

2024 International Fire Code® with City of Phoenix Amendments

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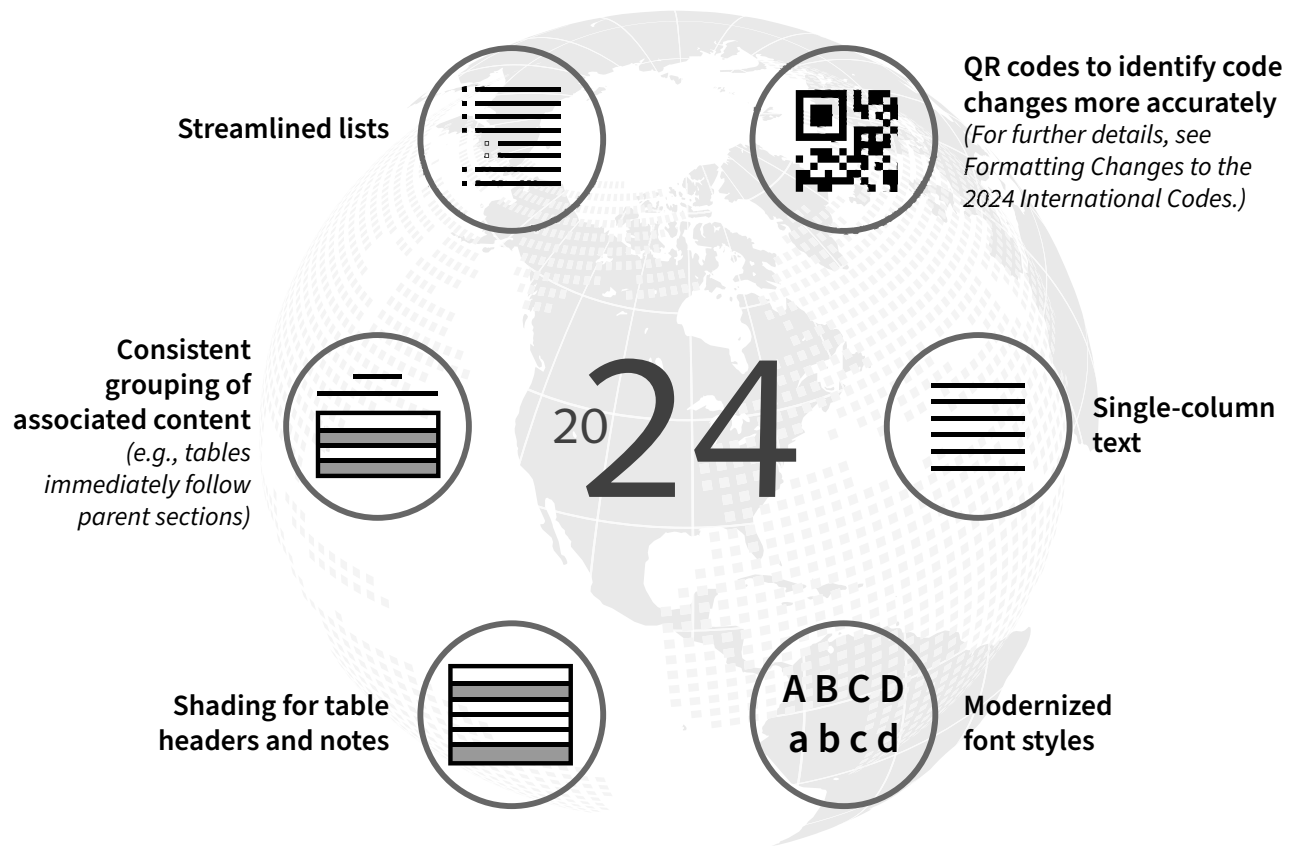
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NEW DESIGN FOR THE 2024 INTERNATIONAL CODES



The 2024 International Codes® (I-Codes®) have undergone substantial formatting changes as part of the digital transformation strategy of the International Code Council® (ICC®) to improve the user experience. The resulting product better aligns the print and PDF versions of the I-Codes with the ICC's Digital Codes® content. The changes, promoting a cleaner, more modern look and enhancing readability and sustainability, include:



More information can be found at iccsafe.org/design-updates.



PREFACE

FORMATTING CHANGES TO THE 2024 INTERNATIONAL CODES

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Margin Markings and Text Colors

For Digital Codes Basic and Premium services, technical code changes from the previous edition of the *International Fire Code*® (IFC®) are shown in blue text. City of Phoenix amendments to the IFC are shown in fuchsia text. Information regarding relocated text or tables is provided at the new and previous locations and linked.

For PDF versions of the code, blue text and a solid vertical line in the margin within the body of the code indicate a technical change from the requirements of the previous edition of the IFC. Fuchsia text and double vertical lines in the margin within the body of the code indicate a City of Phoenix amendment.

For print versions of the code, a solid vertical line in the margin within the body of the code indicates a technical change from the requirements of the previous edition of the IFC. Double vertical lines in the margin within the body of the code indicate City of Phoenix amendments.

For all mediums, a solid arrow (➡) provided in the margin indicates where an entire section, paragraph, exception or table or an item in a list of items or a row in a table has been deleted from the IFC since the previous edition. An open caret (>) is provided in the margin to indicate where such a section, paragraph, exception, table, list or part thereof was deleted by the City of Phoenix. A single asterisk [*] placed in the margin indicates that text or a table previously located at that spot 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.

A diamond (◆) at the end of a section indicates that a City of Phoenix explanatory material document has been created to clarify the application of this code, in accordance with Section 104.1. These documents can be found on the City of Phoenix website.

ABOUT THE I-CODES

The 2024 I-Codes, published by the ICC, are 15 fully compatible titles intended to establish provisions that adequately protect public health, safety and welfare; that do not unnecessarily increase construction costs; that do not restrict the use of new materials, products or methods of construction; and that do not give preferential treatment to particular types or classes of materials, products or methods of construction.

