

Administration and Design

Chapter

1

Introduction

Before diving into the technical code provisions related to deck construction, it's important to understand a little about the code itself. The first chapter of the IRC lays out the administrative rules related to the application of the code. It details the authority of the building official and the responsibility of the builder. Permitting, inspections, plans, and even fees are laid out in this chapter. Being significantly related to operations, procedures, and some legality, it is most often amended by states or local jurisdictions when adopted.

This chapter will provide only select administrative provisions to assist in using the code and understanding everyone's roles and responsibilities. Designers and builders are strongly encouraged to research the administrative rules, procedures, and processes in the jurisdictions they work in. While they are likely to find differences from the IRC, there will be similarities. Building authorities are encouraged to establish policies and procedures to streamline the code



Courtesy of NADRA Member Company, Hickory Dickory Decks

Figure 1-0-1: The only way a deck is built to code is through the work of humans. The designer, builder, plan reviewer, and inspector should “have a seat together,” work together, and be human together. Then they can worry about the actual code provisions.

compliance process for the building community and themselves. The better the code is administered, the better the code compliance in the community, and that is related to people, not code provisions.

The IRC provides two different kinds of provisions: mandatory requirements and prescriptive design. Mandatory requirements come in different packages. The code will mandate certain features be provided, like a landing outside a door. It can also limit the design of a feature, such as how many steps down the landing can be from a door and how large each step must be. It also establishes minimum performance expectations, like a landing supporting a 40 psf live load. No matter how the landing is built or its materials, it must be able to demonstrate these limits. Prescriptive design, the second function of the IRC, provides this demonstration, but with limited variety. It offers a method of construction that includes assurance of code compliance, but this is not to say other methods are not capable of the same.

Part One: The Code

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Subject: Definitions

2021 Code [RB] **ACCESSORY STRUCTURE.** A structure that is accessory to and incidental to that of the *dwelling(s)* and that is located on the same *lot*.

[RB] **APPROVED.** Acceptable to the *building official*.

[RB] **APPROVED AGENCY.** An established and recognized agency that is regularly engaged in conducting tests, furnishing inspection services or furnishing product certification, and has been *approved* by the building official.

[RB] **BUILDING.** Any one- or two-family dwelling or *townhouse*, or portion thereof, used or intended to be used for human habitation, for living, sleeping, cooking or eating purposes, or any combination thereof, or any *accessory structure*. For the definition applicable in Chapter 11, see Section N1101.6.

[RB] **BUILDING OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative. For the definition applicable in Chapter 11, see Section N1101.6.

[RB] **DEAD LOADS.** The weight of the materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, *stairways*, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.

[RB] **DWELLING.** Any building that contains one or two *dwelling units* used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes.

[RB] **DWELLING UNIT.** A single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. For the definition applicable in Chapter 11, see Section N1101.6.

[RB] **JURISDICTION.** The governmental unit that has adopted this code.

[RB] **LIVE LOADS.** Those loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.

[RB] **MANUFACTURER'S INSTALLATION INSTRUCTIONS.** Printed instructions included with equipment as part of the conditions of their *listing* and *labeling*.

[RB] **PERMIT.** An official document or certificate issued by the *building official* that authorizes performance of a specified activity.

[RB] **PLATFORM CONSTRUCTION.** A method of construction by which floor framing bears on load bearing walls that are not continuous through the *story* levels or floor framing.

[RB] **SHALL.** The term, where used in the code, is construed as mandatory.

[RB] **TOWNHOUSE.** A *building* that contains three or more attached *townhouse units*.

Application: The IRC applies to just about every type of construction action imaginable on a private residential property, but only to the extent described or referenced in the provisions. This includes decks attached to a dwelling or townhouse and free-standing decks per the definition of accessory structure. However, not all residential property is regulated by the IRC, such as apartments and hotels. Review of the definitions for dwelling unit and townhouse are critical to applying this code to the correct residences. *The International Building Code®* (IBC®) is the proper code for use on most multifamily residential properties.

