INCLUDES
Residential requirements from NFPA 70, National Electrical Code® 2014
The electrical code designated for use with the I-Codes®

IRC®

2015 INTERNATIONAL Residential Code®

FOR ONE- AND TWO-FAMILY DWELLINGS

2015 INTERNATIONAL CODE®

A Member of the International Code Family®

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INTERNATIONAL
Residential Code®

FOR ONE- AND TWO-FAMILY DWELLINGS

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ICC INTERNATIONAL CODE COUNCIL®

2015 International Residential Code®

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PREFACE

Introduction

Internationally, code officials recognize the need for a modern, up-to-date residential code addressing the design and construction of one- and two-family dwellings and townhouses. The *International Residential Code*®, in this 2015 edition, is designed to meet these needs through model code regulations that safeguard the public health and safety in all communities, large and small.

This comprehensive, stand-alone residential code establishes minimum regulations for one- and two-family dwellings and townhouses using prescriptive provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. This 2015 edition is fully compatible with all of the *International Codes*® (I-Codes®) published by the International Code Council® (ICC)®, including the *International Building Code*®, *International Energy Conservation Code*®, *International Existing Building Code*®, *International Fire Code*®, *International Fuel Gas Code*®, *International Green Construction Code*® *International Mechanical Code*®, ICC *Performance Code*®, *International Plumbing Code*®, *International Private Sewage Disposal Code*®, *International Property Maintenance Code*®, *International Swimming Pool and Spa Code*™, *International Wildland-Urban Interface Code*® and *International Zoning Code*®.

The *International Residential Code* provisions provide many benefits, among which is the model code development process that offers an international forum for residential construction professionals to discuss prescriptive code requirements. This forum provides an excellent arena to debate proposed revisions. This model code also encourages international consistency in the application of provisions.

Development

The first edition of the *International Residential Code* (2000) was the culmination of an effort initiated in 1996 by a development committee appointed by ICC and consisting of representatives from the three statutory members of the International Code Council at the time, including: Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO) and Southern Building Code Congress International (SBCCI), and representatives from the National Association of Home Builders (NAHB). The intent was to draft a stand-alone residential code consistent with and inclusive of the scope of the existing model codes. Technical content of the 1998 *International One- and Two-Family Dwelling Code* and the latest model codes promulgated by BOCA, ICBO, SBCCI and ICC was used as the basis for the development, followed by public hearings in 1998 and 1999 to consider proposed changes. This 2015 edition represents the code as originally issued, with changes reflected in the 2009 through 2012 editions, and further changes developed through the ICC Code Development Process through 2013. Residential electrical provisions are based on the 2014 *National Electrical Code*® (NFPA 70). A new edition such as this is promulgated every three years.

Energy provisions in Chapter 11 are duplicated from the *International Energy Conservation Code*®*—Residential Provisions* applicable to residential buildings which fall under the scope of this code.

Fuel gas provisions have been included through an agreement with the American Gas Association (AGA). Electrical provisions have been included through an agreement with the National Fire Protection Association (NFPA).

This code is founded on principles intended to establish provisions consistent with the scope of a residential code that adequately protects public health, safety and welfare; provisions that do not unnecessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction.

Adoption

The International Code Council maintains a copyright in all of its codes and standards. Maintaining copyright allows ICC to fund its mission through sales of books, in both print and electronic formats. The *International Residential Code* is designed for adoption and use by jurisdictions that recognize and acknowledge the ICC's copyright in the code, and further acknowledge the substantial shared value of the public/private partnership for code development between jurisdictions and the ICC.

The ICC also recognizes the need for jurisdictions to make laws available to the public. All ICC codes and ICC standards, along with the laws of many jurisdictions, are available for free in a non-downloadable form on the ICC's website. Jurisdictions should contact the ICC at adoptions@iccsafe.org to learn how to adopt and distribute laws based on the *International Residential Code* in a manner that provides necessary access, while maintaining the ICC's copyright.

Maintenance

The *International Residential Code* is kept up-to-date through the review of proposed changes submitted by code enforcing officials, industry representatives, design professionals and other interested parties. Proposed changes are carefully considered through an open code development process in which all interested and affected parties may participate.

The contents of this work are subject to change both through the code development cycles and the governmental body that enacts the code into law. For more information regarding the code development process, contact the Codes and Standards Development Department of the International Code Council.

The maintenance process for the fuel gas provisions is based upon the process used to maintain the *International Fuel Gas Code*, in conjunction with the American Gas Association. The maintenance process for the electrical provisions is undertaken by the National Fire Protection Association.

While the development procedure of the *International Residential Code* ensures the highest degree of care, ICC, the founding members of ICC, its members and those participating in the development of this code do not accept any liability resulting from compliance or noncompliance with the provisions because ICC and its founding members do not have the power or authority to police or enforce compliance with the contents of this code. Only the governmental body that enacts the code into law has such authority.

Code Development Committee Responsibilities

In each code development cycle, proposed changes to the code are considered at the Committee Action Hearings by the applicable International Code Development Committee as follows:

[RB] = IRC—Building Code Development Committee

[RE] = Residential Energy Code Development Committee

[RMP] = IRC—Mechanical/Plumbing Code Development Committee

The [RE] committee is also responsible for the IECC—Residential Provisions.

For the development of the 2018 edition of the I-Codes, there will be three groups of code development committees and they will meet in separate years. Note that these are tentative groups.

Group A Codes (Heard in 2015, Code Change Proposals Deadline: January 12, 2015)	**Group B Codes (Heard in 2016, Code Change Proposals Deadline: January 11, 2016)**	**Group C Codes (Heard in 2017, Code Change Proposals Deadline: January 11, 2017)**
International Building Code – Fire Safety (Chapters 7, 8, 9, 14, 26) – Means of Egress (Chapters 10, 11, Appendix E) – General (Chapters 2-6, 12, 27-33, Appendices A, B, C, D, K)	Administrative Provisions (Chapter 1 all codes except the IRC and IECC, administrative updates to currently referenced standards, and designated definitions)	International Green Construction Code
International Fuel Gas Code	International Building Code – Structural (Chapters 15-25, Appendices F, G, H, I, J, L, M)	
International Existing Building Code	International Energy Conservation Code	
International Mechanical Code	International Fire Code	
International Plumbing Code	**International Residential Code** – IRC-Building (Chapters 1, 3-10, Appendices E, F, H, J, K, L, M, O, R, S, T, U)	
International Private Sewage Disposal Code	International Wildland-Urban Interface Code	
International Property Maintenance Code		
International Residential Code – IRC-Mechanical (Chapters 12-24) – IRC-Plumbing (Chapters 25-33, Appendices G, I, N, P)		
International Swimming Pool and Spa Code		
International Zoning Code		

Note: Proposed changes to the ICC *Performance Code* will be heard by the code development committee noted in brackets [ ] in the text of the code.

Code change proposals submitted to Chapters 1 and 3 through 10, Appendices E, F, H, J, K, L, M, O, R, S, T, U and Definitions designated [RB] of the *International Residential Code* are heard by the IRC—Building Committee during the Group B (2016) cycle code development hearing. Proposed changes to all other chapters are heard by the IRC Plumbing and Mechanical Committee during the Group A (2015) code development cycle.

It is very important that anyone submitting code change proposals understand which code development committee is responsible for the section of the code that is the subject of the code change proposal. For further information on the code development committee responsibilities, please visit the ICC web site at www.iccsafe.org/scoping.

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2012 edition. Deletion indicators in the form of an arrow (➡) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.

A single asterisk [*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [**] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code. The following table indicates such relocations in the 2015 edition of the *International Residential Code*.

2015 LOCATION	2012 LOCATION
R302.13	R501.3
R403.1.3.4	R403.1.4.2
R404.1.1	R404.1.3
R502.2.2	R502.1.2
Tables R602.7(1) and (2)	Tables R502.5(1) and (2)
P2902.3.7	P2905.4.7

Italicized Terms

Selected terms set forth in Chapter 2, Definitions, are italicized where they appear in code text. Such terms are not italicized where the definition set forth in Chapter 2 does not impart the intended meaning in the use of the term. The terms selected have definitions that the user should read carefully to better understand the code.

