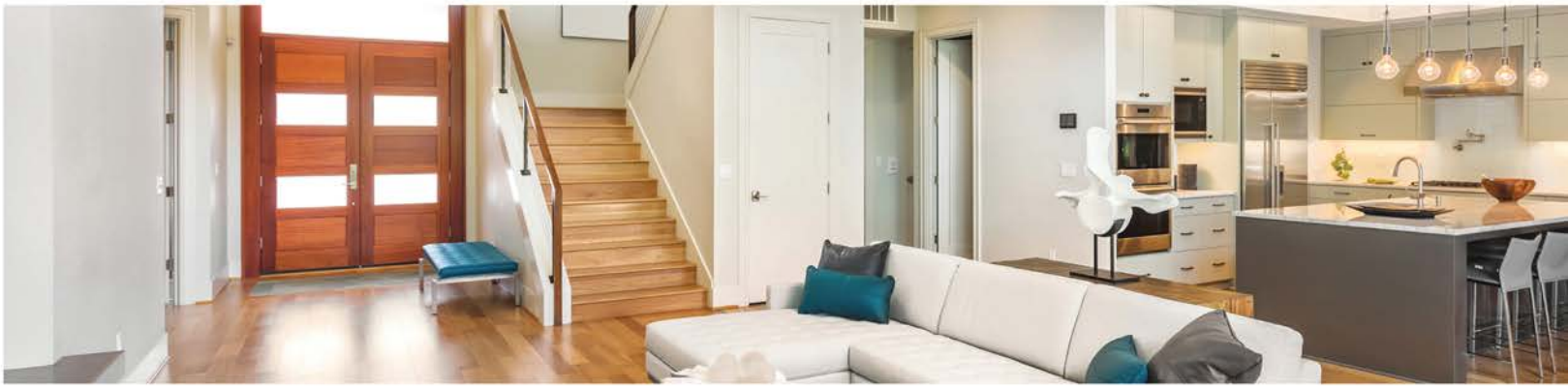
SIGNIFICANT CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE®

2018 EDITION



STEPHEN A. VAN NOTE
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ICC INTERNATIONAL CODE COUNCIL®

SIGNIFICANT CHANGES TO THE

INTERNATIONAL RESIDENTIAL CODE®

2018 EDITION

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***Significant Changes to the International Residential Code*® 2018 Edition**

International Code Council

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Preface

The purpose of *Significant Changes to the International Residential Code®, 2018 Edition*, is to familiarize building officials, fire officials, plans examiners, inspectors, design professionals, contractors, and others in the building construction industry with many of the important changes in the 2018 *International Residential Code®* (IRC®). This publication is designed to assist code users in identifying the specific code changes that have occurred and understanding the reasons behind the changes. It is also a valuable resource for jurisdictions in their code-adoption process.

Only a portion of the code changes to the IRC are discussed in this book. The changes selected were identified for a number of reasons, including their frequency of application, special significance, or change in application. However, the importance of the changes not included is not to be diminished. Further information on all code changes can be found in the Complete Revision History to the 2018 I-Codes, available in 2018 from the International Code Council® (ICC®) online store http://shop.iccsafe.org. This code change resource provides the published documentation for each successful code change contained in the 2018 IRC.

Significant Changes to the International Residential Code, 2018 Edition, is organized into nine parts, each representing a distinct grouping of code topics. It is arranged to follow the general layout of the IRC, including code sections and section number format. The table of contents, in addition to providing guidance in the use of this publication, allows for a quick identification of those significant code changes that occur in the 2018 IRC.

Throughout the book, each change is accompanied by a photograph or an illustration to assist and enhance the reader's understanding of the specific change. A summary and a discussion of the significance of the change are also provided. Each code change is identified by type, be it an addition, modification, clarification, or deletion.

The code change itself is presented in a legislative format similar to the style utilized for code-change proposals. Deleted code language is shown with a strikethrough, and new code text is indicated by underlining.

As a result, the actual 2018 code language is provided, as well as a comparison with the 2015 language, so the user can easily determine changes to the specific code text.

As with any code-change text, *Significant Changes to the International Residential Code, 2018 Edition*, is best used as a companion to the 2018 IRC. Because only a limited discussion of each change is provided, the code itself should always be referenced in order to gain a more comprehensive understanding of the code change and its application.