The I-Codes are updated on a 3-year cycle to allow for new construction methods and technologies to be incorporated into the codes. Alternative materials, designs and methods not specifically addressed in the I-Code can be approved by the building official where the proposed materials, designs or methods comply with the intent of the provisions of the code.

The I-Codes are used as the basis of laws and regulations in communities across the US and in other countries. They are also used in a variety of nonregulatory settings, including:

- Voluntary compliance programs.
- The insurance industry.
- Certification and credentialing for building design, construction and safety professionals.
- Certification of building and construction-related products.
- Facilities management.
- “Best practices” benchmarks for designers and builders.
- College, university and professional school textbooks and curricula.
- Reference works related to building design and construction.

Code Development Process

The code development process regularly provides an international forum for building professionals to discuss requirements for building design, construction methods, safety, performance, technological advances and new products. Proposed changes to the I-Codes, submitted by code enforcement officials, industry representatives, design professionals and other interested parties, are deliberated through an open code development process in which all interested and affected parties may participate.

Openness, transparency, balance, due process and consensus are the guiding principles of both the ICC Code Development Process and OMB Circular A-119, which governs the federal government's use of private-sector standards. The ICC process is open to anyone without cost. Remote participation is available through [cdpAccess®](#), the ICC's cloud-based app.

In order to ensure that organizations with a direct and material interest in the codes have a voice in the process, the ICC has developed partnerships with key industry segments that support the ICC's important public safety mission. Some code development committee members were nominated by the following industry partners and approved by the ICC Board:

- American Gas Association (AGA)

- American Institute of Architects (AIA)
- American Society of Plumbing Engineers (ASPE)
- International Association of Fire Chiefs (IAFC)
- National Association of Home Builders (NAHB)
- National Association of State Fire Marshals (NASFM)
- National Council of Structural Engineers Association (NCSEA)
- National Multifamily Housing Council (NMHC)
- Plumbing Heating and Cooling Contractors (PHCC)
- Pool and Hot Tub Alliance (PHTA) formerly The Association of Pool and Spa Professionals (APSP)

Code development committees evaluate and make recommendations regarding proposed changes to the codes. Their recommendations are then subject to public comment and council-wide votes. The ICC's governmental members—public safety officials who have no financial or business interest in the outcome—cast the final votes on proposed changes.

The I-Codes are subject to change through future code development cycles and by any governmental entity that enacts the code into law. For more information regarding the code development process, contact the Codes and Standards Development Department of the ICC at iccsafe.org/products-and-services/i-codes/code-development/.

While the I-Code development procedure is thorough and comprehensive, the ICC, its members and those participating in the development of the codes expressly disclaim any liability resulting from the publication or use of the I-Codes, or from compliance or noncompliance with their provisions. NO WARRANTY OF ANY KIND, IMPLIED, EXPRESSED OR STATUTORY, IS GIVEN WITH RESPECT TO THE I-CODES. The ICC does not have the power or authority to police or enforce compliance with the contents of the I-Codes.

Code Development Committee Responsibilities (Letter Designations in Front of Section Numbers)

In each cycle, proposed changes are considered by the Code Development Committee assigned to a specific code or subject matter. Committee Action Hearings result in recommendations regarding a proposal to the voting membership. Where changes to a code section are not considered by that code's own committee, the code section is preceded by a bracketed letter designation identifying a different committee. Bracketed letter designations for the I-Code committees are:

- [A] = Administrative Code Development Committee
- [BE] = IBC—Egress Code Development Committee
- [BF] = IBC—Fire Safety Code Development Committee
- [BG] = IBC—General Code Development Committee
- [BS] = IBC—Structural Code Development Committee
- [E] = Developed under the ICC's Standard Development Process
- [EB] = International Existing Building Code Development Committee
- [F] = International Fire Code Development Committee
- [FG] = International Fuel Gas Code Development Committee
- [M] = International Mechanical Code Development Committee
- [P] = International Plumbing Code Development Committee
- [SP] = International Swimming Pool and Spa Code Development Committee

For the development of the 2027 edition of the I-Codes, the ICC Board of Directors approved a standing motion from the Board Committee on the Long-Term Code Development Process to revise the code development cycle to incorporate two committee action hearings for each code group. This change expands the current process from two independent 1-year cycles to a single continuous 3-year cycle. There will be two groups of code development committees and they will meet in separate years. The current groups will be reworked. With the energy provisions of the *International Energy Conservation Code*® (IECC®) and Chapter 11 of the *International Residential Code*® (IRC®) now moved to the Code Council's Standards Development Process, the reduced volume of code changes will be distributed between Groups A and B.

Code change proposals submitted for code sections that have a letter designation in front of them will be heard by the respective committee responsible for such code sections. Because different committees hold Committee Action Hearings in different years, proposals for most codes will be heard by committees in both the 2024 (Group A) and the 2025 (Group B) code development cycles. It is very important that anyone submitting code change proposals understands which code development committee is responsible for the section of the code that is the subject of the code change proposal.

Please visit the ICC website at iccsafe.org/products-and-services/i-codes/code-development/current-code-development-cycle for further information on the Code Development Committee responsibilities as it becomes available.

Coordination of the I-Codes

The coordination of technical provisions allows the I-Codes to be used as a complete set of complementary documents. Individual codes can also be used in subsets or as stand-alone documents. Some technical provisions that are relevant to more than one subject area are duplicated in multiple model codes.

Italicized Terms

Words and terms defined in Chapter 2, Definitions, are italicized where they appear in code text and the Chapter 2 definitions apply. Although care has been taken to ensure applicable terms are italicized, there may be instances where a defined term has not been italicized or where a term is italicized but the definition found in Chapter 2 is not applicable. For example, Chapter 2 of the *International Building Code*® (IBC®) contains a definition for “*Listed*” that is applicable to equipment, products and services. The term “listed” is also used in that code to refer to a list of items within the code or within a referenced document. For the latter, the Chapter 2 definition would not be applicable.

