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PREFACE

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As a follow-up to the *International Residential Code*, we offer a companion document, the *International Residential Code–Code and Commentary—Volume I*. Volume I covers Chapters 1 through 11 of the 2012 *International Residential Code*. The basic appeal of the Commentary is that it provides, in a small package and at reasonable cost, thorough coverage of many issues likely to be dealt with when using the *International Residential Code* — and then supplements that coverage with historical and technical background. Reference lists, information sources and bibliographies are also included.

Throughout all of this, effort has been made to keep the vast quantity of material accessible and its method of presentation useful. With a comprehensive yet concise summary of each section, the Commentary provides a convenient reference for regulations applicable to the construction of buildings and structures. In the chapters that follow, discussions focus on the full meaning and implications of the code text. Guidelines suggest the most effective method of application and the consequences of not adhering to the code text. Illustrations are provided to aid understanding; they do not necessarily illustrate the only methods of achieving code compliance.

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Part I—Administrative

Chapter 1: Scope And Administration

General Comments

Chapter 1 of the code is largely concerned with maintaining due process of law in enforcing the performance criteria contained in the body of the code. Only through careful observation of the administrative provisions can the building official reasonably hope to demonstrate that equal protection under the law has been provided. While it is generally assumed that the administrative and enforcement section of a code is addressed to the building official, this is not entirely true. The provisions also establish the rights and privileges of the design professional, the contractor and the building owner. The position of the building official is to review the proposed and completed work and to determine whether the residential structure conforms to the code requirements. The design professional, if one is used, is responsible for the design of the structure. The contractor is responsible for constructing the building in strict accordance with the code and any approved construction documents.

During the course of the construction of a building, the building official reviews the activity to make certain that the intent and letter of the law are being met and that the structure will provide adequate protection for the health, safety and welfare of the users. As a public servant, the building official enforces the code in an unbiased, professional and honest manner. Every individual is guaranteed equal enforcement of the code. Furthermore, design professionals, contractors and building owners have the right of due process for any requirement in the code.

Section R101 establishes the title, scope and purpose of the document. Section R102 establishes the applicability of the code. Section R103 establishes the Department of Building Safety. Section R104 establishes the duties and powers of the building official. Section R105 addresses the requirements for permits. Section R106 establishes the requirements for construction documents. Section R107 addresses the topic of temporary structures and uses. Section R108 establishes permit fees, payment of fees, building permit valuations, and related fees and refunds. Section R109 establishes the requirements for inspections. Section R110 establishes the requirements for occupancy as well as the issuance and revocation of occupancy certificates. Section R111 regulates the connection and disconnection of utilities. Section R112 establishes the board of appeals and its authority. Section R113 addresses the topic of violations of the code. Section R114 establishes the authority for the building official to stop work.

Purpose

A construction code is intended to be adopted as a legally enforceable document that will safeguard health, safety, property and public welfare. A code cannot be effective without adequate provisions for its administration and enforcement. The building official charged with the administration and enforcement of construction regulations has a great responsibility, and with this responsibility goes authority. No matter how detailed the code may be, the building official must exercise judgement in determining code compliance. He or she is responsible for assuring that the homes in which the citizens of the community reside are designed and constructed to be reasonably free from hazards associated with the building's use. The code establishes a minimum acceptable level of safety.

PART 1—SCOPE AND APPLICATION

SECTION R101 GENERAL

R101.1 Title. These provisions shall be known as the *Residential Code for One- and Two-family Dwellings* of [NAME OF JURISDICTION], and shall be cited as such and will be referred to herein as "this code."

❖ The code is formally known as the *International Residential Code*® (IRC®) for *One- and Two-family Dwellings*, generally referred to as the *International Residential Code* or IRC for short. Upon adoption by the jurisdiction, it is known as the *Residential Code for One- and Two-family Dwellings* of the adopting jurisdiction, and in the document is often referred to as "the code." It is offered for adoption as a model document of prescriptive provisions to jurisdictions as a stand-alone residential code that establishes minimum regulations for one- and two-family dwellings and townhouses. The forum under which the code is developed encourages consistency of application of its provisions, and it is offered ready for adoption by all communities, large and small, internationally.

R101.2 Scope. The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to

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the construction, *alteration*, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures*.

Exceptions:

1. Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family *dwellings* or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section P2904.
2. Owner-occupied lodging houses with five or fewer guestrooms shall be permitted to be constructed in accordance with the *International Residential Code for One- and Two-family Dwellings* when equipped with a fire sprinkler system in accordance with Section P2904.