The commentary and opinions set forth in this text are those of the authors and do not necessarily represent the official position of ICC. In addition, they may not represent the views of any enforcing agency, as such agencies have the sole authority to render interpretations of the IRC. In many cases, the explanatory material is derived from the reasoning expressed by code-change proponents.

Comments concerning this publication are encouraged and may be directed to ICC at significantchanges@iccsafe.org.

About the *International Residential Code®*

Building officials, design professionals, contractors and others involved in the field of residential building construction recognize the need for a modern, up-to-date residential code addressing the design and installation of building systems through both prescriptive and performance requirements. The *International Residential Code®* (IRC), *2018 Edition*, is intended to meet these needs through model code regulations that safeguard the public health and safety in all communities, large and small. The IRC is kept up to date through ICC's open code-development process. The provisions of the 2015 edition, along with those code changes approved through 2016, make up the 2018 edition.

The IRC is one in a family of International Codes® published by ICC. This comprehensive residential code establishes minimum regulations for residential building systems by means of prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The IRC is a comprehensive code containing provisions for building, energy conservation, mechanical, fuel gas, plumbing and electrical systems. The IRC is available for adoption and use by jurisdictions internationally. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference, in accordance with proceedings established by the jurisdiction's laws.

Acknowledgments

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commentary on the plumbing provisions. Gregg Gress, ICC Senior Technical Staff, provided welcome assistance on the mechanical and fuel gas provisions. All contributed to the accuracy and quality of the finished product.

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About the International Code Council®

The International Code Council is a member-focused association. It is dedicated to developing model codes and standards used in the design, build, and compliance process to construct safe, sustainable, affordable,

and resilient structures. Most U.S. communities and many global markets choose the International Codes® (I-Codes®). ICC Evaluation Service (ICC-ES) is the industry leader in performing technical evaluations for code compliance, fostering safe and sustainable design and construction.

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PART 1

Administration

Chapters 1 and 2

- **Chapter 1** Scope and Administration
- **Chapter 2** Definitions

The administration part of the *International Residential Code* (IRC) covers the general scope, purpose, applicability, and other administrative issues related to the regulation of residential buildings by building safety departments. The administrative provisions establish the responsibilities and duties of the various parties involved in residential construction and the applicability of the technical provisions within a legal, regulatory, and code-enforcement arena.

Section R101.2 establishes the criteria for buildings that are regulated by the IRC. Buildings beyond the scope of Section R101.2 are regulated by the *International Building Code* (IBC). The remaining topics in the administration provisions of Chapter 1 include the establishment of the building safety department, duties of the building official, permits, construction documents, and inspections.

The definitions contained within the IRC are intended to reflect the special meaning of such terms within the scope of the code. As terms can often have multiple meanings within their ordinary day-to-day use or within the various disciplines of the construction industry, it is important that their meanings within the context of the IRC be understood. Most definitions used throughout the IRC are found in Chapter 2, but additional definitions specific to the applicable topics are found in the energy provisions of Chapter 11, the fuel gas provisions of Chapter 24, and the electrical provisions of Chapter 35. ■

R101.2

Scope

R104.11

Alternative Materials and Methods of Construction

R105.1, R110.1, R202

Change of Occupancy

R202

Definition of Access

R202

Definition of Crawl Space

R202

Definition of Carbon Monoxide Alarm

R202

Definition of Fenestration

R202

Definition of Solar Energy System

R101.2

Scope

CHANGE TYPE: Modification

CHANGE SUMMARY: All instances where the *International Building Code* (IBC) permits construction under the IRC are now listed in the exception to the scope of the IRC.

2018 CODE: **R101.2 Scope.** The provisions of ~~the *International Residential Code for One- and Two-family Dwellings*~~ this code 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: The following shall be permitted to be constructed in accordance with this code where provided with a residential fire sprinkler system complying with Section P2904:

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~~.

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Bed and breakfast

3. A care facility with five or fewer persons receiving custodial care within a dwelling unit.
4. A care facility with five or fewer persons receiving medical care within a dwelling unit.
5. A care facility for five or fewer persons receiving care that are within a single-family dwelling.