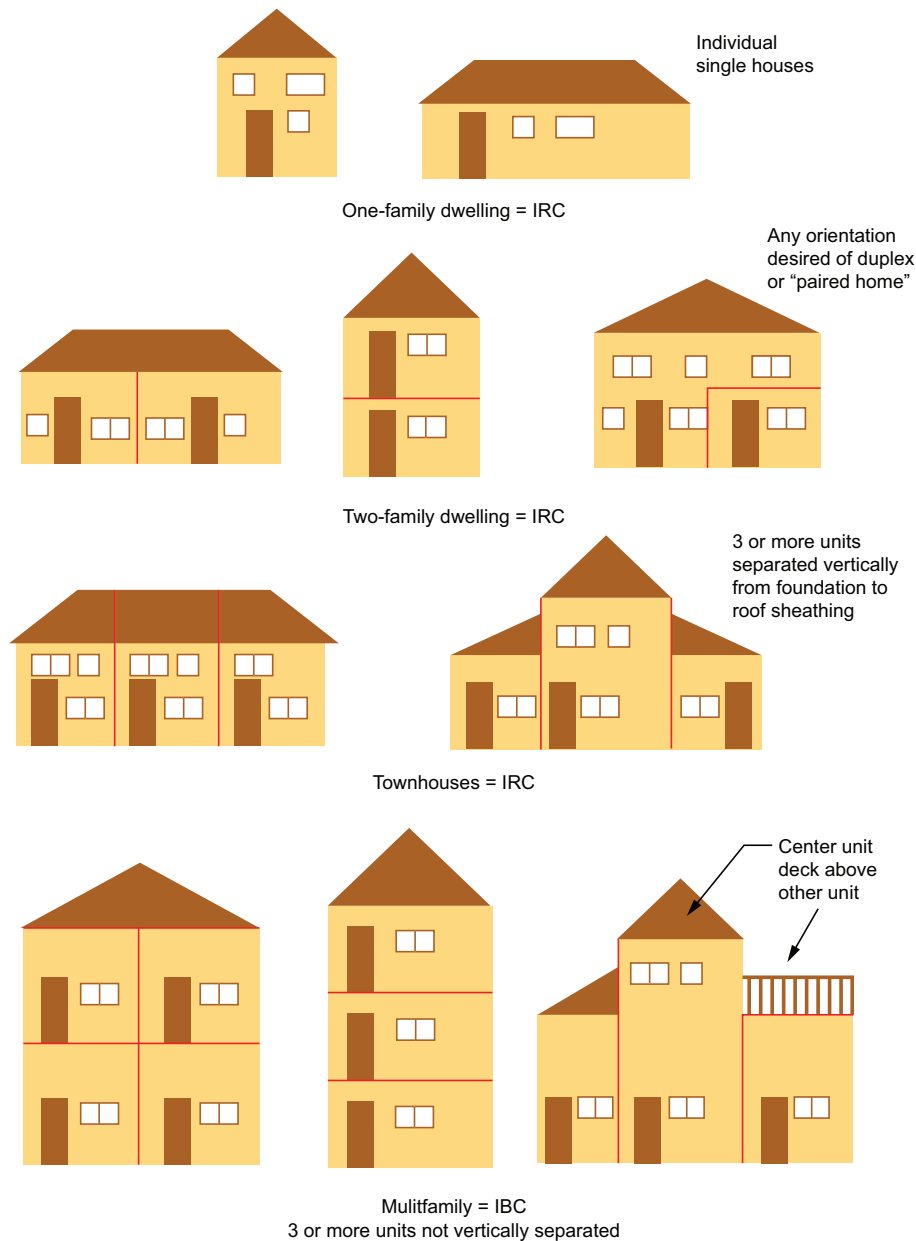


Figure 1-1-1: Before any code provisions can be applied, you've got to know what code to use. The easiest clue is if there are three or more dwelling units in the same structure, they are only under the IRC if they are separated from each other with vertical walls that extend from the foundation to the roof sheathing or above. Under the IRC, a building can only have two dwelling units if any portion of one is above or below another, and that includes roof-top decks.

Part One: The Code

Subject: Application of Code

2021 Code: **R101.2 Scope.** The provisions of 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.

[User Note: For clarity of the subject matter of this book, the remaining text from this section is not provided]

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 Maintenance Code* or the *International Fire Code*, or as is deemed necessary by the *building official* for the general safety and welfare of the occupants and the public.