❖ The provisions of the code apply to all aspects of construction for detached one- and two-family dwellings; multiple single-family dwellings, defined as townhouses; and all structures accessory to the dwellings and townhouses. This section sets a limitation in its scope of application to include only those townhouses and dwellings that are up to and including three stories above grade. Additionally, the provisions require each two-family dwelling or townhouse to have separate egress systems for each of the dwelling units. Where a dwelling or townhouse exceeds the allowed height in stories, does not provide individual egress for each dwelling unit or does not conform to the prescriptive provisions of the code, the structures are then beyond the scope of the code, and the provisions of the code cannot be applied. The building must then meet the provisions of the *International Building Code*® (IBC®) or other legally adopted building code of the jurisdiction. The actual limiting height of the building, measured in feet and as applied to the height of each story, is limited by the governing provisions for each specific material as found in Chapter 6 of the code. The user of the code will discover that, depending upon which material is selected for the wall construction, the result may be buildings of different permitted heights. For instance, where the wall system is of insulating concrete form construction as prescribed in Section R611, the building is limited to two stories above grade and each story is limited to 10 feet (3048 mm) in height. If wood stud wall framing is used pursuant to the requirements of Section R602, the allowable story height and overall building height will greatly exceed those permitted for the insulating concrete form wall construction method. The code does not limit the area of the building.

The provisions address all aspects of constructing, altering, repairing, maintaining, using, occupying, enlarging, locating, removing or demolishing any one-family dwelling, two-family dwelling, townhouse or accessory structure. The code regulates any and all activities that modify the buildings, as well as any structures that are of incidental use to the main buildings and that are also located on the same lot. The code regulates construction, plumbing, mechanical, electrical, equipment, fixture and gas piping installations that are done to the building and its operating systems, as well as to other structures incidental to the main building and on the same lot. Even work that is specifically exempted from permits must comply with the requirements of the code.

Exception 1 addresses live/work units which are designed to comply with Section 419 of the IBC and are equipped with an automatic sprinkler system complying with Section P2904. As stated in Section 419 of the IBC, a live/work unit is a dwelling unit in which a significant portion includes a nonresidential use such as an office, a hair styling shop or barbershop or small store. Section 419 of the IBC states that if the nonresidential portion of the building is an office that comprises less than 10 percent of the building area, the unit does not need to be made to comply with the provisions of Section 419 of the IBC for live/work units. Section 419 of the IBC places limitations on live/work units, including limitations on the nonresidential occupancies that can be included in a live/work unit and addresses specific issues regarding means of egress, accessibility, ventilation, fire safety and structural requirements.

Exception 2 allows small bed and breakfasts to be constructed according to the IRC. A definition of "Lodging house" is included in Chapter 2 to generally encompass rental lodging within dwelling units, distinct from hotels and boarding houses which are "not occupied as a single-family unit."

R101.3 Intent. The purpose of this code is to establish minimum requirements to safeguard the public safety, health and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

❖ With the adoption and establishment of a set of minimum construction standards, a community can impose reasonable standards for construction that will maintain the livability of the community while reducing factors that contribute to substandard and hazardous conditions that risk public health, safety, welfare or contribute to undue risk to fire fighters and emergency responders. Adoption of a modern construction code, such as this one, increases the level of safety and quality in the built environment, and is a necessary instrument used to reduce substandard conditions or construction by establishing minimum levels of acceptable construction practice. A reduction in blighted and slum conditions benefits the general public welfare and contributes toward maintenance of a consistent base for the property tax assessments that local governments typically use to fund their general budgets. By applying minimum structural, health, sanitation, fire

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safety and life safety criteria that must be met through the prescriptive or performance provisions of the code, a standard is set that ensures the public and individual building occupants they will not be exposed to construction that has gone unchecked or unregulated. The regulation and inspection of plumbing, electrical and mechanical installations also enhances safety for the public's health and welfare. The imposition of construction requirements that are in excess of the minimum standards would, in most cases, be considered unreasonable and would encounter a lack of support, which in turn could undermine the purpose of construction regulations.

SECTION R102
APPLICABILITY

R102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

❖ This section provides guidance to both building officials and other code users on the application of the code when different sections of the code specify different materials, methods of construction or other requirements. The importance of this section should not be understated. It resolves the question of how to handle conflicts between the general and specific provisions found in the code or those instances where different sections specify different requirements. This section provides a necessary hierarchy for the application of code provisions and clarifies code applications that would otherwise leave persistent questions and lead to debate. The code requires that where different sections of the code apply, but contain different requirements, the most restrictive provisions govern. The code also resolves conflicts between the general requirements of any particular issue with any specific requirements of the same issue by indicating that the specific requirements take precedence over the general requirements.

The following example illustrates the principle. Section R311.7 applies to all stairway types within the purview of the code. Section R311.7.5.1 limits the maximum height of risers to $7^3/_4$ inches (196 mm), thus providing a general requirement for stairway riser height. Section R311.7.10.1 limits risers within a spiral stairway to a maximum height of $9^1/_2$ inches (241 mm). This provision is specific to spiral stairways. At first it may appear that these two sections have requirements that are in conflict with one another. However, Sections R311.7.5.1 and R311.7.10.1 are subordinate requirements of Section R311.7. In this case, the specific requirements of Section R311.7.10.1 take precedence over the general requirements of Section R311.7.5.1 in those applications specific to spiral stairways.