EFFECTIVE USE OF THE INTERNATIONAL RESIDENTIAL CODE

Effective Use of the International Residential Code

The *International Residential Code*® (IRC®) was created to serve as a complete, comprehensive code regulating the construction of single-family houses, two-family houses (duplexes) and buildings consisting of three or more townhouse units. All buildings within the scope of the IRC are limited to three stories above grade plane. For example, a four-story single-family house would fall within the scope of the *International Building Code*® (IBC®), not the IRC. The benefits of developing a separate code to residential construction include the fact that the user need not navigate through a multitude of code provisions that do not apply to residential construction in order to locate that which is applicable. A separate code also allows for residential and nonresidential code provisions to be distinct and tailored to the structures that fall within the appropriate code's scopes.

The IRC contains coverage for all components of a house or townhouse including structural components, fireplaces and chimneys, thermal insulation, mechanical systems, fuel gas systems, plumbing systems and electrical systems.

The IRC is a prescriptive-oriented (specification) code with some examples of performance code language. It has been said that the IRC is the complete cookbook for residential construction. Section R301.1, for example, is written in performance language, but states that the prescriptive requirements of the code will achieve such performance.

It is important to understand that the IRC contains coverage for what is conventional and common in residential construction practice. While the IRC will provide all of the needed coverage for most residential construction, it might not address construction practices and systems that are atypical or rarely encountered in the industry. Sections such as R301.1.3, R301.2.2.1.1, R320.1, M1301.1, G2401.1 and P2601.1 refer to other codes either as an alternative to the provisions of the IRC or where the IRC lacks coverage for a particular type of structure, design, system, appliance or method of construction. In other words, the IRC is meant to be all inclusive for typical residential construction and it relies on other codes only where alternatives are desired or where the code lacks coverage for the uncommon aspect of residential construction. Of course, the IRC constantly evolves to address new technologies and construction practices that were once uncommon, but now common.

The IRC is unique in that much of it, including Chapters 3 through 9 and Chapters 34 through 43, is presented in an ordered format that is consistent with the normal progression of construction, starting with the design phase and continuing through the final trim-out phase. This is consistent with the "cookbook" philosophy of the IRC.

The IRC is divided into eight main parts, specifically, Part I—Administration, Part II—Definitions, Part III—Building Planning and Construction, Part IV—Energy Conservation, Part V—Mechanical, Part VI—Fuel Gas, Part VII—Plumbing and Part VIII—Electrical.

The following provides a brief description of the content of each chapter and appendix of the IRC:

Chapter 1 Scope and Administration. This chapter contains provisions for the application, enforcement and administration of subsequent requirements of the code. In addition to establishing the scope of the code, Chapter 1 identifies which buildings and structures come under its purview. Chapter 1 is largely concerned with maintaining "due process of law" in enforcing the building criteria contained in the body of the code. Only through careful observation of the administrative provisions can the building official reasonably expect to demonstrate that "equal protection under the law" has been provided.

Chapter 2 Definitions. Terms defined in the code are listed alphabetically in Chapter 2. It is important to note that two chapters have their own definitions sections: Chapter 24 for the defined terms that are unique to fuel gas and Chapter 35 containing terms that are applicable to electrical Chapters 34 through 43. In the case where Chapter 2 and another chapter both define the same term differently, the definition found in Chapter 24 and/or 35 is intended to prevail where the term

is used in Chapter 24 and/or 35 and the definition contained in Chapter 2 is intended to prevail where the term is used in all other locations in the code. Except where Chapter 24 or 35 has a definition that will prevail therein, the definitions in Chapter 2 are applicable throughout the code.

Where understanding a term's definition is key to or necessary for understanding a particular code provision, the term is shown in italics where it appears in the code. This is true only for those terms that have a meaning that is unique to the code. In other words, the generally understood meaning of a term or phrase might not be sufficient or consistent with the meaning prescribed by the code; therefore, it is essential that the code-defined meaning be known.

Guidance regarding not only tense, gender and plurality of defined terms, but also terms not defined in this code, is provided.

Chapter 3 Building Planning. Chapter 3 provides guidelines for a minimum level of structural integrity, life safety, fire safety and livability for inhabitants of dwelling units regulated by this code. Chapter 3 is a compilation of the code requirements specific to the building planning sector of the design and construction process. This chapter sets forth code requirements dealing with light, ventilation, sanitation, minimum room size, ceiling height and environmental comfort. Chapter 3 establishes life-safety provisions including limitations on glazing used in hazardous areas, specifications on stairways, use of guards at elevated surfaces, window and fall protection and rules for means of egress. Snow, wind and seismic design live and dead loads and flood-resistant construction, as well as solar energy systems, and swimming pools, spas and hot tubs, are addressed in this chapter.

Chapter 4 Foundations. Chapter 4 provides the requirements for the design and construction of foundation systems for buildings regulated by this code. Provisions for seismic load, flood load and frost protection are contained in this chapter. A foundation system consists of two interdependent components: the foundation structure itself and the supporting soil.

The prescriptive provisions of this chapter provide requirements for constructing footings and walls for foundations of wood, masonry, concrete and precast concrete. In addition to a foundation's ability to support the required design loads, this chapter addresses several other factors that can affect foundation performance. These include controlling surface water and subsurface drainage, requiring soil tests where conditions warrant and evaluating proximity to slopes and minimum depth requirements. The chapter also provides requirements to minimize adverse effects of moisture, decay and pests in basements and crawl spaces.

Chapter 5 Floors. Chapter 5 provides the requirements for the design and construction of floor systems that will be capable of supporting minimum required design loads. This chapter covers four different types: wood floor framing, wood floors on the ground, cold-formed steel floor framing and concrete slabs on the ground. Allowable span tables are provided that greatly simplify the determination of joist, girder and sheathing sizes for raised floor systems of wood framing and cold-formed steel framing. This chapter also contains prescriptive requirements for wood-framed exterior decks and their attachment to the main building.

Chapter 6 Wall Construction. Chapter 6 contains provisions that regulate the design and construction of walls. The wall construction covered in Chapter 6 consists of five different types: wood framed, cold-formed steel framed, masonry, concrete and structural insulated panel (SIP). The primary concern of this chapter is the structural integrity of wall construction and transfer of all imposed loads to the supporting structure. This chapter provides the requirements for the design and construction of wall systems that are capable of supporting the minimum design vertical loads (dead, live and snow loads) and lateral loads (wind or seismic loads). This chapter contains the prescriptive requirements for wall bracing and/or shear walls to resist the imposed lateral loads due to wind and seismic.

Chapter 6 also regulates exterior windows and doors installed in walls. The chapter contains criteria for the performance of exterior windows and doors and includes provisions for testing and labeling, garage doors, wind-borne debris protection and anchorage details.

Chapter 7 Wall Covering. Chapter 7 contains provisions for the design and construction of interior and exterior wall coverings. This chapter establishes the various types of materials, materials standards and methods of application permitted for use as interior coverings, including interior plaster, gypsum board, ceramic tile, wood veneer paneling, hardboard paneling, wood shakes and wood shingles. Chapter 7 also contains requirements for the use of vapor retarders for moisture control in walls.

Exterior wall coverings provide the weather-resistant exterior envelope that protects the building's interior from the elements. Chapter 7 provides the requirements for wind resistance and water-resistive barrier for exterior wall coverings. This chapter prescribes the exterior wall coverings as well as the water-resistive barrier required beneath the exterior materials. Exterior wall coverings regulated by this section include aluminum, stone and masonry veneer, wood, hardboard, particleboard, wood structural panel siding, wood shakes and shingles, exterior plaster, steel, vinyl, fiber cement and exterior insulation finish systems.

Chapter 8 Roof-ceiling Construction. Chapter 8 regulates the design and construction of roof-ceiling systems. This chapter contains two roof-ceiling framing systems: wood framing and cold-formed steel framing. Allowable span tables are provided to simplify the selection of rafter and ceiling joist size for wood roof framing and cold-formed steel framing. Chapter 8 also provides requirements for the application of ceiling finishes, the proper ventilation of concealed spaces in roofs (e.g., enclosed attics and rafter spaces), unvented attic assemblies and attic access.