Adoption of International Code Council Codes and Standards

The International Code Council maintains a copyright in all of its codes and standards. Maintaining copyright allows the Code Council to fund its mission through sales of books in both print and digital format. The Code Council welcomes incorporation by reference of its codes and standards by jurisdictions that recognize and acknowledge the Code Council’s copyright in the codes and standards, and further acknowledge the substantial shared value of the public/private partnership for code development between jurisdictions and the Code Council. By making its codes and standards available for incorporation by reference, the Code Council does not waive its copyright in its codes and standards.

The Code Council’s codes and standards may only be adopted by incorporation by reference in an ordinance passed by the governing body of the jurisdiction. “Incorporation by reference” means that in the adopting ordinance, the governing body cites only the title, edition, relevant sections or subsections (where applicable), and publishing information of the model code or standard, and the actual text of the model code or standard is not included in the ordinance (see graphic, “Adoption of International Code Council Codes and Standards”). The Code Council does not consent to the reproduction of the text of its codes or standards in any ordinance. If the governing body enacts any changes, only the text of those changes or amendments may be included in the ordinance.

The Code Council also recognizes the need for jurisdictions to make laws accessible to the public. Accordingly, all I-Codes and I-Standards, along with the laws of many jurisdictions, are available to view for free at codes.iccsafe.org/codes/i-codes. These documents may also be purchased, in both digital and print versions, at shop.iccsafe.org.

To facilitate adoption, some I-Code sections contain blanks for fill-in information that needs to be supplied by the adopting jurisdiction as part of the adoption legislation. For example, the IFC contains:

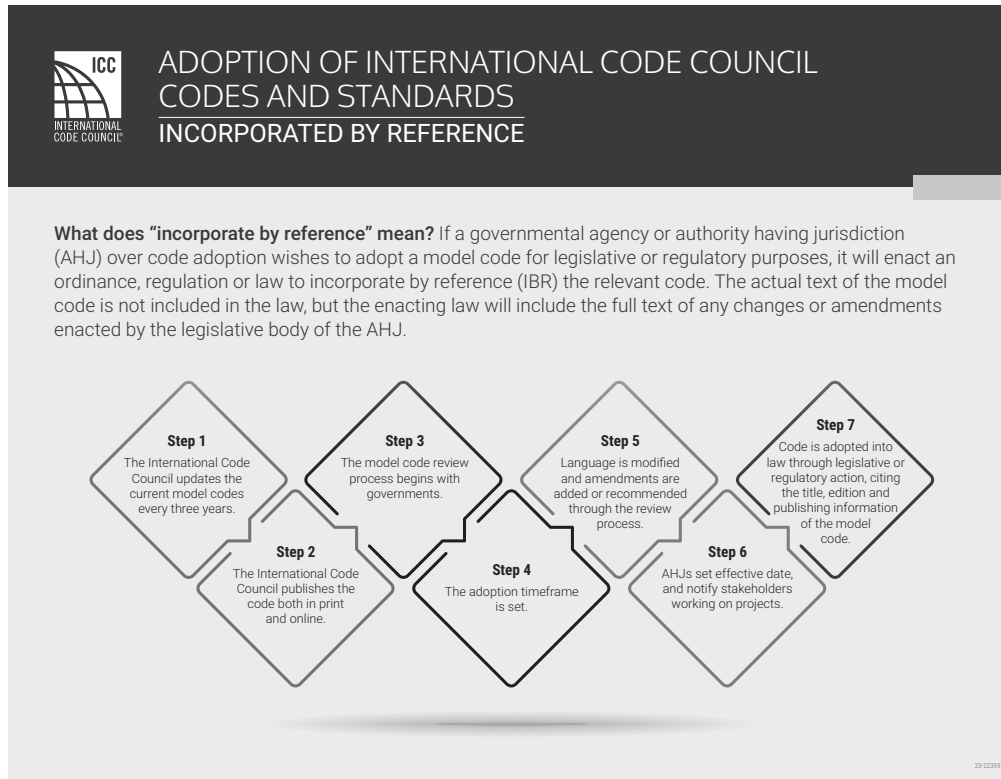
Section A101.1. Insert: [NAME OF JURISDICTION]

Section A101.3. Insert: [NUMBER OF YEARS]

Section 103.1. Insert: [NAME OF DEPARTMENT]

Section 113.4. Insert: [OFFENSE, DOLLAR AMOUNT, NUMBER OF DAYS]

Section 1103.5.3. Insert: [DATE BY WHICH SPRINKLER SYSTEM MUST BE INSTALLED]



For further information or assistance with adoption, including a sample ordinance, jurisdictions should contact the Code Council at incorporation@iccsafe.org.

For a list of frequently asked questions (FAQs) addressing a range of foundational topics about the adoption of model codes by jurisdictions and to learn more about the Code Council's code adoption resources, scan the QR code or visit iccsafe.org/code-adoption-resources.



INTRODUCTION TO THE INTERNATIONAL FIRE CODE

The IFC is a model code that regulates minimum fire safety requirements for new and existing buildings, facilities, storage and processes. The IFC addresses fire prevention, fire protection, life safety and safe storage and use of hazardous materials in new and existing buildings, facilities and processes. The IFC provides a total approach of controlling hazards in all buildings and sites, regardless of the hazard being indoors or outdoors.

The IFC is a design document. For example, before one constructs a building, the site must be provided with an adequate water supply for firefighting operations and a means of building access for emergency responders in the event of a medical emergency, fire or natural or technological disaster. Depending on the building's occupancy and uses, the IFC regulates the various hazards that may be housed within the building, including refrigeration systems, application of flammable finishes, fueling of motor vehicles, high-piled combustible storage, and the storage and use of hazardous materials. The IFC sets forth minimum requirements for these and other hazards and contains requirements for maintaining the life safety of building occupants; protecting emergency responders; and limiting the damage to a building and its contents as the result of a fire, explosion or unauthorized hazardous material discharge.

As described, the IFC has many types of requirements for buildings and facilities. The applicability of these requirements varies. An understanding of the applicability of requirements, as addressed in Sections 102.1 and 102.2, is necessary. Section 102.1 addresses when the construction and design provisions are applicable, whereas Section 102.2 addresses when the administrative, operational and maintenance provisions are applicable. Generally, the construction and design provisions apply to only new buildings or existing buildings and occupancies as addressed by Chapter 11. The administrative, maintenance and operational requirements are applicable to all buildings and facilities, whether new or existing.