CHANGE SIGNIFICANCE: The IBC applies to the construction, alteration, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure. That is stated in the scope of the IBC. It generally applies to all buildings. However, the exception to the scope says detached one- and two-family dwellings and townhouses not more than three stories above grade plane shall comply with the *International Residential Code* (IRC). This exception to the IBC scope matches the scope of the IRC, bringing the two codes into alignment. There are also provisions where the two codes correlate for a limited number of uses. For example, requirements for live/work units and lodging houses have previously appeared in both codes. The 2018 IRC has updated the exceptions to the scope to include all of those uses recognized in the IBC as permitting construction under the IRC. The three uses new to the IRC are care facilities for five or fewer persons receiving various levels of care.

The 2009 editions of the IBC and IRC introduced provisions embracing the concept of live/work units. These combine a residential dwelling unit with a small business use. A live/work unit is defined in the IBC as a dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant. The code limits the number of employees for the business to five and limits the area of the unit. Live/work units are part of recent trends in community development reminiscent of the early 1900s where neighborhoods included various service businesses. The new trend is often referred to as "Traditional Neighborhood Design." The intent was to reduce requirements for this traditional use and it is not considered a mixed occupancy. This is the one instance where the IBC does not send the code user to the IRC as an approved method of construction. Rather the IRC permits live/work units in townhouses under the exceptions to its scope, but sends the user to the IBC for the details.

Owner-occupied lodging houses with five or fewer guestrooms were added to the exceptions to the scope of the IRC in the 2012 edition. The intent was to allow construction of small bed-and-breakfast operations under the IRC provisions that were perceived as less restrictive than those of the IBC. The IBC, on the other hand, did not state that the IRC could be used for construction of lodging houses. That language first appeared in the 2015 IBC in Section 310.5.2 and permitted owner-occupied lodging houses with five or fewer guestrooms to be constructed under the IRC. Small bed-and-breakfast operations are considered similar to and compatible with one- and two-family dwellings and townhouses regulated by the residential code.

Three additional items have been added to the exception of the IRC scope to correlate with the corresponding language in Chapter 3 of the IBC. This change intends to complete cross-references between the two codes and alerts IRC code users to the corresponding language in the IBC.

R101.2 continues

R101.2 continued Chapter 3 of the IBC describes the various uses of buildings and their assignment into an occupancy classification. The IRC does not classify buildings into occupancy groups, but there are certain classifications within the IBC that are limited in the number of occupants and are considered to have a similar level of hazard as single-family dwellings regulated by the IRC. New to the 2018 IRC, as exceptions to the scope, are uses related to care facilities. In all cases, the number of persons being cared for cannot exceed five. See Table 1-1 for the corresponding sections in the IRC and IBC.

TABLE 1-1 Exceptions to the Scope in the IRC and Corresponding Location in the IBC

First Appeared in IRC	2015 IBC Section	2018 IBC Section	IRC Description	IBC Occupancy Group	IBC Reference to IRC
2009	419	419	Live/work units	R-2	No
2012	310.5.2	310.4.2	Owner-occupied lodging houses with five or fewer guestrooms	R-3	Yes
2018	308.3.4 308.6.4	308.2.4 308.5.4	A care facility with five or fewer persons receiving custodial care within a dwelling unit.	R-3	Yes
2018	308.4.2	308.3.2	A care facility with five or fewer persons receiving medical care within a dwelling unit.	R-3	Yes
2018	310.5.1	310.4.1	A care facility for five or fewer persons receiving care within a single-family dwelling.	R-3	Yes

The list of exceptions to the scope of the IRC has also been reorganized and edited for clarification. The previous reference in the IRC to the "*International Residential Code*" has been replaced with "this code," which is consistent with provisions throughout the ICC family of codes. All five items under the exception are special uses permitted in the IRC that have their basis in the IBC and all specifically require a residential fire sprinkler system complying with IRC Section P2904. That information now appears at the top of the list to apply to all five items, rather than listing the same requirement for each item. Although an automatic fire sprinkler system is required for all new dwellings and townhouses under the IRC, state and local amendments to the code have removed sprinkler requirements in many jurisdictions. All of the corresponding provisions in the IBC require fire sprinkler systems. In addition, the three sections in Chapter 3 of the IBC specifically require an automatic sprinkler system in accordance with NFPA 13D or IRC Section P2904 when permitting construction under the IRC. If the sprinkler reference did not appear in the IRC list, there was concern that code users would not be familiar with the correlating IBC provisions that required sprinklers.

R104.11

Alternative Materials and Methods of Construction

CHANGE TYPE: Modification

CHANGE SUMMARY: The process to gain compliance through the alternative materials and methods provisions now requires an application by the owner or owner's authorized agent and gives authority to the building official to approve based on a prescriptive list of equivalencies.