Chapter 9 Roof Assemblies. Chapter 9 regulates the design and construction of roof assemblies. A roof assembly includes the roof deck, vapor retarder, substrate or thermal barrier, insulation, vapor retarder and roof covering. This chapter provides the requirement for wind resistance of roof coverings.

The types of roof covering materials and installation regulated by Chapter 9 are: asphalt shingles, clay and concrete tile, metal roof shingles, mineral surfaced roll roofing, slate and slate-type shingles, wood shakes and shingles, built-up roofs, metal roof panels, modified bitumen roofing, thermoset and thermoplastic single-ply roofing, sprayed polyurethane foam roofing, liquid applied coatings and photovoltaic shingles. Chapter 9 also provides requirements for roof drainage, flashing, above deck thermal insulation, rooftop-mounted photovoltaic systems and recovering or replacing an existing roof covering.

Chapter 10 Chimneys and Fireplaces. Chapter 10 contains requirements for the safe construction of masonry chimneys and fireplaces and establishes the standards for the use and installation of factory-built chimneys, fireplaces and masonry heaters. Chimneys and fireplaces constructed of masonry rely on prescriptive requirements for the details of their construction; the factory-built type relies on the testing and labeling method of approval. Chapter 10 provides the requirements for seismic reinforcing and anchorage of masonry fireplaces and chimneys.

Chapter 11 [RE] Energy Efficiency. The purpose of Chapter 11 [RE] is to provide minimum design requirements that will promote efficient utilization of energy in buildings. The requirements are directed toward the design of building envelopes with adequate thermal resistance and low air leakage, and toward the design and selection of mechanical, water heating, electrical and illumination systems that promote effective use of depletable energy resources. The provisions of Chapter 11 [RE] are duplicated from the *International Energy Conservation Code—Residential Provisions*, as applicable for buildings which fall under the scope of the IRC.

For ease of use and coordination of provisions, the corresponding IECC—Residential Provisions section number is indicated following the IRC section number [e.g. N1102.1 (R402.1)].

Chapter 12 Mechanical Administration. Chapter 12 establishes the limits of applicability of the code and describes how the code is to be applied and enforced. A mechanical code, like any other code, is intended to be adopted as a legally enforceable document and it cannot be effective without adequate provisions for its administration and enforcement. The provisions of Chapter 12 establish the authority and duties of the code official appointed by the jurisdiction having authority and also establish the rights and privileges of the design professional, contractor and property owner. It also relates this chapter to the administrative provisions in Chapter 1.

Chapter 13 General Mechanical System Requirements. Chapter 13 contains broadly applicable requirements related to appliance listing and labeling, appliance location and installation, appliance and systems access, protection of structural elements and clearances to combustibles, among others.

Chapter 14 Heating and Cooling Equipment and Appliances. Chapter 14 is a collection of requirements for various heating and cooling appliances, dedicated to single topics by section. The common theme is that all of these types of appliances use energy in one form or another, and the improper installation of such appliances would present a hazard to the occupants of the dwellings, due to either the potential for fire or the accidental release of refrigerants. Both situations are undesirable in dwellings that are covered by this code.

Chapter 15 Exhaust Systems. Chapter 15 is a compilation of code requirements related to residential exhaust systems, including kitchens and bathrooms, clothes dryers and range hoods. The code regulates the materials used for constructing and installing such duct systems. Air brought into the building for ventilation, combustion or makeup purposes is protected from contamination by the provisions found in this chapter.

Chapter 16 Duct Systems. Chapter 16 provides requirements for the installation of ducts for supply, return and exhaust air systems. This chapter contains no information on the design of these systems from the standpoint of air movement, but is concerned with the structural integrity of the systems and the overall impact of the systems on the fire-safety performance of the building. This chapter regulates the materials and methods of construction which affect the performance of the entire air distribution system.

Chapter 17 Combustion Air. Complete combustion of solid and liquid fuel is essential for the proper operation of appliances, control of harmful emissions and achieving maximum fuel efficiency. If insufficient quantities of oxygen are supplied, the combustion process will be incomplete, creating dangerous byproducts and wasting energy in the form of unburned fuel (hydrocarbons). The byproducts of incomplete combustion are poisonous, corrosive and combustible, and can cause serious appliance or equipment malfunctions that pose fire or explosion hazards.

The combustion air provisions in this code from previous editions have been deleted from Chapter 17 in favor of a single section that directs the user to NFPA 31 for oil-fired appliance combustion air requirements and the manufacturer's installation instructions for solid fuel-burning appliances. If fuel gas appliances are used, the provisions of Chapter 24 must be followed.

Chapter 18 Chimneys and Vents. Chapter 18 regulates the design, construction, installation, maintenance, repair and approval of chimneys, vents and their connections to fuel-burning appliances. A properly designed chimney or vent system is needed to conduct the flue gases produced by a fuel-burning appliance to the outdoors. The provisions of this chapter are intended to minimize the hazards associated with high temperatures and potentially toxic and corrosive combustion gases. This chapter addresses factory-built and masonry chimneys, vents and venting systems used to vent oil-fired and solid fuel-burning appliances.

Chapter 19 Special Appliances, Equipment and Systems. Chapter 19 regulates the installation of fuel-burning appliances that are not covered in other chapters, such as ranges and ovens, sauna heaters, fuel cell power plants and hydrogen systems. Because the subjects in this chapter do not contain the volume of text necessary to warrant individual chapters, they have been combined into a single chapter. The only commonality is that the subjects use energy to perform some task or function. The intent is to provide a reasonable level of protection for the occupants of the dwelling.

Chapter 20 Boilers and Water Heaters. Chapter 20 regulates the installation of boilers and water heaters. Its purpose is to protect the occupants of the dwelling from the potential hazards associated with such appliances. A water heater is any appliance that heats potable water and supplies it to the plumbing hot water distribution system. A boiler either heats water or generates steam for space heating and is generally a closed system.

Chapter 21 Hydronic Piping. Hydronic piping includes piping, fittings and valves used in building space conditioning systems. Applications include hot water, chilled water, steam, steam condensate, brines and water/antifreeze mixtures. Chapter 21 regulates installation, alteration and repair of all hydronic piping systems to insure the reliability, serviceability, energy efficiency and safety of such systems.

Chapter 22 Special Piping and Storage Systems. Chapter 22 regulates the design and installation of fuel oil storage and piping systems. The regulations include reference to construction standards for above-ground and underground storage tanks, material standards for piping systems (both above-ground and underground) and extensive requirements for the proper assembly of system piping and components. The purpose of this chapter is to prevent fires, leaks and spills involving fuel oil storage and piping systems, whether inside or outside structures and above or underground.

Chapter 23 Solar Thermal Energy Systems. Chapter 23 contains requirements for the construction, alteration and repair of all systems and components of solar thermal energy systems used for space heating or cooling, and domestic hot water heating or processing. The provisions of this chapter are limited to those necessary to achieve installations that are relatively hazard free.

A solar thermal energy system can be designed to handle 100 percent of the energy load of a building, although this is rarely accomplished. Because solar energy is a low-intensity energy source and dependent on the weather, it is usually necessary to supplement a solar thermal energy system with traditional energy sources.

As our world strives to find alternate means of producing power for the future, the requirements of this chapter will become more and more important over time.

Chapter 24 Fuel Gas. Chapter 24 regulates the design and installation of fuel gas distribution piping and systems, appliances, appliance venting systems and combustion air provisions. The definition of "Fuel gas" includes natural, liquefied petroleum and manufactured gases and mixtures of these gases.

The purpose of this chapter is to establish the minimum acceptable level of safety and to protect life and property from the potential dangers associated with the storage, distribution and use of fuel gases and the byproducts of combustion of such fuels. This code also protects the personnel who install, maintain, service and replace the systems and appliances addressed herein.

Chapter 24 is composed entirely of text extracted from the IFGC; therefore, whether using the IFGC or the IRC, the fuel gas provisions will be identical. Note that to avoid the potential for confusion and conflicting definitions, Chapter 24 has its own definition section.