ARRANGEMENT AND FORMAT OF THE 2024 IFC

Before applying the requirements of the IFC, it is beneficial to understand its arrangement and format. The IFC, like other codes published by the ICC, is arranged and organized to follow sequential steps that generally occur during a plan review or inspection.

The IFC is organized into seven parts. Each part represents a broad subject matter and includes the chapters that logically fit under the subject matter of each part. It is also foreseeable that additional chapters will need to be added in the future as regulations for new processes or operations are developed. Accordingly, the structure was designed to accommodate such future chapters by

providing reserved (unused) chapters in several of the parts. This will allow the subject matter parts to be conveniently and logically expanded without requiring a major renumbering of the IFC chapters.

CHAPTER TOPICS	
PARTS AND CHAPTERS	SUBJECTS
Part I—Chapters 1 and 2	Administrative and definitions
Part II—Chapters 3 and 4	General safety provisions
Part III—Chapters 5 through 12	Building and equipment design features
Part III—Chapters 13 through 19	Reserved for future use
Part IV—Chapters 20 through 41	Special occupancies and operations
Part IV—Chapters 42 through 49; 52	Reserved for future use
Part V—Chapters 50, 51 and 53 through 67	Hazardous materials
Part V—Chapters 68 through 79	Reserved for future use
Part VI—Chapter 80	Referenced standards
Part VII—Appendices A through O	Adoptable and informational appendices

International Building Code Correlated Topics

The IFC requirements for fire-resistance-rated construction, interior finish, fire protection systems, means of egress and construction safeguards are directly correlated to the chapters containing parallel requirements in the IBC as follows:

IFC/IBC CORRELATED TOPICS		
IFC CHAPTER/SECTION	IBC CHAPTER/SECTION	SUBJECT
Chapter 7	Chapter 7	Fire and smoke protection features (Fire-resistance-rated construction in the IBC)
Chapter 8	Chapter 8	Interior finish, decorative materials and furnishings
Chapter 9	Chapter 9	Fire protection and life safety systems
Chapter 10	Chapter 10	Means of egress
Section 1203	Chapter 27	Emergency and standby power
Chapter 31	Section 3103	Temporary structures
Chapter 33	Chapter 33	Construction fire safety
Chapters 50–67	Sections 307, 414, 415	Hazardous materials and Group H requirements

PART I—ADMINISTRATIVE

Chapter 1 Scope and Administration.

Chapter 1 establishes the limits of applicability of the code and describes how the code is to be applied and enforced. The provisions of Chapter 1 establish the authority and duties of the code official appointed by the authority having jurisdiction and also establish the rights and privileges of the design professional, contractor and property owner.

Chapter 2 Definitions.

Chapter 2 is the repository of the definitions of terms used in the body of the code. 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.

PART II—GENERAL SAFETY PROVISIONS

Chapter 3 General Requirements

General regulations contained in Chapter 3, are intended to improve premises safety for everyone, including construction workers, tenants, operations and maintenance personnel, and emergency response personnel.

Chapter 4 Emergency Planning and Preparedness

Chapter 4 addresses the human contribution to life safety during emergencies. Continuous training and scheduled fire, evacuation and lockdown drills can be as important as the required periodic inspections and maintenance of built-in fire protection features. The level of preparation by the occupants also improves the emergency responders' abilities during an emergency.

PART III—BUILDING AND EQUIPMENT DESIGN FEATURES

Chapter 5 Fire Service Features

The requirements of Chapter 5 apply to all buildings and occupancies and pertain to access roads, access to building openings and roofs, premises identification, key boxes, fire protection water supplies, fire command centers, fire department access to equipment, and in-building emergency responder communication system coverage.

Chapter 6 Building Services and Systems

Chapter 6 provides a more systematic view of building systems and services as they relate to potential safety hazards and when and how they should be installed.

Chapter 7 Fire and Smoke Protection Features

The maintenance of assemblies required to be fire-resistance rated is a key component in a passive fire protection philosophy. Chapter 7 sets forth requirements to maintain required fire-resistance ratings of building elements and limit fire spread. Section 701 addresses the basics of what construction elements such as fire barriers and smoke barriers need to be maintained as well as defining the owner's responsibility. Sections 703 through 708, deals with various fire and smoke protection features that must also be maintained.

Chapter 8 Interior Finish, Decorative Materials and Furnishings

The overall purpose of Chapter 8 is to regulate interior finishes, decorative materials and furnishings in new and existing buildings so that they do not significantly add to or create fire hazards within buildings. This chapter is consistent with Chapter 8 of the IBC, which regulates the interior finishes of new buildings.

Chapter 9 Fire Protection and Life Safety Systems

Chapter 9 prescribes the minimum requirements for active systems of fire protection equipment to perform the following functions: detect a fire, alert the occupants or fire department of a fire emergency, and control smoke and control or extinguish the fire. Generally, the requirements are based on the occupancy, the height and the area of the building because these are the factors that most affect firefighting capabilities and the relative hazard of a specific building or portion thereof. This chapter parallels and is substantially duplicated in Chapter 9 of the IBC; however, this chapter also contains periodic testing criteria that are not contained in the IBC. In addition, the special fire protection system requirements based on use and occupancy found in IBC Chapter 4 are duplicated in IFC Chapter 9 as a user convenience.

Chapter 10 Means of Egress

The criteria in Chapter 10 regulating the design of the means of egress system are established as the primary method for protection of occupants by allowing timely relocation or evacuation. Both prescriptive and performance language is utilized for determination of a safe exiting system. It addresses all portions of the means of egress system (i.e., exit access, exits and exit discharge) and includes design requirements as well as provisions regulating individual components. The requirements detail the size, arrangement, number and protection of means of egress components. The means of egress protection requirements work in coordination with other sections of the code, such as protection of vertical openings (see Chapter 7 of the IBC), interior finish (see Chapter 8 of the IBC), fire suppression and detection systems (see Chapter 9) and numerous others, all having an impact on life safety. Chapter 10 of the IBC is duplicated in Chapter 10 of the IFC; however, the IFC contains one additional section on the maintenance of the means of egress system in existing buildings.