2018 CODE: **R104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code~~, provided that any such alternative has been approved. An~~ The building official shall have the authority to approve an alternative material, design or method of construction ~~shall be approved~~ upon application of the owner or the owner's authorized agent. ~~where the~~ The building official shall first find~~s~~ that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Compliance with the specific performance-based provisions of the International Codes shall be an alternative to the specific requirements of this code. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved.

CHANGE SIGNIFICANCE: One of the most important provisions in the code, the language for alternative materials, design and methods of construction is explicit in its meaning to not exclude any material, design or method of construction. This provides needed flexibility and recognizes constantly evolving technology and new materials in the world of construction. Unlike many other International Codes (I-Codes), the IRC is primarily a prescriptive code, meaning it usually sets out very specific rules to follow in gaining compliance. It does also recognize performance provisions that require systems or components to function in a certain way to meet the desired level of safety or performance without specifying the methods to achieve that goal. In terms of structural requirements, performance is typically achieved through engineering. Testing of materials and systems is another way to demonstrate an adequate level of performance. The alternative materials and methods provisions are performance-driven and often require some documentation to demonstrate that the method meets the intent of the specific code provisions. Reports issued by the International Code Council's Evaluation Service (ICC-ES) are valuable resources in verifying performance equal to the code requirements. In the absence of ICC-ES evaluation reports and where insufficient data or documentation exists, the building official may require that tests be performed by an approved agency to demonstrate compliance with the code. Also, compliance with the specific performance-based provisions of the referenced I-Codes satisfies the IRC requirements.

With the exception of one added sentence at the end of Section R104.11, very little has changed in this section of the IRC since its inception. The building official has always had an obligation, as instructed by

R104.11 continues

R104.11 continued the code, to approve such alternatives where he or she found that the proposed material or construction met the intent of the IRC and was equivalent to the code provisions. In the 2015 IRC, a new sentence appeared requiring the building official to give the reason in writing for disapproval of a proposed alternative.

In the 2018 code, the process for alternative methods and materials has been formalized somewhat. The code now requires an application by the owner or the owner's authorized agent for consideration by the building official. The wording has changed slightly from the building official "shall approve" to the building official "shall have the authority to approve." Also, the basis for approval is now more specific, picking up a list of criteria from the corresponding section of the IBC for determining equivalency. Previously the IRC required a determination that the alternative was at least the equivalent to that prescribed by the code, and now adds to that "in quality, strength, effectiveness, fire resistance, durability and safety." The changes are minor and the procedures for determining acceptance of alternative materials and methods within the individual jurisdictions will likely remain the same.

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A new house constructed of alternative materials

Andrew McDonough/Shutterstock.com

An alternative method for framing a house

R105.1, R110.1, R202

Change of Occupancy

CHANGE TYPE: Clarification

CHANGE SUMMARY: A definition for "Change of Occupancy" has been added and the requirement for a certificate of occupancy when there is a change of occupancy or use has been clarified.

2018 CODE: **R105.1 Required.** Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move or demolish or a change ~~the~~ of occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the building official and obtain the required permit.

R110.1 Use and occupancy. A building or structure shall not be used or occupied, and a change ~~in the existing use or~~ of occupancy ~~classification~~ or change of use of a building or structure or portion thereof shall not be made, until the building official has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.

Exceptions:

1. Certificates of occupancy are not required for work exempt from permits under Section R105.2.
2. Accessory buildings or structures.

R105.1, R110.1, R202 continues

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Converting a townhouse from a dwelling unit to a live/work unit is considered a change of use

R105.1, R110.1, R202 continued

R202 DEFINITIONS

CHANGE OF OCCUPANCY. A change in the use of a building or a portion of a building that involves a change in the application of the requirements of this code.

CHANGE SIGNIFICANCE: Issuance of a certificate of occupancy indicates that construction work has passed final inspection and the dwelling unit, or in the case of an addition, the portion of the dwelling unit covered by the permit, can be occupied. This is fairly straightforward in the IRC where there is no occupancy group classification or type of construction designation.