Chapter 25 Plumbing Administration. The requirements of Chapter 25 do not supersede the administrative provisions of Chapter 1. Rather, the administrative guidelines of Chapter 25 pertain to plumbing installations that are best referenced and located within the plumbing chapters. This chapter addresses how to apply the plumbing provisions of this code to specific types or phases of construction. This chapter also outlines the responsibilities of the applicant, installer and inspector with regard to testing plumbing installations.

Chapter 26 General Plumbing Requirements. The content of Chapter 26 is often referred to as "miscellaneous," rather than general plumbing requirements. This is the only chapter of the plumbing chapters of the code whose requirements do not interrelate. If a requirement cannot be located in another plumbing chapter, it should be located in this chapter. Chapter 26 contains safety requirements for the installation of plumbing systems and includes requirements for the identification of pipe, pipe fittings, traps, fixtures, materials and devices used in plumbing systems. If specific provisions do not demand that a requirement be located in another chapter, the requirement is located in this chapter.

Chapter 27 Plumbing Fixtures. Chapter 27 requires fixtures to be of the proper type, approved for the purpose intended and installed properly to promote usability and safe, sanitary conditions. This chapter regulates the quality of fixtures and faucets by requiring those items to comply with nationally recognized standards. Because fixtures must be properly installed so that they are usable by the occupants of the building, this chapter contains the requirements for the installation of fixtures.

Chapter 28 Water Heaters. Chapter 28 regulates the design, approval and installation of water heaters and related safety devices. The intent is to minimize the hazards associated with the installation and operation of water heaters. Although this chapter does not regulate the size of a water heater, it does regulate all other aspects of the water heater installation such as temperature and pressure relief valves, safety drip pans and connections. Where a water heater also supplies water for space heating, this chapter regulates the maximum water temperature supplied to the water distribution system.

Chapter 29 Water Supply and Distribution. This chapter regulates the supply of potable water from both public and individual sources to every fixture and outlet so that it remains potable and uncontaminated by cross connections. Chapter 29 also regulates the design of the water distribution system, which will allow fixtures to function properly. Because it is critical that the potable water supply system remain free of actual or potential sanitary hazards, this chapter has the requirements for providing backflow protection devices.

Chapter 30 Sanitary Drainage. The purpose of Chapter 30 is to regulate the materials, design and installation of sanitary drainage piping systems as well as the connections made to the system. The intent is to design and install sanitary drainage systems that will function reliably, are neither undersized nor oversized and are constructed from materials, fittings and connections whose quality is regulated by this section. This chapter addresses the proper use of fittings for directing the flow into and within the sanitary drain piping system. Materials and provisions necessary for servicing the drainage system are also included in this chapter.

Chapter 31 Vents. Venting protects the trap seal of each trap. The vents are designed to limit differential pressures at each trap to 1 inch of water column (249 Pa). Because waste flow in the drainage system creates pressure fluctuations that can negatively affect traps, the sanitary drainage system must have a properly designed venting system. Chapter 31 covers the requirements for vents and venting. All of the provisions set forth in this chapter are intended to limit the pressure differentials in the drainage system to a maximum of 1 inch of water column (249 Pa) above or below atmospheric pressure (i.e., positive or negative pressures).

Chapter 32 Traps. Traps prevent sewer gas from escaping from the drainage piping into the building. Water seal traps are the simplest and most reliable means of preventing sewer gas from entering the interior environment. This chapter lists prohibited trap types as well as specifies the minimum trap size for each type of fixture.

Chapter 33 Storm Drainage. Rainwater infiltration into the ground adjacent to a building can cause the interior of foundation walls to become wet. The installation of a subsoil drainage system prevents the build-up of rainwater on the exterior of the foundation walls. This chapter provides the specifications for subsoil drain piping. Where the discharge of the subsoil drain system is to a sump, this chapter also provides coverage for sump construction, pumps and discharge piping.

Chapter 34 General Requirements. This chapter contains broadly applicable, general and miscellaneous requirements including scope, listing and labeling, equipment locations and clearances for conductor materials and connections and conductor identification.

Chapter 35 Electrical Definitions. Chapter 35 is the repository of the definitions of terms used in the body of Part VIII of the code. To avoid the potential for confusion and conflicting definitions, Part VIII, Electrical, has its own definition chapter.

Codes are technical documents and every word, term and punctuation mark can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code, which can differ substantially from the ordinarily understood meaning of the term as used outside of the code.

The terms defined in Chapter 35 are deemed to be of prime importance in establishing the meaning and intent of the electrical code text that uses the terms. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined.

Chapter 36 Services. This chapter covers the design, sizing and installation of the building's electrical service equipment and grounding electrode system. It includes an easy-to-use load calculation method and service conductor sizing table. The electrical service is generally the first part of the electrical system to be designed and installed.

Chapter 37 Branch Circuit and Feeder Requirements. Chapter 37 addresses the requirements for designing the power distribution system which consists of feeders and branch circuits emanating from the service equipment. This chapter dictates the ratings of circuits and the allowable loads, the number and types of branch circuits required, the wire sizing for such branch circuits and feeders and the requirements for protection from overcurrent for conductors. A load calculation method specific to feeders is also included. This chapter is used to design the electrical system on the load side of the service.

Chapter 38 Wiring Methods. Chapter 38 specifies the allowable wiring methods, such as cable, conduit and raceway systems, and provides the installation requirements for the wiring methods. This chapter is primarily applicable to the “rough-in” phase of construction.

Chapter 39 Power and Lighting Distribution. This chapter mostly contains installation requirements for the wiring that serves the lighting outlets, receptacle outlets, appliances and switches located throughout the building. The required distribution and spacing of receptacle outlets and lighting outlets is prescribed in this chapter, as well as the requirements for ground-fault and arc-fault circuit interrupter protection.

Chapter 40 Devices and Luminaires. This chapter focuses on the devices, including switches and receptacles, and lighting fixtures that are typically installed during the final phase of construction.

Chapter 41 Appliance Installation. Chapter 41 addresses the installation of appliances including HVAC appliances, water heaters, fixed space-heating equipment, dishwashers, garbage disposals, range hoods and suspended paddle fans.

Chapter 42 Swimming Pools. This chapter covers the electrical installation requirements for swimming pools, storable swimming pools, wading pools, decorative pools, fountains, hot tubs, spas and hydromassage bathtubs. The allowable wiring methods are specified along with the required clearances between electrical system components and pools, spas and tubs. This chapter includes the special grounding requirements related to pools, spas and tubs, and also prescribes the equipotential bonding requirements that are unique to pools, spas and tubs.

Chapter 43 Class 2 Remote-control, Signaling and Power-limited Circuits. This chapter covers the power supplies, wiring methods and installation requirements for the Class 2 circuits found in dwellings. Such circuits include thermostat wiring, alarm systems, security systems, automated control systems and doorbell systems.

Chapter 44 Referenced Standards. The code contains numerous references to standards that are used to regulate materials and methods of construction. Chapter 44 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard. Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the code official, contractor, designer and owner.

Chapter 44 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard. Each agency’s standards are then listed in either alphabetical or numeric order based upon the standard identification. The list also contains the title of the standard; the edition (date) of the standard referenced; any addenda included as part of the ICC adoption; and the section or sections of this code that reference the standard.

Appendix A Sizing and Capacities of Gas Piping. This appendix is informative and not part of the code. It provides design guidance, useful facts and data and multiple examples of how to apply the sizing tables and sizing methodologies of Chapter 24.

Appendix B Sizing of Venting Systems Serving Appliances Equipped with Draft Hoods, Category I Appliances and Appliances Listed for Use with Type B Vents. This appendix is informative and not part of the code. It contains multiple examples of how to apply the vent and chimney tables and methodologies of Chapter 24.

Appendix C Exit Terminals of Mechanical Draft and Direct-vent Venting Systems. This appendix is informative and not part of the code. It consists of a figure and notes that visually depict code requirements from Chapter 24 for vent terminals with respect to the openings found in building exterior walls.

Appendix D Recommended Procedure for Safety Inspection of an Existing Appliance Installation. This appendix is informative and not part of the code. It provides recommended procedures for testing and inspecting an appliance installation to determine if the installation is operating safely and if the appliance is in a safe condition.