Chapter 11 Construction Requirements for Existing Buildings

Chapter 11 applies to existing buildings constructed prior to the adoption of the code and intends to provide a minimum degree of fire and life safety to persons occupying existing buildings by providing for retroactive requirements to install or upgrade fire safety features to such buildings that do not comply with the minimum requirements of the IBC. Prior to the 2009 edition, its content existed in the IFC but in a random manner that was neither efficient nor user-friendly. In the 2007/2008 code development cycle, a code change (F294-07/08) was approved that consolidated the retroactive elements of IFC into a single chapter for easier and more efficient reference and application to existing buildings.

Chapter 12 Energy Systems

Chapter 12 addresses any provisions related to energy systems found in the IFC. The expansion of such energy systems is related to meeting today's energy, environmental and economic challenges. Ensuring appropriate criteria to address the safety of such

systems in building and fire codes is an important part of protecting the public at large, building occupants and emergency responders. These requirements also facilitate the successful implementation of new technologies.

All text in Section 1207 of the 2024 IFC with the following designation (Material based on NFPA 855 2023 Ed.) is reproduced with permission from the National Fire Protection Association (NFPA) and is based upon NFPA 855, *Standard for the Installation of Stationary Energy Storage Systems*, Copyright © 2023 NFPA. All designated text is either directly copied from the 2023 edition of NFPA 855 or as modified by the ICC Code Development Process. This material is not the complete and official position of NFPA on the referenced subject, which is represented solely by the standard in its entirety. NFPA shall not be responsible for the manner in which this information is presented, nor for any interpretations thereof.

**Chapters 13 through 19
Reserved for future use.**

PART IV—SPECIAL OCCUPANCIES AND OPERATIONS

Chapter 20 Aviation Facilities

Chapter 20 specifies minimum requirements for the fire-safe operation of airports, heliports and helistops. The principal nonflight operational hazards associated with aviation involve fuel, facilities and operations. Therefore, safe use of flammable and combustible liquids during fueling and maintenance operations is emphasized. Availability of portable Class B:C-rated fire extinguishers for prompt control or suppression of incipient fires is required.

Chapter 21 Dry Cleaning

The provisions of Chapter 21 are intended to reduce hazards associated with the use of flammable and combustible dry cleaning solvents. These materials, like all volatile organic chemicals, generate significant quantities of static electricity and are thus readily ignitable. Many flammable and nonflammable dry cleaning solvents also create health hazards when involved in a fire.

Chapter 22 Combustible Dust-Producing Operations

The requirements of Chapter 22 seek to reduce the likelihood of dust explosions by managing the hazards of ignitable suspensions of combustible dusts associated with a variety of operations, including woodworking, mining, food processing, agricultural commodity storage and handling, and pharmaceutical manufacturing, among others. Ignition source control and good housekeeping practices in occupancies containing dust-producing operations are emphasized.

Chapter 23 Motor Fuel-Dispensing Facilities and Repair Garages

Chapter 23 provides provisions that regulate the storage and dispensing of both liquid and gaseous motor fuels at public and private automotive, marine and aircraft motor fuel-dispensing facilities, and fleet vehicle motor fuel-dispensing facilities. In addition, this chapter addresses the various hazards created by the use of both liquid and gaseous fuels within repair garages.

Chapter 24 Flammable Finishes

Chapter 24 requirements govern operations where flammable or combustible finishes are applied by spraying, dipping, powder coating or flow-coating processes. As with all operations involving flammable or combustible liquids and combustible dusts or vapors, controlling ignition sources and methods of reducing or controlling flammable vapors or combustible dusts at or near these operations are emphasized.

Chapter 25 Fruit and Crop Ripening

Chapter 25 provides guidance that is intended to reduce the likelihood of explosions resulting from improper use or handling of ethylene gas used for crop ripening and coloring processes. This is accomplished by regulating ethylene gas generation, storage, and distribution systems and controlling ignition sources. Design and construction of facilities for this use are regulated by the *IBC* to reduce the impact of potential accidents on people and buildings.

Chapter 26 Fumigation and Insecticidal Fogging

Chapter 26 regulates fumigation and insecticidal fogging operations that use toxic pesticide chemicals to kill insects, rodents and other vermin. Fumigants and insecticidal fogging agents pose little hazard if properly applied; however, the inherent toxicity of all these agents and the potential flammability of some makes special precautions necessary when they are used.

Chapter 27 Semiconductor Fabrication Facilities

The requirements of Chapter 27 are intended to control hazards associated with the manufacture of electrical circuit boards or microchips, commonly called semiconductors. Materials commonly associated with semiconductor manufacturing are often quite hazardous and include flammable liquids, pyrophoric and flammable gases, toxic substances, and corrosives. The requirements of this chapter are concerned with both life safety and property protection. However, the fire code official should recognize that the risk of extraordinary property damages is far more common than the risk of personal injuries from fire.

Chapter 28 Lumber Yards and Agro-Industrial, Solid Biomass and Woodworking Facilities

Provisions of Chapter 28 are intended to prevent fires and explosions, facilitate fire control and reduce exposures to and from facilities storing, selling or processing wood and forest products. Also included are solid biomass feedstock and raw products associated with agro-industrial facilities, the outdoor storage of pallets, and manufacturing and recycling facilities. This chapter requires active and passive fire protection features to reduce on- and off-site exposures, limit fire size and development, and facilitate firefighting by employees and the fire service.

Chapter 29 Manufacture of Organic Coatings

Chapter 29 regulates materials and processes associated with the manufacture of paints as well as bituminous, asphaltic and other diverse compounds formulated to protect buildings, machines and objects from the effects of weather, corrosion and hostile environmental exposures. Painting and processes related to the manufacture of nonflammable and noncombustible or water-based products are exempt from the provisions of this chapter. The application of organic coatings is covered by Chapter 24.