Another example would be in relating the requirements for foam plastics to the requirements for wall and ceiling finishes. The code might be interpreted to state that foam plastic boards meeting the requirements of Section R316.3, with a maximum flame-spread rating of 75, could be used as the final surface finish for walls and ceilings because Section R302.9 allows a flame spread classification for wall and ceiling finishes with a rating of up to 200. This, however, would be a mistake. The provisions of Section R316.4 require the foam plastic to be covered by a finish material equivalent to a thermal barrier that limits the average temperature rise of the unexposed surface to no less than 250°F (139°C) after 15 minutes of fire exposure in accordance with ASTM E 119 standard time-temperature curve, or to be covered with minimum $^1/_2$-inch (12.7 mm) gypsum wallboard. In this case, the uncovered foam plastic must be covered to meet the requirements of Section R316.4 and have the thermal barrier installed. Additionally, the final surface finish material that is chosen must comply with Section R316.4, and it must also meet the required flame spread rating of 200 or less, as specified in Section R302.9.

To summarize, where several code sections apply to the use of a material or a method of construction, the most restrictive requirements apply.

R102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

❖ Compliance with the requirements of the code does not entail authorization, approval or permission to violate the regulations of other local, state or federal laws. Other laws, ordinances and regulations not administered or enforced by the building official could be in existence and enforced by another authority having jurisdiction over those provisions. Although the requirements may have similar provisions to those of the code, the work must be in conformance to the other regulations.

R102.3 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

❖ There are many instances in the code where a reference is merely a chapter number, section number or, in some cases, a provision not specified by number. In all such situations, these references are to the code and not some other code or publication.

R102.4 Referenced codes and standards. The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2.

Exception: Where enforcement of a code provision would violate the conditions of the *listing* of the *equipment* or *appliance*, the conditions of the *listing* and manufacturer's instructions shall apply.

❖ A referenced code, standard or portion thereof is an enforceable extension of the code as if the content of the standard were included in the body of the code. For example, Section R314.2 references NFPA 72 in its

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Part V—Mechanical

Chapter 12: Mechanical Administration

General Comments

Chapter 12 provides regulations for the administration of the mechanical provisions of the code. Though this may be the smallest chapter in the code, it is very important in that it defines the application of the mechanical provisions to both existing and new construction. It also relates this chapter to the administrative provisions in Chapter 1.

Section M1201 addresses this set of mechanical regulations' relationship with Chapter 1 and the validity of the standards that are referenced. Section M1202 provides the applicability to existing mechanical systems. While the code mainly deals with new systems, this section indicates that some existing situations may fall under the requirements in the chapter.

Purpose

A set of mechanical regulations is intended to be adopted as a legally enforceable document that can safeguard health, safety, property and public welfare. Such regulations cannot be effective without adequate provisions for their administration and enforcement. The official charged with the administration and enforcement of mechanical regulations has a great responsibility, and with this responsibility goes authority. No matter how detailed the mechanical regulations may be, the building official must, to some extent, exercise judgement in determining code compliance. She or he has the responsibility to establish that the homes in which the citizens of the community reside are designed and constructed to be reasonably free from hazards associated with the presence and use of mechanical equipment, appliances and systems.

SECTION M1201 GENERAL

M1201.1 Scope. The provisions of Chapters 12 through 24 shall regulate the design, installation, maintenance, *alteration* and inspection of mechanical systems that are permanently installed and used to control environmental conditions within buildings. These chapters shall also regulate those mechanical systems, system components, *equipment* and *appliances* specifically addressed in this code.

❖ This section lists the chapters in the code that regulate mechanical systems. It indicates that the design, installation, and maintenance of mechanical equipment used to control the environmental conditions within the building are regulated by these chapters. It also states that other mechanical systems specifically addressed within these chapters are so regulated. Other provisions in the code reference the *International Mechanical Code*® (IMC®) and the *International Fuel Gas Code*® (IFGC®). This regulates virtually all mechanical systems and equipment within a dwelling in some form or another.

M1201.2 Application. In addition to the general administration requirements of Chapter 1, the administrative provisions of this chapter shall also apply to the mechanical requirements of Chapters 13 through 24.

❖ This section makes reference to the administrative requirements of Chapter 1 to include those administrative provisions and make them applicable to the mechanical chapters.

SECTION M1202 EXISTING MECHANICAL SYSTEMS

M1202.1 Additions, alterations or repairs. *Additions*, *alterations*, renovations or repairs to a mechanical system shall conform to the requirements for a new mechanical system without requiring the existing mechanical system to comply with all of the requirements of this code. *Additions, alterations* or repairs shall not cause an existing mechanical system to become unsafe, hazardous or overloaded. Minor *additions*, *alterations* or repairs to existing mechanical systems shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous, and is *approved*.

❖ Major alterations or additions to existing mechanical systems must comply with the provisions of the code.