

2012 **IPC**[®] **CODE AND COMMENTARY**

The complete IPC with
commentary after each section



2012 IPC[®]
2 CODE AND COMMENTARY



2012 International Plumbing Code® Commentary

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PREFACE

Significant changes in the plumbing industry, as well as in manufacturing technology, had become so commanding that a radically new approach to the design and installation of plumbing systems seemed an imperative. The reply to that imperative was the *International Plumbing Code*, a document emphasizing prescriptive and performance-related provisions.

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

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

The format of the Commentary includes the full text of each section, table and figure in the code, followed immediately by the commentary applicable to that text. Each section's narrative includes a statement of its objective and intent, and usually includes a discussion about why the requirement commands the conditions set forth. Code text and commentary text are easily distinguished from each other. All code text is shown as it appears in the *International Plumbing Code*, and all commentary is indented below the code text and begins with the symbol ❖.

Readers should note that the Commentary is to be used in conjunction with the *International Plumbing Code* and not as a substitute for the code. **The Commentary is advisory only**; the code official alone possesses the authority and responsibility for interpreting the code.

Comments and recommendations are encouraged, for through your input, we can improve future editions. Please direct your comments to the Codes and Standards Development Department at the Chicago District Office.

TABLE OF CONTENTS

CHAPTER 1	SCOPE AND ADMINISTRATION	1-1 – 1-20
CHAPTER 2	DEFINITIONS	2-1 – 2-30
CHAPTER 3	GENERAL REGULATIONS	3-1 – 3-48
CHAPTER 4	FIXTURES, FAUCETS AND FIXTURE FITTINGS	4-1 – 4-80
CHAPTER 5	WATER HEATERS.....	5-1 – 5-20
CHAPTER 6	WATER SUPPLY AND DISTRIBUTION	6-1 – 6-104
CHAPTER 7	SANITARY DRAINAGE	7-1 – 7-68
CHAPTER 8	INDIRECT/SPECIAL WASTE	8-1 – 8-14
CHAPTER 9	VENTS.....	9-1 – 9-72
CHAPTER 10	TRAPS, INTERCEPTORS AND SEPARATORS	10-1 – 10-22
CHAPTER 11	STORM DRAINAGE.....	11-1 – 11-28
CHAPTER 12	SPECIAL PIPING AND STORAGE SYSTEMS	12-1 – 12-4
CHAPTER 13	GRAY WATER RECYCLING SYSTEMS.....	13-1 – 13-8
CHAPTER 14	REFERENCED STANDARDS.....	14-1 – 14-12
APPENDIX A	PLUMBING PERMIT FEE SCHEDULE.....	A-1 – A-2
APPENDIX B	RATES OF RAINFALL FOR VARIOUS CITIES.....	B-1 – B-2
APPENDIX C	VACUUM DRAINAGE SYSTEM	C-1 – C-4
APPENDIX D	DEGREE DAY AND DESIGN TEMPERATURES.....	D-1 – D-8
APPENDIX E	SIZING OF WATER PIPING SYSTEM.....	E-1 – E-24
APPENDIX F	STRUCTURAL SAFETY	F-1 – F-2
INDEX		INDEX-1 – INDEX-8

Chapter 1: Scope and Administration

General Comments

The law of building regulation is grounded on the police power of the state. In terms of how it is used, this is the power of the state to legislate for the general welfare of its citizens. This power enables passage of such laws as a plumbing code. It is from the police power delegated by the state legislature that local governments are able to enact building regulations. If the state legislature has limited this power in any way, the municipality may not exceed these limitations. Although the municipality may not further delegate its police power (e.g., by delegating the burden of determining code compliance to the building owner, contractor or architect), it may turn over the administration of building regulations to a municipal official, such as a code official, provided that he or she is given sufficient criteria to clearly establish the basis for decisions as to whether or not a proposed building, including its plumbing systems, conforms to the code.

Chapter 1 is largely concerned with maintaining “due process of law” in enforcing the performance criteria contained in the code. Only through careful observation of the administrative provisions can the code official reasonably hope to demonstrate that “equal protection under the law” has been provided. Although it is generally assumed that the administrative and enforcement sections of a code are geared toward the code official, this is not entirely true. The provisions also establish the rights and privileges of the design professional, contractor and building owner. The position of the code official is merely to review the proposed and completed work and determine whether a plumbing installation conforms to the code requirements. The design professional is responsible for the design of a safe, sanitary plumbing system.

The contractor is responsible for installing the system in strict accordance with the plans.

