major milestone with the adoption of changes to the International Residential Code® that require fire sprinklers in new residential construction. The adoption of this change brings all of the model codes developed by voluntary consensus standards bodies into harmony – fire sprinklers are now required in all new homes. In notable contrast, the *Manufactured Home Construction and Safety Standards* are silent on the issue.

Thank you in advance for assisting in the effort to save the lives of fellow Americans in the place where they expect to be safe – their homes. Residential fire sprinklers are an affordable, simple, and effective technology to save lives and property where it matters most. I would be pleased to have our research team meet with you or your staff to share the results of recent research into home fire safety at your convenience. Please have your staff work with Lawrence McKenna at (301) 447-1361 or lawrence.a.mckennajr@fema.gov to begin this important coordination.

Sincerely,

[Signature]

Glenn A. Gaines
Acting Fire Administrator
United States Fire Administration

Cc: Teresa B. Payne, Office of Regulatory Affairs and Manufactured Housing
Building Codes are the technical requirements for design and construction of buildings. In the U.S., State and local governments have jurisdiction over adoption and enforcement of local building codes. Since developing such highly technical documents involves extensive knowledge, skills, and resources, it is practical that the national model codes are adopted by the State and local jurisdictions. The national model building codes such as the International Building Code® (IBC®) and International Residential Code® (IRC®) have all included consensus-based minimum design requirements to resist seismic and other natural hazards. History has proven that communities that adopted and enforced building codes with full seismic provisions can significantly reduce loss of life and property in major earthquakes. FEMA under the National Earthquake Hazard Reduction Program (NEHRP) strongly encourages States and local communities to adopt and enforce the national model building codes with full seismic provisions.

The New Madrid Seismic Zone (NMSZ) stretches over 5000 square miles across seven States (Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee). Today over nine million people reside in this area. Approximately 200 years ago, three great earthquakes struck within a two-month period and caused extensive damage and casualties. Even though earthquakes have not occurred as frequently as in California, the area has long been recognized to be vulnerable if hit again by a great earthquake of similar magnitude. Despite the significant risk, many communities here have not taken sufficient earthquake protection, in particular, adoption and enforcement of building codes in the NMSZ is yet spotty at best.

**Building Codes at State Level**

To date, among the seven States in the NMSZ, four (Arkansas, Indiana, Kentucky, and Tennessee) have statewide building codes as minimum requirements, but three (Illinois, Mississippi, Missouri) do not and they pass the responsibility to the local jurisdictions to adopt the codes themselves under State guidance. While all the statewide building codes have adopted the national model codes, one State also adopted amendments that weakened the model codes. In the States where statewide building codes are mandatory, a local jurisdiction still has to introduce ordinances to adopt and enforce the State building codes for the jurisdiction. The following summarizes the building codes in each of the seven States.

**The State of Arkansas** has adopted the 2006 International Codes, including IBC and IRC, into its State code - the Arkansas Fire Prevention Code. The State code is mandatory and applicable to all buildings. It is required that local codes must be in accordance with the State code, and only more stringent amendments are allowed by local adoption. The State only oversees code enforcement for state capital investments. Local authorities have jurisdiction over private, district, municipal and county constructions.

**The State of Illinois** has no statewide mandatory building code in place. Building code adoption and enforcement is primarily the responsibility of local authority having jurisdiction. The Capital Development Board of the State government oversees design and construction of new buildings for schools, universities, and State-owned facilities. The seismic requirements of the standard for Illinois school constructions are based on 1994 Uniform Building Code.

**The State of Indiana** has statewide building and residential codes based on the 2006 IBC and 2003 IRC. The State requires mandatory enforcement of the codes and only allows more stringent amendments by local adoption. A State agency oversees code enforcement for public, commercial, industrialized buildings and mobile structures. Local jurisdictions are responsible for one- and two-family dwellings.

**The State of Kentucky** has adopted the 2006 IBC and IRC with specific Kentucky amendments. The amendments weakened the model building codes by downgrading the designated seismic design categories to lower levels. The Kentucky Building Code (KBC) is mandatory statewide. Local jurisdictions may not amend the State code. The codes are applicable to all buildings except farm dwellings and those manufactured home constructions following the Federal Housing and Urban Development (HUD) standards.

**The State of Mississippi** does not have statewide building codes. Building code adoption and enforcement is primarily the responsibility of local jurisdictions. Mississippi requires that all State buildings meet the requirements set forth in the 1997 Standard Building Code. In 2006, Bill 1406 created the Mississippi Building Code Council, and required five coastal counties (Hancock, Harrison, Jackson, Pearl River, and Stone) to enforce, on an emergency basis, all of the wind and flood mitigation requirements prescribed by the 2003 IBC and IRC.
The State of Missouri relies on the local jurisdictions to adopt and enforce their own building codes. The State only demands that projects for State-owned facilities must be designed in accordance with the latest edition of the IBC.

The State of Tennessee adopted the 2006 IBC in September 2008 as the statewide building code. The State has recently adopted the 2009 IRC and made it applicable to new residential construction or change of use to residential effective on or after October 1, 2010.

Building Codes at Local Level

Whether a State mandates a statewide building code or allows its local jurisdictions to adopt building codes by themselves, regulation of building design and construction is primarily conducted through authorities of local jurisdiction. Local jurisdictions include cities, towns, townships, boroughs, villages, counties, and parishes. Due to various challenges at the local level, building code adoption and enforcement by the local jurisdictions can be a critical weak link. Those without building departments or lack of qualified staffs are at disadvantage. In order to understand the status of the local building codes, the Building Science Branch of FEMA Federal Insurance and Mitigation Administration (FIMA) has been working with Insurance Service Office, Inc. (ISO) and other partners to track building code adoption and enforcement conditions at the local level. It appears that there is still a large gap between State and local level code adoption. Figure 1 shows the high seismic area of NMSZ by counties according to the 2006 USGS seismic design maps. It is compared to those counties that have adopted the 2000 or later editions of IBC for commercial buildings.

Table 1 and Figure 2 present the local code adoption status in the States located in the NMSZ. The statistics are based on the December 30, 2010 ISO’s Building Code Effectiveness Grading Schedule (BCEGS) data. The data is tracked by code adopted for commercial buildings, residential buildings, and commercial/residential buildings.

Table 1 – Building Code Adoption by Local Jurisdictions (source: BCEGS December 30, 2010 Data)

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Jurisdictions with high or very high seismic risk</th>
<th>Number of Jurisdictions that have adopted building code with seismic-resistant provisions – Commercial</th>
<th>Number of Jurisdictions that have adopted building code with seismic-resistant provisions – Residential</th>
<th>Number of Jurisdictions that have building code with seismic-resistant provisions – Commercial and Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>26</td>
<td>16</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Illinois</td>
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<td>Tennessee</td>
<td>75</td>
<td>37</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>
Approximately 60 percent of high or very high seismic risk jurisdictions in the NMSZ have adopted building codes with full seismic provisions for commercial buildings, 11 percent for residential buildings, and 10 percent for both commercial and residential buildings. As a comparison, Figure 3 shows, for the nation, 83 percent of communities have adopted building codes for commercial buildings, 64 percent for residential buildings, and 43 percent for commercial and residential buildings. The statistics indicates that the NMSZ is lagging behind the nation in adoption of building codes. As people in the area commemorate the bicentennial great New Madrid earthquakes, FEMA and the National Earthquake Hazard Reduction Program call on the local communities to take full-strength building codes for protection against earthquake risk in the area.