Appendix E Manufactured Housing Used as Dwellings. The criteria for the construction of manufactured homes are governed by the National Manufactured Housing Construction and Safety Act. While this act may seem to cover the bulk of the construction of manufactured housing, it does not cover those areas related to the placement of the housing on the property. The provisions of Appendix E are not applicable to the design and construction of manufactured homes. Appendix E provides a complete set of regulations in conjunction with federal law for the installation of manufactured housing. This appendix also contains provisions for existing manufactured home installations.

Appendix F Passive Radon Gas Controls. Radon comes from the natural (radioactive) decay of the element radium in soil, rock and water and finds its way into the air. Appendix F contains requirements to mitigate the transfer of radon gases from the soil into the dwelling. The provisions of this appendix regulate the design and construction of radon-resistant measures intended to reduce the entry of radon gases into the living space of residential buildings.

Appendix G Piping Standards for Various Applications. Appendix G provides standards for various types of plastic piping products. This appendix is informative and is not part of the code.

Appendix H Patio Covers. Appendix H sets forth the regulations and limitations for patio covers. The provisions address those uses permitted in patio cover structures, the minimum design loads to be assigned for structural purposes, and the effect of the patio cover on egress and emergency escape or rescue from sleeping rooms. This appendix also contains the special provisions for aluminum screen enclosures in hurricane-prone regions.

Appendix I Private Sewage Disposal. Appendix I simply provides the opportunity to utilize the International Private Sewage Disposal Code for the design and installation of private sewage disposal in one- and two-family dwellings.

Appendix J Existing Buildings and Structures. Appendix J contains the provisions for the repair, renovation, alteration and reconstruction of existing buildings and structures that are within the scope of this code. To accomplish this objective and to make the rehabilitation process more available, this appendix allows for a controlled departure from full code compliance without compromising minimum life safety, fire safety, structural and environmental features of the rehabilitated existing building or structure.

Appendix K Sound Transmission. Appendix K regulates the sound transmission of wall and floor-ceiling assemblies separating dwelling units and townhouse units. Air-borne sound insulation is required for walls. Air-borne sound insulation and impact sound insulation are required for floor-ceiling assemblies. The provisions in Appendix K set forth a minimum Sound Transmission Class (STC) rating for common walls and floor-ceiling assemblies between dwelling units. In addition, a minimum Impact Insulation Class (IIC) rating is also established to limit structure-borne sound through common floor-ceiling assemblies separating dwelling units.

Appendix L Permit Fees. Appendix L provides guidance to jurisdictions for setting appropriate permit fees. This appendix will aid many jurisdictions to assess permit fees that will assist to fairly and properly administer the code. This appendix can be used for informational purposes only or may be adopted when specifically referenced in the adopting ordinance.

Appendix M Home Day Care–R-3 Occupancy. Appendix M provides means of egress and smoke detection requirements for a Group R-3 Occupancy that is to be used as a home day care for more than five children who receive custodial care for less than 24 hours. This appendix is strictly for guidance and/or adoption by those jurisdictions that have Licensed Home Care Provider laws and statutes that allow more than five children to be cared for in a person's home. When a jurisdiction adopts this appendix, the provisions for day care and child care facilities in the IBC should be considered also.

Appendix N Venting Methods. Because venting of sanitary drainage systems is perhaps the most difficult concept to understand, and Chapter 31 uses only words to describe venting requirements, illustrations can offer greater insight into what the words mean. Appendix N has a number of illustrations for commonly installed sanitary drainage systems in order for the reader to gain a better understanding of this code's venting requirements.

Appendix O Automatic Vehicular Gates. Appendix O provides the requirements for the design and construction of automatic vehicular gates. The provisions are for where automatic gates are installed for use at a vehicular entrance or exit on the lot of a one- or two-family dwelling. The requirements provide protection for individuals from potential entrapment between an automatic gate and a stationary object or surface.

Appendix P Sizing of Water Piping System. Appendix P provides two recognized methods for sizing the water service and water distribution piping for a building. The method under Section AP103 provides friction loss diagrams that require the user to "plot" points and read values from the diagrams in order to perform the required calculations and necessary checks. This method is the most accurate of the two presented in this appendix. The method under Section AP201 is known to be conservative; however, very few calculations are necessary in order to determine a pipe size that satisfies the flow requirements of any application.

Appendix Q ICC International Residential Code Electrical Provisions/National Electrical Code Cross Reference. This appendix provided a cross reference that allowed the code user to trace the code sections in Chapters 34 through 43 back to their source: the *National Electrical Code*. This appendix is no longer provided.

Appendix R Light Straw-Clay Construction. This appendix regulates the use of light straw-clay as a construction material. It is limited in application to nonbearing wall infill systems.

Appendix S Strawbale Construction. This appendix provides prescriptive requirements for the use of strawbale as a construction material. It is limited in application to the walls of one-story structures, except where additional engineering is provided.

Appendix T Recommended Procedure for Worst-Case Testing of Atmospheric Venting Systems under N1102.4 or N1105 Conditions $\leq$ 5ACH$_{50}$. This appendix is an informative appendix that is provided for testing of atmospheric venting conditions in a house when the leak tightness is less than five air changes per hour at 50 Pascals. The air leakage limitations in the energy provisions of Chapter 11 could have a direct impact on the building pressure boundary affecting the safe operation of combustion equipment.

Appendix T is intended to provide clear guidance to builders, code officials and home performance contractors for worst-case testing of atmospheric venting systems where air-sealing techniques and air-leakage performance testing requirements of Chapter 11 or the 2015 IECC are employed. Worst-case testing is used by home performance contractors to identify problems that weaken draft and restrict combustion air. Worst-case vent testing uses the home's exhaust fans, air-handling appliances and chimneys to create worst-case depressurization in the combustion appliance zone (CAZ).

Appendix U Solar-Ready Provisions—Detached One- and Two-Family Dwellings, Multiple Single-Family Dwellings (Townhouses). This appendix provides requirements for preparation of a house for future installation of solar equipment for electrical power or heating. Given the growing popularity of solar power and the possible need for the equipment in the future, this appendix, if adopted, would require an area be provided on the building roof that would accommodate solar equipment. In addition, pathways for routing of plumbing and conduit need to be provided.

LEGISLATION

Jurisdictions wishing to adopt the 2015 *International Residential Code* as an enforceable regulation governing one- and two-family dwellings and townhouses should ensure that certain factual information is included in the adopting legislation at the time adoption is being considered by the appropriate governmental body. The following sample adoption legislation addresses several key elements, including the information required for insertion into the code text.

SAMPLE LEGISLATION FOR ADOPTION OF THE *INTERNATIONAL RESIDENTIAL CODE* ORDINANCE NO._____

A**[N] [ORDINANCE/STATUTE/REGULATION]** of the **[JURISDICTION]** adopting the 2015 edition of the *International Residential Code*, regulating and governing the construction, alteration, movement, enlargement, replacement, repair, equipment, location, removal and demolition of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than threes stories in height with separate means of egress in the **[JURISDICTION]**; providing for the issuance of permits and collection of fees therefor; repealing **[ORDINANCE/STATUTE/REGULATION]** No. _____ of the **[JURISDICTION]** and all other ordinances or parts of laws in conflict therewith.

The **[GOVERNING BODY]** of the **[JURISDICTION]** does ordain as follows:

Section 1. That a certain document, three (3) copies of which are on file in the office of the **[TITLE OF JURISDICTION'S KEEPER OF RECORDS]** of **[NAME OF JURISDICTION]**, being marked and designated as the *International Residential Code*, 2015 edition, including Appendix Chapters **[FILL IN THE APPENDIX CHAPTERS BEING ADOPTED]** (see *International Residential Code* Section R102.5, 2015 edition), as published by the International Code Council, be and is hereby adopted as the Residential Code of the **[JURISDICTION]**, in the State of **[STATE NAME]** for regulating and governing the construction, alteration, movement, enlargement, replacement, repair, equipment, location, removal and demolition of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than threes stories in height with separate means of egress as herein provided; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Residential Code on file in the office of the **[JURISDICTION]** are hereby referred to, adopted, and made a part hereof, as if fully set out in this ordinance, with the additions, insertions, deletions and changes, if any, prescribed in Section 2 of this ordinance.