R102.7.1 Additions, alterations or repairs. *Additions, alterations* or repairs to any structure shall conform to the requirements for a new structure without requiring the existing structure to comply with the requirements of this code, unless otherwise stated. *Additions, alterations, repairs* and relocations shall not cause an existing structure to become less compliant with the provisions of this code than the existing building or structure was prior to the *addition, alteration* or *repair*. An existing building together with its *additions* shall comply with the height limits of this code. Where the *alteration* causes the use or occupancy to be changed to one not within the scope of this code, the provisions of the *International Existing Building Code* shall apply.

Application: When a deck is built on an existing house, only the deck and the extent to which it modifies the house are regulated by the adopted code. This would include the addition of deck area to an existing deck, provided that the existing structure is legally occupied (i.e., permitted as necessary when originally constructed). However, a caveat in this provision allows a building official to require compliance to current code where the existing deck is found detrimental to the general safety or welfare of the occupant. It's not unusual for this determination to be made when deck additions, repairs, or alterations are proposed, due to the insufficiency of previous deck construction practices that have been revealed and corrected in recent code editions. Similarly, repairs may be required when altering an existing deck and there are hazards related to decay or corrosion. Requirements for ledger fasteners and installation of joist hangers and post to beam connectors on existing, legal decks are common when deck additions or repairs occur. Evaluation of decay and replacement of certain members, such as joists, can be required by the building official if deemed necessary for safety.

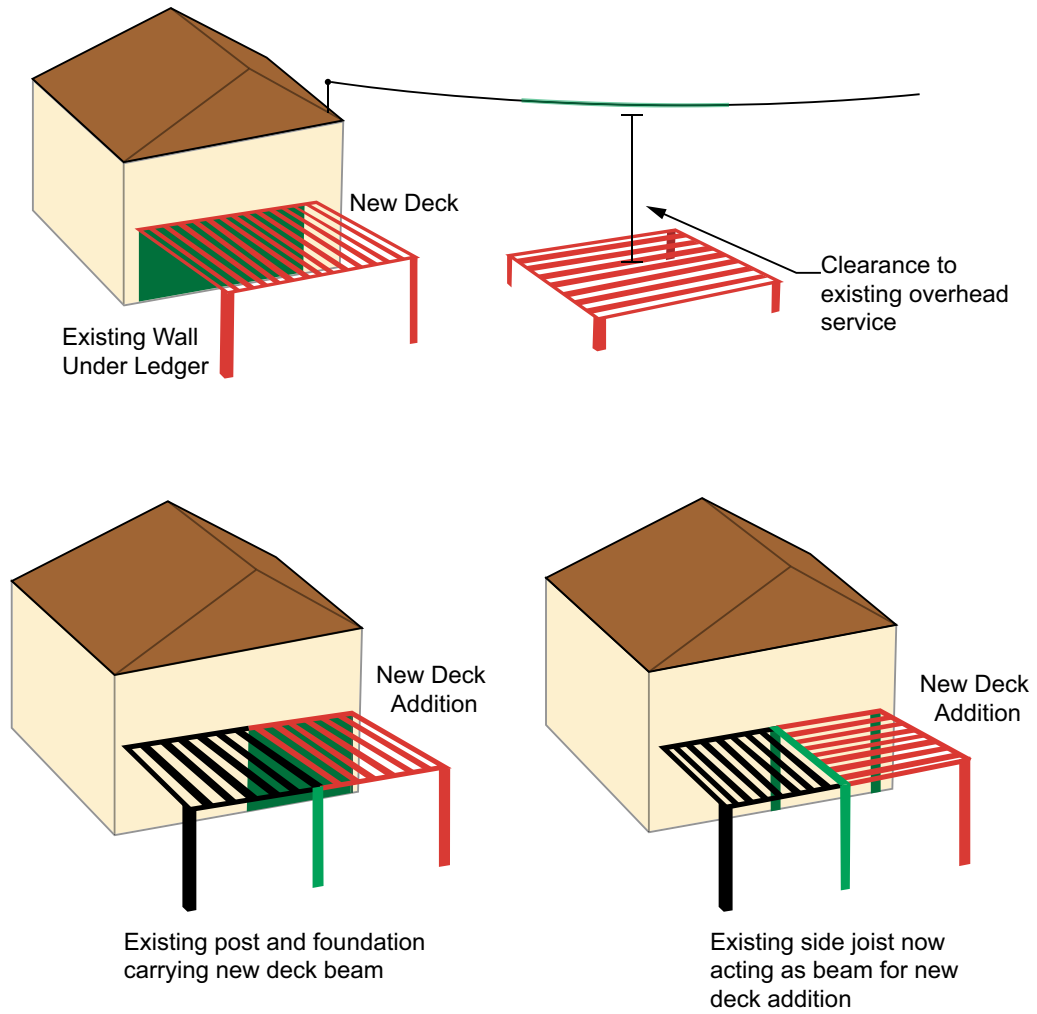


Figure 1-1-2: In these graphics, the black elements are existing, and the red represent the new construction. The green elements are those that were existing but are part of the new load path for the new construction and would be regulated under the currently adopted code for their new role in the new construction.