Chapter 30 Industrial Ovens

Chapter 30 addresses the fuel supply, ventilation, emergency shutdown equipment, fire protection and the operation and maintenance of industrial ovens, which are sometimes referred to as industrial heat enclosures or industrial furnaces. Compliance with this chapter is intended to reduce the likelihood of fires involving industrial ovens, which are usually the result of the fuel in use or volatile vapors given off by the materials being heated, or to manage the impact if a fire should occur.

Chapter 31 Tents, Temporary Structures and Other Membrane Structures

The requirements in Chapter 31 are intended to protect temporary as well as permanent tents and air-supported and other membrane structures and temporary special event structures from fire and similar hazards. This chapter also addresses outdoor assembly events, which are not limited to those events where tents or other membrane structures are used but are regulated due to the number of people, density of those people and hazards associated with large outdoor events related to egress, fire hazards from cooking and other related concerns.

Chapter 32 High-Piled Combustible Storage

Chapter 32 provides guidance for reasonable protection of life from hazards associated with the storage of combustible materials in closely packed piles or on pallets, in racks, or on shelves where the top of storage is greater than 12 feet in height. This chapter does not cover miscellaneous combustible materials storage regulated in Section 315.

Chapter 33 Fire Safety during Construction and Demolition

Chapter 33 outlines general fire safety precautions for all structures and all occupancies during construction and demolition operations. Most importantly, this chapter addresses owner responsibility and provides requirements for a site safety plan and requires a site safety director. This chapter is consistent with both Chapter 33 of the IBC and Chapter 15 of the IEBC.

Chapter 34 Tire Rebuilding and Tire Storage

The requirements of Chapter 34 are intended to prevent or control fires and explosions associated with the remanufacture and storage of tires and tire byproducts. Additionally, the requirements are intended to minimize the impact of indoor and outdoor tire storage fires by regulating pile volume and location, segregating the various operations, providing for fire department access and a water supply, and controlling ignition sources.

Chapter 35 Welding and Other Hot Work

Chapter 35 covers requirements for safety in welding and other types of hot work by reducing the potential for fire ignitions that often result in large losses. Several different types of hot work would fall under the requirements found in Chapter 35, including both gas and electric arc methods and any open-torch operations. Many of the activities of this chapter focus on the actions of the occupants.

Chapter 36 Marinas

Chapter 36 addresses the fire protection and prevention requirements for marinas. It was developed in response to the complications encountered by a number of fire departments responsible for the protection of marinas as well as fire loss history in marinas that lacked fire protection. Compliance with this chapter intends to establish safe practices in marina areas, provide an identification method for mooring spaces in the marina, and provide firefighters with safe operational areas and fire protection methods to extend hose lines in a safe manner.

Chapter 37 Combustible Fibers

Chapter 37 establishes the requirements for storage and handling of combustible fibers, including animal, vegetable and synthetic fibers, whether woven into textiles, baled, packaged or loose. Operations involving combustible fibers are typically associated with salvage, paper milling, recycling, cloth manufacturing, carpet and textile mills and agricultural operations, among others. The primary hazard associated with these operations is the abundance of materials and their ready ignitability.

Chapter 38 Higher Education Laboratories

Chapter 38 addresses the unique needs of laboratories in higher education academic institutions for both new and existing buildings and new and existing laboratories. This chapter offers unique solutions for laboratories that allow the necessary quantities of hazardous materials while not requiring a Group H occupancy classification. For laboratories in existing buildings, this chapter also provides more flexibility by allowing the use of certain typically prohibited materials by using inert atmosphere glove boxes or fume hoods, proper separation and an appropriately located fire extinguisher.

Chapter 39 Processing and Extraction Facilities

Chapter 39 focuses on the plant processing, solvent based, and extraction of oils and fats from various plants, and cultivation and related activities. The processes used are not necessarily typical hazardous material processes and often the systems and equipment associated with such processes are not listed. This chapter provides the tools to appropriately enforce the IFC and provide an appropriate level of safety to meet the unique needs of the industry while providing the appropriate level of safety.

Chapter 40 Storage of Distilled Spirits and Wines

Chapter 40 provides specific requirements for the storage of distilled spirits and wines, including basic fire prevention requirements, fire protection features, storage configuration and signage. Additionally, in accordance with Section 307.1.1 of the IBC, these occupancies are not classified as a Group H occupancy. Instead, as listed in Sections 311.2 and 311.3 of the IBC, the storage of beverages that contain up to and including 20 percent alcohol are classified as a Group S-2 occupancy, and those that contain over 20 percent alcohol content are classified as a Group S-1 occupancy.

Chapter 41 Temporary Heating and Cooking Operations

Chapter 41 provides all requirements relative to temporary heating and cooking operations in a single chapter. Some of these provisions were originally found in Chapters 3, 6 and 31. This chapter is intended to facilitate consistent enforcement of temporary heating and cooking operations by making the requirements more straightforward. Temporary heating on construction sites is addressed in Chapter 33.

Chapters 42 through 49 Reserved for future use.

PART V—HAZARDOUS MATERIALS

Chapter 50 Hazardous Materials—General Provisions

Chapter 50 contains the general requirements for all hazardous chemicals in all occupancies. The general provisions of this chapter are intended to be companion provisions with the specific requirements of Chapters 51 through 67 regarding a given classification of hazardous material.

Chapter 51 Aerosols

Chapter 51 addresses the prevention, control and extinguishment of fires and explosions in facilities where retail aerosol products are displayed or stored. Requirements for storing aerosol products are dependent on the level of aerosol product, level of sprinkler protection, type of storage condition and quantity of aerosol products.

Chapter 52 Reserved for future use.

Chapter 53 Compressed Gases

Chapter 53 regulates the storage, use and handling of all flammable and nonflammable compressed gases, such as those that are used in medical facilities, air separation plants, industrial plants, agricultural equipment facilities and in systems such as carbon dioxide beverage dispensing and carbon dioxide enrichment. Where classified as a hazardous material, Chapter 50 would apply along with specific applications such as those used in welding and cutting (Chapter 35), cryogenic liquids (Chapter 55) and liquefied petroleum gases (Chapter 61).