Section 2. The following sections are hereby revised:

Section R101.1. Insert: **[NAME OF JURISDICTION]**

Table R301.2(1) Insert: **[APPROPRIATE DESIGN CRITERIA]**

Section P2603.5.1 Insert: **[NUMBER OF INCHES IN TWO LOCATIONS]**

Section 3. That **[ORDINANCE/STATUTE/REGULATION]** No. _____ of **[JURISDICTION]** entitled **[FILL IN HERE THE COMPLETE TITLE OF THE LEGISLATION OR LAWS IN EFFECT AT THE PRESENT TIME SO THAT THEY WILL BE REPEALED BY DEFINITE MENTION]** and all other ordinances or parts of laws in conflict herewith are hereby repealed.

Section 4. That if any section, subsection, sentence, clause or phrase of this legislation is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The **[GOVERNING BODY]** hereby declares that it would have passed this law, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

Section 5. That nothing in this legislation or in the Residential Code hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in Section 3 of this law; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this legislation.

Section 6. That the **[JURISDICTION'S KEEPER OF RECORDS]** is hereby ordered and directed to cause this legislation to be published. (An additional provision may be required to direct the number of times the legislation is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.)

Section 7. That this law and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect **[TIME PERIOD]** from and after the date of its final passage and adoption.

TABLE OF CONTENTS

Part I—Administrative 1

CHAPTER 1 SCOPE AND ADMINISTRATION 1

PART 1—SCOPE AND APPLICATION 1

Section

R101 General 1

R102 Applicability 1

PART 2—ADMINISTRATION AND ENFORCEMENT 2

Section

R103 Department of Building Safety 2

R104 Duties and Powers of the Building Official 2

R105 Permits 3

R106 Construction Documents 5

R107 Temporary Structures and Uses 6

R108 Fees 7

R109 Inspections 7

R110 Certificate of Occupancy 8

R111 Service Utilities 8

R112 Board of Appeals 8

R113 Violations 9

R114 Stop Work Order 9

Part II—Definitions *11*

CHAPTER 2 DEFINITIONS 11

Section

R201 General 11

R202 Definitions 11

Part III—Building Planning and Construction *27*

CHAPTER 3 BUILDING PLANNING 27

Section

R301 Design Criteria 27

R302 Fire-resistant Construction 50

R303 Light, Ventilation and Heating 55

R304 Minimum Room Areas 57

R305 Ceiling Height 57

R306 Sanitation 57

R307 Toilet, Bath and Shower Spaces 57

R308 Glazing 57

R309 Garages and Carports 61

R310 Emergency Escape and Rescue Openings 62

R311 Means of Egress 63

R312 Guards and Window Fall Protection 66

R313 Automatic Fire Sprinkler Systems 67

R314 Smoke Alarms 67

R315 Carbon Monoxide Alarms 68

R316 Foam Plastic 68

R317 Protection of Wood and Wood-based Products against Decay 70

R318 Protection against Subterranean Termites 72

R319 Site Address 72

R320 Accessibility 73

R321 Elevators and Platform Lifts 73

R322 Flood-resistant Construction 73

R323 Storm Shelters 76

R324 Solar Energy Systems 76

R325 Mezzanines 77

R326 Swimming Pools, Spas and Hot Tubs 77

CHAPTER 4 FOUNDATIONS 79

Section

R401 General 79

R402 Materials 79

R403 Footings 80

R404 Foundation and Retaining Walls 101

R405 Foundation Drainage 119

R406 Foundation Waterproofing and Dampproofing 120

R407 Columns 121

R408 Under-floor Space 121

CHAPTER 5 FLOORS 123

Section

R501 General 123

R502 Wood Floor Framing 123

R503 Floor Sheathing 132

R504 Pressure Preservative-treated-wood Floors (On Ground) 133

R505 Cold-formed Steel Floor Framing 134

R506 Concrete Floors (On Ground). 149
R507 Exterior Decks 149

CHAPTER 6 WALL CONSTRUCTION 157
Section
R601 General 157
R602 Wood Wall Framing 157
R603 Cold-formed Steel Wall Framing 203
R604 Wood Structural Panels 244
R605 Particleboard 244
R606 General Masonry Construction. 244
R607 Glass Unit Masonry 256
R608 Exterior Concrete Wall Construction 258
R609 Exterior Windows and Doors 328
R610 Structural Insulated Panel Wall Construction 331

CHAPTER 7 WALL COVERING 341
Section
R701 General 341
R702 Interior Covering 341
R703 Exterior Covering 345

CHAPTER 8 ROOF-CEILING CONSTRUCTION 365
Section
R801 General 365
R802 Wood Roof Framing. 365
R803 Roof Sheathing 393
R804 Cold-formed Steel Roof Framing. 393
R805 Ceiling Finishes 409
R806 Roof Ventilation 409
R807 Attic Access 411

CHAPTER 9 ROOF ASSEMBLIES 413
Section
R901 General 413
R902 Fire Classification. 413
R903 Weather Protection 413
R904 Materials 414
R905 Requirements for Roof Coverings 414
R906 Roof Insulation 425
R907 Rooftop-mounted Photovoltaic Systems 425
R908 Reroofing 426
R909 Rooftop-mounted Photovoltaic Panel Systems 426

CHAPTER 10 CHIMNEYS AND FIREPLACES. . . *427*
Section
R1001 Masonry Fireplaces 427
R1002 Masonry Heaters 431
R1003 Masonry Chimneys 431
R1004 Factory-built Fireplaces 436
R1005 Factory-built Chimneys 436
R1006 Exterior Air Supply 436

Part IV—Energy Conservation. 437

CHAPTER 11 [RE] ENERGY EFFICIENCY 437
Section
N1101 General. 437
N1102 Building Thermal Envelope 455
N1103 Systems 461
N1104 Electrical Power and Lighting Systems (Mandatory) 463
N1105 Simulated Performance Alternative (Performance). 463
N1106 Energy Rating Index Compliance Alternative 467
N1107 Existing Buildings—General 468
N1108 Additions 469
N1109 Alterations 469
N1110 Repairs 470
N1111 Change of Occupancy or Use. 470

Part V—Mechanical 471

CHAPTER 12 MECHANICAL ADMINISTRATION 471
Section
M1201 General. 471
M1202 Existing Mechanical Systems 471

CHAPTER 13 GENERAL MECHANICAL SYSTEM REQUIREMENTS 473
Section
M1301 General. 473
M1302 Approval. 473
M1303 Labeling of Appliances 473
M1304 Type of Fuel. 473
M1305 Appliance Access. 473
M1306 Clearances from Combustible Construction . . . 474
M1307 Appliance Installation 475
M1308 Mechanical Systems Installation 478

CHAPTER 14 HEATING AND COOLING EQUIPMENT AND APPLIANCES 479

Section

M1401 General 479
M1402 Central Furnaces 479
M1403 Heat Pump Equipment 479
M1404 Refrigeration Cooling Equipment 479
M1405 Baseboard Convectors 479
M1406 Radiant Heating Systems 479
M1407 Duct Heaters 480
M1408 Vented Floor Furnaces 480
M1409 Vented Wall Furnaces 481
M1410 Vented Room Heaters 481
M1411 Heating and Cooling Equipment 481
M1412 Absorption Cooling Equipment 482
M1413 Evaporative Cooling Equipment 482
M1414 Fireplace Stoves 483
M1415 Masonry Heaters 483

CHAPTER 15 EXHAUST SYSTEMS 485

Section

M1501 General 485
M1502 Clothes Dryer Exhaust 485
M1503 Range Hoods 486
M1504 Installation of Microwave Ovens 486
M1505 Overhead Exhaust Hoods 486
M1506 Exhaust Ducts and Exhaust Openings 487
M1507 Mechanical Ventilation 487

CHAPTER 16 DUCT SYSTEMS 489

Section

M1601 Duct Construction 489
M1602 Return Air 492

CHAPTER 17 COMBUSTION AIR 493

Section

M1701 General 493

CHAPTER 18 CHIMNEYS AND VENTS 495

Section

M1801 General 495
M1802 Vent Components 495
M1803 Chimney and Vent Connectors 496
M1804 Vents 497
M1805 Masonry and Factory-built Chimneys 497