Part One: The Code

Subject: Intent and Purpose

2021 Code: **R101.3 Purpose.** The purpose of this code is to establish minimum requirements to provide a reasonable level of safety, health and general welfare through affordability, structural strength, means of egress, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

Application: This section is the cornerstone to all interpretations of the IRC. When it is difficult to determine how to apply the provision to a specific situation or a unique design, the performance and functions described in this section should be referenced. The first statement is critical in that provisions are merely the minimum requirements. The code is not a “best practices” document and should not be interpreted as such. The code safeguards the public to the extent of safety, health, and general welfare, the latter of which is relatively ambiguous. The final list in this section is how the safeguards are to be provided. Affordability is a critical balance to safety because it is the greatest barrier to human shelter. If buildings are not affordable, occupancy does not occur, and none of the other safeguarding methods can be utilized.

2021 Modification:

The phrase “to provide a reasonable level of” was added twice to Section 101.3 to help guide professionals in appropriately interpreting code provisions with a judgment based not only on these purposes but also on reason.

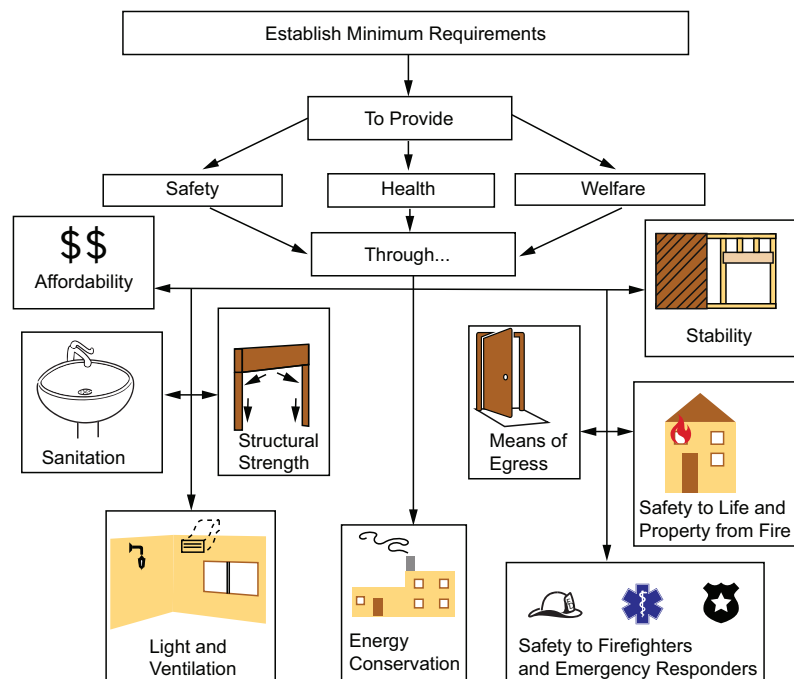


Figure 1-1-3: This flowchart shows the foremost purpose of the code is the establishment of minimum standards, and to do so through the specific means listed in this section and depicted here.

Part One: The Code

Subject: When Permits Are Required

2021 Code: **R105.1 Required.** Any *owner* or owner’s authorized agent who intends to construct, enlarge, alter, *repair*, move, demolish or change the 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*.

R105.2 Work exempt from permit. Exemption from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this *jurisdiction*. *Permits* shall not be required for the following:

1. Other than *storm shelters*, one-story detached *accessory structures*, provided that the floor area does not exceed 200 square feet (18.58 m²).
5. Sidewalks and driveways.
10. Decks not exceeding 200 square feet (18.58 m²) in area, that are not more than 30 inches (762 mm) above *grade* at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.