Chapter 54 Corrosive Materials

Chapter 54 addresses materials whose primary hazard is corrosivity; that is, the ability to destroy or irreparably damage living tissue on contact. Although corrosive gases exist, most corrosive materials are solid or liquid and classified as either acids or bases (alkalis). These materials may pose a wide range of hazards other than corrosivity, such as combustibility, reactivity or oxidizing hazards, and must conform to the requirements of this code with respect to all known hazards.

Chapter 55 Cryogenic Fluids

Chapter 55 regulates the hazards associated with the storage, use and handling of cryogenic fluids through regulation of such things as pressure relief mechanisms and proper container storage. These hazards are in addition to the code requirements that address the other hazards of cryogenic fluids, such as flammability and toxicity (Chapters 50, 58 and 60).

Chapter 56 Explosives and Fireworks

Chapter 56 prescribes minimum requirements for the safe manufacture, storage, handling and use of explosives, ammunition and blasting agents for commercial and industrial occupancies. These provisions are intended to protect the general public, emergency responders and individuals who handle explosives. Chapter 56 also regulates the manufacturing, retail sale, display and wholesale distribution of fireworks.

Chapter 57 Flammable and Combustible Liquids

The requirements of Chapter 57 are intended to reduce the likelihood of fires involving the storage, handling, use or transportation of flammable and combustible liquids. The danger associated with flammable and combustible liquids is that the vapors from these liquids, when combined with air in their flammable range, will burn or explode at temperatures near normal living and working environment.

Chapter 58 Flammable Gases and Flammable Cryogenic Fluids

Chapter 58 sets requirements for the storage and use of flammable gases. For safety purposes, there is a limit on the quantities of flammable gas allowed per control area. Exceeding these limitations increases the possibility of damage to both property and individuals. The principal hazard posed by flammable gas is its ready ignitability, or even explosivity, when mixed with air in the proper proportions. Consequently, occupancies storing or handling large quantities of flammable gas are classified as Group H- 2 (high hazard) by the IBC.

Chapter 59 Flammable Solids

Chapter 59 addresses general requirements for storage and handling of flammable solids, especially magnesium; however, it is important to note that several other solid materials, primarily metals, can be explosion hazards under the right conditions. Some of these metals are almost exclusively laboratory materials but because of where they are used, fire service personnel must be trained to handle emergency situations.

Chapter 60 Highly Toxic and Toxic Materials

The main purpose of Chapter 60 is to protect occupants, emergency responders and those in the immediate area of the building and facility from short-term, acute hazards associated with a release or general exposure to toxic and highly toxic materials. This chapter deals with all three states of toxic and highly toxic materials: solids, liquids and gases. This code does not address long-term exposure effects of these materials, which are addressed by agencies such as the Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA).

Chapter 61 Liquefied Petroleum Gases

Chapter 61 establishes requirements for the safe handling, storing and use of LP-gas to reduce the possibility of damage to containers, accidental releases of LP-gas and exposure of flammable concentrations of LP-gas to ignition sources. LP-gas (notably propane) is well known as a camping fuel for cooking, lighting, heating and refrigerating and also remains a popular standby fuel supply for auxiliary generators as well as being widely used as an alternative motor vehicle fuel.

Chapter 62 Organic Peroxides

Chapter 62 addresses the hazards associated with the storage, handling and use of organic peroxides and intends to prevent their uncontrolled release. These chemicals possess the characteristics of flammable or combustible liquids and are also strong oxidizers. The requirements of this chapter pertain to industrial applications in which significant quantities of organic peroxides are stored or used; however, smaller quantities of organic peroxides still pose a significant hazard and, therefore, must be stored and used in accordance with the applicable provisions of this chapter and Chapter 50.

Chapter 63 Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids

Chapter 63 addresses the hazards associated with solid, liquid, gaseous and cryogenic fluid oxidizing materials, including oxygen in home use, and establishes criteria for their safe storage and protection in indoor and outdoor storage facilities, minimizing the potential for uncontrolled releases and contact with fuel sources. Although oxidizers themselves do not burn, they pose unique fire hazards because of their ability to support combustion by breaking down and giving off oxygen.

Chapter 64 Pyrophoric Materials

Chapter 64 regulates the hazards associated with pyrophoric materials, which are capable of spontaneously igniting in the air at or below a temperature of 130°F (54°C). Many pyrophoric materials also pose severe flammability or reactivity hazards. This chapter

addresses only the hazards associated with pyrophoric materials. Materials that pose multiple hazards must conform to the requirements of the code with respect to all hazards.

Chapter 65 Pyroxylin (Cellulose Nitrate) Plastics

Chapter 65 addresses the significant hazards associated with pyroxylin (cellulose nitrate) plastics, which are the most dangerous and unstable of all plastic compounds. Strict compliance with the provisions of this chapter, along with proper housekeeping and storage arrangements, helps to reduce the hazards associated with pyroxylin (cellulose nitrate) plastics in a fire or other emergencies.

Chapter 66 Unstable (Reactive) Materials

Chapter 66 addresses the hazards of unstable (reactive) liquid and solid materials as well as unstable (reactive) compressed gases. Materials that pose multiple hazards, such as toxicity, corrosivity, explosivity, flammability or oxidizing potential, must conform to the requirements of the code with respect to all hazards. Strict compliance with the provisions of this chapter, along with proper housekeeping and storage arrangements, help reduce the exposure hazards associated with unstable (reactive) materials in a fire or other emergency.

Chapter 67 Water-Reactive Solids and Liquids

Chapter 67 addresses the hazards associated with water-reactive materials that are solid or liquid at normal temperatures and pressures. In addition to their water reactivity, these materials may pose a wide range of other hazards, such as toxicity, flammability, corrosiveness or oxidizing potential. Strict compliance with the requirements of this chapter, along with proper housekeeping and storage arrangements, helps to reduce the exposure hazards associated with water-reactive materials in a fire or other emergency.

Chapters 68 through 79 Reserved for future use.