From its inception, the IRC has also contained language regarding a change in occupancy or change in use. Such a change required a permit before beginning construction and required a certificate of occupancy before occupancy of the building. Although these are very important tools in the *International Building Code* (IBC), where changes of occupancy classification or a change in use that increases the hazard occur frequently, these provisions have had limited if any application in the IRC. To many code users, change of occupancy or use meant that it was changing from an IRC-regulated building to an IBC-regulated building, or vice versa. For example, it was never the intent that remodeling of an existing single-family dwelling that increased the area of habitable space or the number of bedrooms would be considered a change of occupancy or use; it's still a single-family dwelling. However, even without a change of use designation, the results may be exactly the same. Construction work still requires a permit and, depending on the procedures of the jurisdiction, may require a certificate of occupancy before occupying portions of the dwelling covered by the permit, even though the use remains the same.

The new definition for "Change of Occupancy" and editorial changes to Section R110.1, Use and Occupancy, intend to clarify the application of a change of use or a change of occupancy in the IRC. According to the new definition, it is a change in the application of the requirements of the IRC. The intent is that "change in application" applies only to the special-use buildings in the exception to the scope of the IRC. The five uses listed in the exception to Section R101.2 also occur in the IBC. For an example of a change in application, a one- or two-family dwelling constructed under the IRC and subsequently adapted to become an owner-occupied lodging house (a bed and breakfast) would be considered a change of occupancy. A townhouse dwelling unit that was changing to a live/work unit would also be considered a change of occupancy. The new definition would also apply to the three new uses in the exception to the scope of the IRC related to care facilities with five or fewer persons receiving care (see the changes and discussion under Section R101.2 in this publication). Because all of these uses are considered low hazard and are now allowed to be constructed under the IRC, the change of occupancy will not typically impose any additional requirements, unless the existing building does not have an automatic sprinkler system. All five special uses specifically require sprinkler systems because of a concern that local amendments may have removed the mandatory sprinkler requirements in IRC Section R313. In addition, live/work units must comply with the provisions in IBC Section 419.

R202
Definition of Access

CHANGE TYPE: Clarification

CHANGE SUMMARY: New definitions for "access" and "ready access" apply to equipment and devices that must be reached for service or replacement.

2018 CODE: R202 DEFINITIONS

~~**ACCESSIBLE.** Signifies access that requires the removal of an access panel or similar removable obstruction.~~

ACCESS (TO) That which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel, door or similar obstruction.

~~**ACCESSIBLE, READILY.** Signifies access without the necessity for removing a panel or similar obstruction.~~

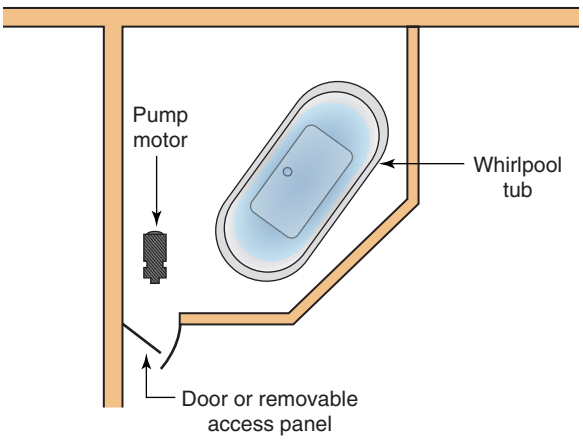
READY ACCESS (TO) That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel, door or similar obstruction.

CLEANOUT. An ~~accessible~~ opening in the drainage system used for the removal of possible obstruction and located to allow for access.

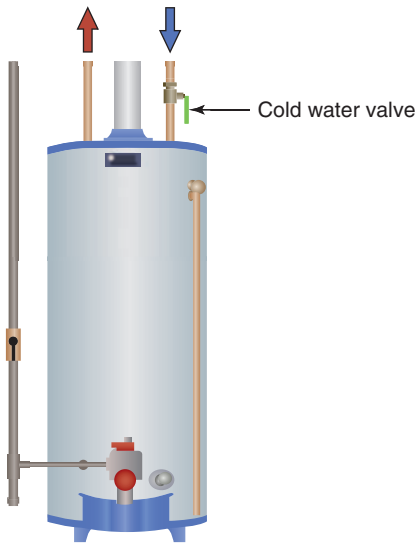
FIXTURE FITTING.

Supply fitting. A fitting that controls the volume or directional flow or both of water and that is either attached to or ~~accessible~~ accessed from a fixture or is used with an open or atmospheric discharge.

R202 continues



Access to whirlpool pump



Ready access to cold water valve of water heater