Application: Though the IRC applies to all manner of construction, some projects are considered minor enough to not require oversight (a permit) by the building authority. A list of specific conditions is provided for when a permit is not required; however, it’s critical to understand this only eliminates the oversight for code compliance, not the requirement for code compliance. The code will always apply. Though item 1 is generally meant for garden or storage sheds, it can equally apply to small gazebos or shade structures over decks or patios. Item 5 makes it clear that permits are not required for sidewalks and driveways, and this similarly applies to other types of “on grade” floor surfaces, such as concrete, paver, or flagstone patios. Item 10 speaks directly to small decks and correlates with the allowable size of other accessory structures, but it also adds additional parameters. Referencing height assures the fall hazard is low enough to not require guards, and not serving the required exit door assures that the primary exiting from the house won’t be affected with lack of oversight. Details about the one required egress door are provided in Chapter Two, Part Two.

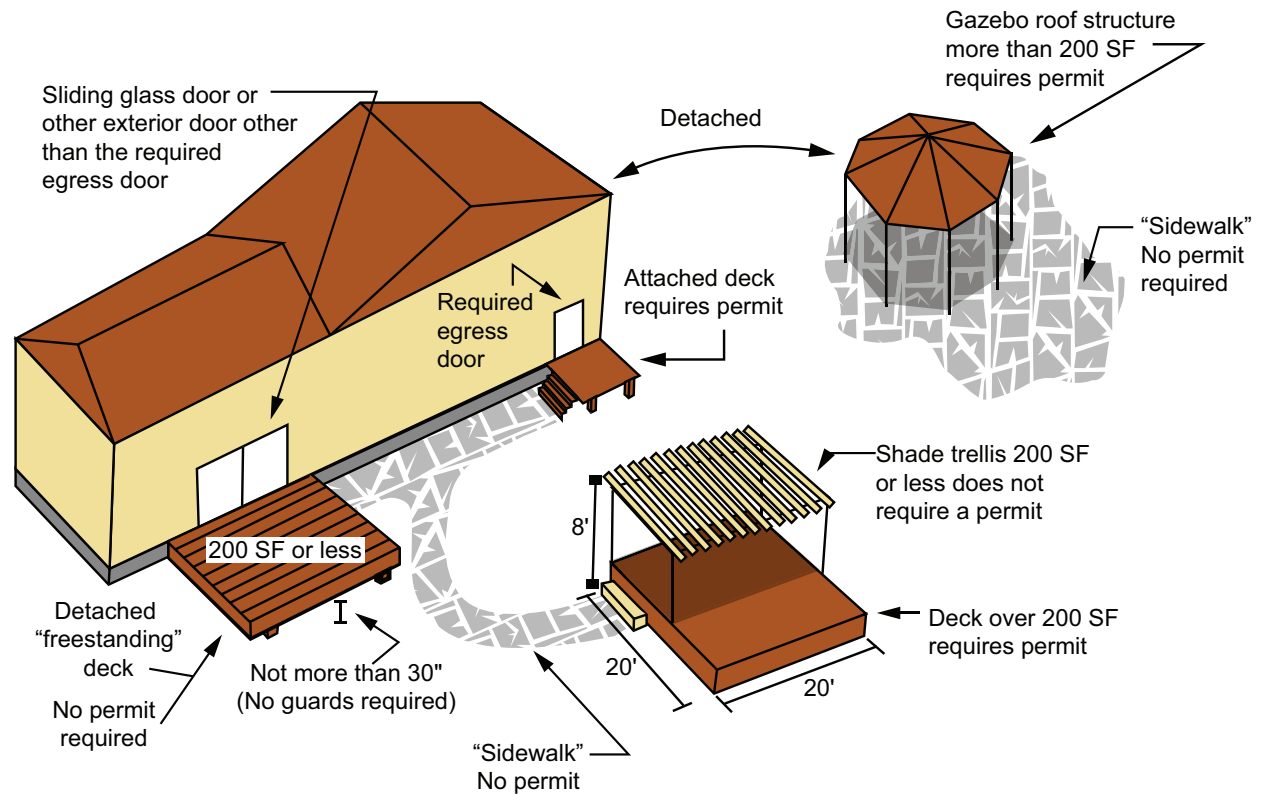


Figure 1-1-4: Though not written as specific in this section, the 30-inch height measurement is intended to address that no guards are required. However, Section R312.1.1 requires the 30-inch measurement to be taken at a point 36 inches horizontally from the edge. It would be appropriate to take the measurement in the same manner to determine if a permit is required.