CHAPTER 19 SPECIAL APPLIANCES, EQUIPMENT AND SYSTEMS 499

Section

M1901 Ranges and Ovens 499
M1902 Sauna Heaters 499
M1903 Stationary Fuel Cell Power Plants 499
M1904 Gaseous Hydrogen Systems 499

CHAPTER 20 BOILERS AND WATER HEATERS 501

Section

M2001 Boilers 501
M2002 Operating and Safety Controls 501
M2003 Expansion Tanks 501
M2004 Water Heaters Used for Space Heating 502
M2005 Water Heaters 502
M2006 Pool Heaters 502

CHAPTER 21 HYDRONIC PIPING 503

Section

M2101 Hydronic Piping Systems Installation 503
M2102 Baseboard Convectors 503
M2103 Floor Heating Systems 503
M2104 Low Temperature Piping 505
M2105 Ground-Source Heat-Pump System Loop Piping 505

CHAPTER 22 SPECIAL PIPING AND STORAGE SYSTEMS 509

Section

M2201 Oil Tanks 509
M2202 Oil Piping, Fitting and Connections 509
M2203 Installation 509
M2204 Oil Pumps and Valves 510

CHAPTER 23 SOLAR THERMAL ENERGY SYSTEMS 511

Section

M2301 Thermal Solar Energy Systems 511

Part VI—Fuel Gas* *513

CHAPTER 24 FUEL GAS 513

Section

G2401 General 513
G2402 General 513

G2403 General Definitions 513
G2404 General 519
G2405 Structural Safety 520
G2406 Appliance Location 520
G2407 Combustion, Ventilation and Dilution Air 521
G2408 Installation 525
G2409 Clearance Reduction 525
G2410 Electrical 529
G2411 Electrical Bonding 529
G2412 General 529
G2413 Pipe Sizing 530
G2414 Piping Materials 552
G2415 Piping System Installation 553
G2416 Piping Bends and Changes in Direction 556
G2417 Inspection, Testing and Purging 556
G2418 Piping Support 558
G2419 Drips and Sloped Piping 558
G2420 Shutoff Valves 559
G2421 Flow Controls 559
G2422 Appliance Connections 560
G2423 Compressed Natural Gas Motor Vehicle Fuel-dispensing Facilities 561
G2424 Piping Support Intervals 561
G2425 General 561
G2426 Vents 562
G2427 Venting of Appliances 563
G2428 Sizing of Category I Appliance Venting Systems 572
G2429 Direct-vent, Integral Vent, Mechanical Vent and Ventilation/Exhaust Hood Venting 584
G2430 Factory-built Chimneys 584
G2431 General 584
G2432 Decorative Appliances for Installation in Fireplaces 584
G2433 Log Lighters 584
G2434 Vented Gas Fireplaces (Decorative Appliances) 584
G2435 Vented Gas Fireplace Heaters 584
G2436 Vented Wall Furnaces 584
G2437 Floor Furnaces 585
G2438 Clothes Dryers 585
G2439 Clothes Dryer Exhaust 585
G2440 Sauna Heaters 586
G2441 Pool and Spa Heaters 587
G2442 Forced-air Warm-air Furnaces 587
G2443 Conversion Burners 588
G2444 Unit Heaters 588
G2445 Unvented Room Heaters 588
G2446 Vented Room Heaters 588
G2447 Cooking Appliances 588
G2448 Water Heaters 589
G2449 Air-Conditioning Appliances 589
G2450 Illuminating Appliances 589
G2451 Infrared Radiant Heaters 590
G2452 Boilers 590
G2453 Chimney Damper Opening Area 590
G2454 Outdoor Decorative Appliances 590

Part VII—Plumbing 591

CHAPTER 25 PLUMBING ADMINISTRATION 591

Section
P2501 General 591
P2502 Existing Plumbing Systems 591
P2503 Inspection and Tests 591

CHAPTER 26 GENERAL PLUMBING REQUIREMENTS 593

Section
P2601 General 593
P2602 Individual Water Supply and Sewage Disposal 593
P2603 Structural and Piping Protection 593
P2604 Trenching and Backfilling 594
P2605 Support 594
P2606 Penetrations 595
P2607 Waterproofing of Openings 595
P2608 Workmanship 595
P2609 Materials Evaluation and Listing 595

CHAPTER 27 PLUMBING FIXTURES 597

Section
P2701 Fixtures, Faucets and Fixture Fittings 597
P2702 Fixture Accessories 597
P2703 Tail Pieces 597
P2704 Access to Connections 597
P2705 Installation 597
P2706 Waste Receptors 597
P2707 Directional Fittings 599
P2708 Showers 599

P2709 Shower Receptors 599
P2710 Shower Walls 600
P2711 Lavatories 600
P2712 Water Closets 600
P2713 Bathtubs 601
P2714 Sinks 601
P2715 Laundry Tubs 601
P2716 Food-Waste Disposer 601
P2717 Dishwashing Machines 601
P2718 Clothes Washing Machine 601
P2719 Floor Drains 601
P2720 Whirlpool Bathtubs 601
P2721 Bidet Installations 601
P2722 Fixture Fitting 602
P2723 Macerating Toilet Systems 602
P2724 Speciality Temperature Control Devices and Valves 602
P2725 Nonliquid Saturated Treatment Systems 602

CHAPTER 28 WATER HEATERS 603

Section
P2801 General 603
P2802 Solar Water Heating Systems 603
P2803 Water Heaters Used for Space Heating 603
P2804 Relief Valves 604

CHAPTER 29 WATER SUPPLY AND DISTRIBUTION 605

Section
P2901 General 605
P2902 Protection of Potable Water Supply 605
P2903 Water Supply System 608
P2904 Dwelling Unit Fire Sprinkler Systems 613
P2905 Heated Water Distribution Systems 624
P2906 Materials, Joints and Connections 624
P2907 Changes in Direction 627
P2908 Support 627
P2909 Drinking Water Treatment Units 628
P2910 Nonpotable Water Systems 628
P2911 On-site Nonpotable Water Reuse Systems 631
P2912 Nonpotable Rainwater Collection and Distribution Systems 632
P2913 Reclaimed Water Systems 634

CHAPTER 30 SANITARY DRAINAGE 635

Section
P3001 General 635
P3002 Materials 635
P3003 Joints and Connections 637
P3004 Determining Drainage Fixture Units 639
P3005 Drainage System 639
P3006 Sizing of Drain Pipe Offsets 643
P3007 Sumps and Ejectors 643
P3008 Backwater Valves 644
P3009 Subsurface Landscape Irrigation Systems 644
P3010 Replacement of Underground Sewers by Pipe Bursting Methods 646

CHAPTER 31 VENTS 647

Section
P3101 Vent Systems 647
P3102 Vent Stacks and Stack Vents 647
P3103 Vent Terminals 647
P3104 Vent Connections and Grades 647
P3105 Fixture Vents 648
P3106 Individual Vent 648
P3107 Common Vent 648
P3108 Wet Venting 648
P3109 Waste Stack Vent 649
P3110 Circuit Venting 649
P3111 Combination Waste and Vent System 649
P3112 Island Fixture Venting 650
P3113 Vent Pipe Sizing 650
P3114 Air Admittance Valves 650

CHAPTER 32 TRAPS 653

Section
P3201 Fixture Traps 653

CHAPTER 33 STORM DRAINAGE 655

Section
P3301 General 655
P3302 Subsoil Drains 655
P3303 Sumps and Pumping Systems 655

Part VIII—Electrical 657

CHAPTER 34 GENERAL REQUIREMENTS 657

Section

E3401 General 657
E3402 Building Structure Protection 658
E3403 Inspection and Approval 658
E3404 General Equipment Requirements 658
E3405 Equipment Location and Clearances 660
E3406 Electrical Conductors and Connections 660
E3407 Conductor and Terminal Identification 663