PART VI—REFERENCED STANDARDS

Chapter 80 Referenced Standards

Chapter 80 lists all of the product and installation standards and codes that are referenced throughout Chapters 1 through 67 and includes identification of the promulgators and the section numbers in which the standards and codes are referenced. As stated in Section 102.7, these standards and codes become an enforceable part of the code (to the prescribed extent of the reference) as if printed in the body of the code.

PART VII—APPENDICES

Appendix A Board of Appeals

Appendix A contains the provisions for appeal and the establishment of a board of appeals. The provisions include the application for an appeal, the makeup of the board of appeals and the conduct of the appeal process.

Appendix B Fire-Flow Requirements for Buildings

Appendix B provides a tool for the use of jurisdictions in establishing a policy for determining fire-flow requirements in accordance with Section 507.3. The primary tool used in this appendix is a table that presents fire flow based on construction type and building area based on the correlation of the Insurance Services Office (ISO) method and the construction types used in the *IBC*.

Appendix C Fire Hydrant Locations and Distribution

Appendix C focuses on the location and spacing of fire hydrants, which is important to the success of firefighting operations. This particular appendix gives one methodology based on the required fire flow that fire departments can work with to set a policy for hydrant distribution around new buildings and facilities in conjunction with Section 507.5.

Appendix D Fire Apparatus Access Roads

Appendix D contains more detailed elements for use with the basic access requirements found in Section 503. This appendix, like Appendices B and C, is a tool for jurisdictions looking for guidance in establishing access requirements and includes criteria for multiple-family residential developments, large one- and two-family subdivisions, specific examples for various types of turnarounds for fire department apparatus and parking regulatory signage.

Appendix E Hazard Categories

Appendix E contains guidance in the classifying of hazardous materials so that proposed designs can be evaluated intelligently and accurately. The descriptive materials and explanations of hazardous materials and how to report and evaluate them on a Safety Data Sheet (SDS) are intended to be instructional as well as informative.

Appendix F Hazard Ranking

The information in Appendix F is intended to be a companion to the specific requirements of Chapters 51 through 67, which regulate the storage, handling and use of all hazardous materials classified as either physical or health hazards. This appendix lists the various hazardous materials categories that are defined in this code, along with the NFPA 704 hazard ranking for each.

Appendix G Cryogenic Fluids—Weight and Volume Equivalents

Appendix G gives the fire code official and design professional a ready reference tool for the conversion of the liquid weight and volume of cryogenic fluid to their corresponding volume of gas and vice versa and is a companion to the provisions of Chapter 55 of this code. Note that this appendix is for information purposes and is not intended for adoption.

Appendix H Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) Instructions

Appendix H is intended to assist businesses in establishing a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) based on the classification and quantities of materials that would be found on-site, in storage or in use. The sample forms and available Safety Data Sheets (SDS) provide the basis for the evaluations. It is also a companion to IFC Sections 407.5 and 407.6, which provide the requirement that the HMIS and HMMP be submitted when required by the fire code official.

Appendix I Fire Protection Systems—Noncompliant Conditions

The purpose of Appendix I, which was developed by the ICC Hazard Abatement in Existing Buildings Committee, is to provide the fire code official with a list of conditions that are readily identifiable by the inspector during the course of an inspection utilizing the IFC. The specific conditions identified in this appendix are primarily derived from applicable NFPA standards and pose a hazard to the proper operation of the respective systems.

Appendix J Building Information Sign

Appendix J provides design, installation and maintenance requirements for a Building Information Sign (BIS), a fire service tool to be utilized in the crucial, initial response of firefighters to a structure fire. The BIS placard, which is in the shape of a fire service Maltese Cross, is designed to be utilized within the initial response time frame of an incident to assist firefighters in their tactical assessment of the construction type and hourly rating, fire protection systems, occupancy type, content hazards and special features that could affect tactical decisions and operations.

Appendix K Construction Requirements for Existing Ambulatory Care Facilities

Appendix K was created by the ICC Ad Hoc Committee on Healthcare (AHC) and is intended to provide jurisdictions with an option for assessing minimum fire and life safety requirements for buildings containing ambulatory care facilities. These requirements are presented as an appendix so that the adopting authority can exercise judgment in the adoption and application of this section since the ambulatory care facility requirements are fairly new to the codes. The technical requirements are based on the IBC language, which is consistent with the overall concept of the current federal requirements.

Appendix L Requirements for Firefighter Air Replenishment Systems

Appendix L provides for the design, installation and maintenance of permanently installed firefighter breathing air systems in buildings designated by the jurisdiction. The system has been called a “standpipe for air” and consists of stainless steel, high-pressure piping that is supplied by on-site air storage or fire department air supply units. Air-filling stations are then located throughout the building, allowing firefighters to refill breathing air cylinders inside the fire building.

Appendix M High-Rise Buildings—Retroactive Automatic Sprinkler Requirement

Appendix M was created with the intent to provide an option for adoption by jurisdictions that choose to require existing high-rise buildings to be retrofitted with automatic sprinklers.

Appendix N Indoor Trade Shows and Exhibitions

Appendix N was created to address the hazards associated with larger, more complex trade shows and exhibitions. Although many of these requirements are already included in various locations in this code, some of the more important items, such as requirements for covered booths and multiple-story booths, are not. The intent is to have the requirements covering these events in a single location. This assists those organizing exhibitions and individual exhibitors unfamiliar with the fire code.

Appendix O Valet Trash and Recycling Collection in Group R-2 Occupancies

Appendix O provides requirements to facilitate the enforcement of safety requirements for valet trash and recycling collection services in Group R-2 occupancies. These collection services are formally defined in Section 202 as “*Valet Trash Collection*,” which includes recycling. Occupants receiving this service place trash and recyclables in the corridor outside of their residence for pickup by a collection service on a regularly scheduled basis in accordance with restrictions, as prescribed by this appendix.

RELOCATION OF TEXT OR TABLES

The following table indicates relocation of sections and tables in the 2024 edition of the IFC from the 2021 edition.

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104.2.3.6	104.10.1
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