CHAPTER 35 ELECTRICAL DEFINITIONS 665

Section

E3501 General 665

CHAPTER 36 SERVICES 671

Section

E3601 General Services 671
E3602 Service Size and Rating 671
E3603 Service, Feeder and Grounding Electrode Conductor Sizing 672
E3604 Overhead Service and Service-entrance Conductor Installation 673
E3605 Service-entrance Conductors 675
E3606 Service Equipment—General 675
E3607 System Grounding 676
E3608 Grounding Electrode System 676
E3609 Bonding 678
E3610 Grounding Electrode Conductors 679
E3611 Grounding Electrode Conductor Connection to the Grounding Electrodes 679

CHAPTER 37 BRANCH CIRCUIT AND FEEDER REQUIREMENTS 681

Section

E3701 General 681
E3702 Branch Circuit Ratings 681
E3703 Required Branch Circuits 682
E3704 Feeder Requirements 683
E3705 Conductor Sizing and Overcurrent Protection 684
E3706 Panelboards 687

CHAPTER 38 WIRING METHODS 689

Section

E3801 General Requirements 689
E3802 Above-ground Installation Requirements 689
E3803 Underground Installation Requirements 691

CHAPTER 39 POWER AND LIGHTING DISTRIBUTION 695

Section

E3901 Receptacle Outlets 695
E3902 Ground-fault and Arc-fault Circuit-interrupter Protection 697
E3903 Lighting Outlets 699
E3904 General Installation Requirements 699
E3905 Boxes, Conduit Bodies and Fittings 711
E3906 Installation of Boxes, Conduit Bodies and Fittings 714
E3907 Cabinets and Panelboards 716
E3908 Grounding 717
E3909 Flexible Cords 721

CHAPTER 40 DEVICES AND LUMINAIRES 723

Section

E4001 Switches 723
E4002 Receptacles 724
E4003 Luminaires 725
E4004 Luminaire Installation 727
E4005 Track Lighting 728

CHAPTER 41 APPLIANCE INSTALLATION 729

Section

E4101 General 729

CHAPTER 42 SWIMMING POOLS 733

Section

E4201 General 733
E4202 Wiring Methods for Pools, Spas, Hot Tubs and Hydromassage Bathtubs 733
E4203 Equipment Location and Clearances 735
E4204 Bonding 737
E4205 Grounding 739
E4206 Equipment Installation 740
E4207 Storable Swimming Pools, Storable Spas, and Storable Hot Tubs 742

E4208 Spas and Hot Tubs 743
E4209 Hydromassage Bathtubs 743

CHAPTER 43 CLASS 2 REMOTE-CONTROL, SIGNALING AND POWER-LIMITED CIRCUITS 745

Section
E4301 General 745
E4302 Power Sources 745
E4303 Wiring Methods 745
E4304 Installation Requirements 746

Part IX—Referenced Standards 747

CHAPTER 44 REFERENCED STANDARDS *747*

APPENDIX A SIZING AND CAPACITIES OF GAS PIPING 773

APPENDIX B SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE WITH TYPE B VENTS 785

APPENDIX C EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS 795

APPENDIX D RECOMMENDED PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION 797

APPENDIX E MANUFACTURED HOUSING USED AS DWELLINGS 803

Section
AE101 Scope 803
AE102 Application to Existing Manufactured Homes and Building Service Equipment 803
AE201 Definitions 804
AE301 Permits 804
AE302 Application for Permit 804
AE303 Permits Issuance 805
AE304 Fees 806
AE305 Inspections 806
AE306 Special Inspections 807
AE307 Utility Service 807
AE401 Occupancy Classification 807
AE402 Location on Property 807
AE501 Design 807
AE502 Foundation Systems 808
AE503 Skirting and Perimeter Enclosures 808
AE504 Structural Additions 808
AE505 Building Service Equipment 809
AE506 Exits 809
AE507 Occupancy, Fire Safety and Energy Conservation Standards 809
AE600 Special Requirements for Foundation Systems 809
AE601 Footings and Foundations 809
AE602 Pier Construction 809
AE603 Height of Piers 809
AE604 Anchorage Installations 810
AE605 Ties, Materials and Installation 810
AE606 Referenced Standards 811

APPENDIX F PASSIVE RADON GAS CONTROLS 813

Section
AF101 Scope 813
AF102 Definitions 813
AF103 Passive Radon-resistant System Requirements 813

APPENDIX G PIPING STANDARDS FOR VARIOUS APPLICATIONS 819

Section
AG101 Plastic Piping Standards 819
AG102 Referenced Standards 822

APPENDIX H PATIO COVERS 823

Section
AH101 General 823
AH102 Definition 823
AH103 Exterior Walls and Openings 823
AH104 Height 823
AH105 Structural Provisions 823
AH106 Special Provisions for Aluminum Screen Enclosures in Hurricane-prone Regions 823

APPENDIX I PRIVATE SEWAGE DISPOSAL . . . 827

Section
AI101 General 827

APPENDIX J EXISTING BUILDINGS AND STRUCTURES 829

Section

AJ101 Purpose and Intent 829
AJ102 Compliance. 829
AJ103 Preliminary Meeting. 830
AJ104 Evaluation of an Existing Building 830
AJ105 Permit 830
AJ201 Definitions 830
AJ301 Repairs 831
AJ401 Renovations 831
AJ501 Alterations 831
AJ601 Reconstruction 832

APPENDIX K SOUND TRANSMISSION 835

Section

AK101 General 835
AK102 Air-borne Sound. 835
AK103 Structural-borne Sound. 835
AK104 Referenced Standards. 835

APPENDIX L PERMIT FEES 837

APPENDIX M HOME DAY CARE—R-3 OCCUPANCY 839

Section

AM101 General 839
AM102 Definition 839
AM103 Means of Egress 839
AM104 Smoke Detection 840

APPENDIX N VENTING METHODS. 841

APPENDIX O AUTOMATIC VEHICULAR GATES 847

Section

AO101 General 847
AO102 Definitions 847
AO103 Automatic Vehicular Gates 847

APPENDIX P SIZING OF WATER PIPING SYSTEM 849

Section

AP101 General 849
AP102 Information Required 849
AP103 Selection of Pipe Size. 849
AP201 Selection of Pipe Size. 866

APPENDIX Q RESERVED. 869

APPENDIX R LIGHT STRAW-CLAY CONSTRUCTION 871

Section

AR101 General. 871
AR102 Definitions 871
AR103 Nonbearing Light Straw-Clay Construction 871
AR104 Thermal Insulation. 873
AR105 Referenced Standard 873

APPENDIX S STRAWBALE CONSTRUCTION. . . 875

Section

AS101 General. 875
AS102 Definitions 875
AS103 Bales. 875
AS104 Finishes 876
AS105 Strawbale Walls—General. 877
AS106 Strawbale Walls—Structural 879
AS107 Fire Resistance. 882
AS108 Thermal Insulation. 883
AS109 Referenced Standards. 883

APPENDIX T RECOMMENDED PROCEDURE FOR WORST-CASE TESTING OF ATMOSPHERIC VENTING SYSTEMS UNDER N1102.4 OR N1105 CONDITIONS ≤ 5ACH$_{50}$. . . . 885

Section

T101 Scope 885
T202 General Definitions 885
T301 Testing Procedure 885

APPENDIX U SOLAR-READY PROVISIONS-DETACHED ONE- AND TWO-FAMILY DWELLINGS, MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES) . . . 887

Section

U101 Scope 887
U102 General Definitions 887
U103 Solar-ready Zone 887

INDEX 889

Part I—Administrative

CHAPTER 1

SCOPE AND ADMINISTRATION

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."

R101.2 Scope. The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to 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* not more than three stories above *grade plane* in height.

Exceptions:

1. Live/work units located in *townhouses* and complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be constructed in accordance with the *International Residential Code for One- and Two-Family Dwellings*. Fire suppression required by Section 419.5 of the *International Building Code* where 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* where equipped with a fire sprinkler system in accordance with Section P2904.

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.

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.

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

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.

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.

R102.4.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

R102.4.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

R102.5 Appendices. Provisions in the appendices shall not apply unless specifically referenced in the adopting ordinance.

R102.6 Partial invalidity. In the event any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

R102.7 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *International Property Mainte-*