During the course of the construction of a plumbing system, the code official reviews the activity to make sure that the spirit and intent of the law are being met and that the plumbing system provides adequate protection of public health. As a public servant, the code official enforces the code in an unbiased, proper manner. Every individual is guaranteed equal enforcement of the code. Furthermore, design professionals, contractors and building owners have the right of due process for any requirement in the code.

Purpose

A plumbing code, as with any other code, is intended for adoption as a legally enforceable document to safeguard health, safety, property and public welfare. A plumbing code cannot be effective without adequate provisions for its administration and enforcement. The official charged with the administration and enforcement of plumbing regulations has a great responsibility, and with this responsibility goes authority. No matter how detailed the plumbing code may be, the code official must, to some extent, exercise judgment in determining compliance. The code official has the responsibility for establishing that the homes in which the citizens of the community reside and the buildings in which they work are designed and constructed to be reasonably free from hazards associated with the presence and use of plumbing appliances, appurtenances, fixtures and systems. The code is intended to establish a minimum acceptable level of safety.

PART 1—SCOPE AND APPLICATION

SECTION 101 GENERAL

[A] **101.1 Title.** These regulations shall be known as the *International Plumbing Code* of [NAME OF JURISDICTION] hereinafter referred to as “this code.”

❖ This section sets forth the scope and intent of the code as it applies to new and existing structures. The adopted regulations are identified by inserting the name of the adopting jurisdiction into the code.

[A] **101.2 Scope.** The provisions of this code shall apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within this jurisdiction. This code shall also regulate nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and conden-

sate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel-gas-fired water heaters and water heater venting systems shall be regulated by the *International Fuel Gas Code*. Provisions in the appendices shall not apply unless specifically adopted.

Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the *International Residential Code*.

❖ This section describes the types of plumbing system construction-related activities to which the code is intended to apply. The applicability of the code encompasses the initial design of plumbing systems, the installation and construction phases and the maintenance of operating systems. Section 101.2 excludes nothing plumbing related and does not limit applicability of the code to any device, fixture, system and asso-

ciated equipment that could fall under, or is construed to fall under, the definition of “Plumbing” (see the definition of “Plumbing” in Chapter 2). The code is intended to govern plumbing systems provided for use by and for the general safety and well being of occupants of a building. The code intends to regulate any and all plumbing-related appliances, systems and associated equipment that can affect the health, safety and welfare of building occupants insofar as they are affected by the installation, operation and maintenance of such appliances and systems. Plumbing systems include the associated equipment by definition of “Plumbing system” in Chapter 2.

In addition, nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems are regulated by the code. Other than the actual connections to the potable water system, the code does not regulate hydronic piping for space heating or cooling, lawn sprinkler (irrigation) systems or automatic fire sprinkler and standpipe systems. These are not considered to be plumbing systems because they have nothing to do with supplying potable water or the transport of liquid wastes and water-borne solid wastes. Flammable/combustible liquid piping, hydronic piping, fire suppression system piping and nonplumbing-related systems are typically addressed in the *International Building Code*® (IBC®), the *International Fire Code*® (IFC®) and the *International Mechanical Code*® (IMC®). Most hydronic heating and cooling systems and fire suppression systems have one or more connections to the plumbing system. Such connections involve direct connections to the water supply system and indirect connections to the drainage system. For example, an automatic fire sprinkler system may be supplied by the public potable water supply and may have one or more drains and test apparatus that discharge water to the building drainage system. In the case of irrigation systems, for example, the plumbing system terminates at the backflow prevention device that joins the potable water supply to the irrigation piping system. All interfaces between plumbing systems and nonplumbing systems are subject to the requirements of the code.

This section references the *International Fuel Gas Code*® (IFGC®) for all fuel-gas-related regulations. This is the result of an agreement between the International Code Council® (ICC®) and the American Gas Association (AGA) to develop the IFGC.

The exception is actually a distinct requirement that sends the user to the *International Residential Code*® (IRC®) for one- and two-family dwellings that are less than four stories in height and townhouses that are less than four stories in height as these structures are within the scope of the IRC. It is the intent of the *International Codes*® that the *International Plumbing Code*® (IPC®) regulate plumbing in all structures that do not fall within the scope of the IRC. Structures falling within the scope of the IRC are to be regulated by the IRC.

[A] 101.3 Intent. The purpose of this code is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems.

❖ The intent of the code is to set forth requirements that establish the minimum acceptable level to safeguard life or limb, health, property and public welfare. Intent becomes important in the application of sections such as Sections 102, 104.2, 105.2 and 108, as well as any enforcement-oriented interpretive action or judgment. As with any code, the written text is subject to interpretation. Interpretations should not be affected by economics or the potential impact on any party. The only consideration should be protection of the public health, safety and welfare.

[A] 101.4 Severability. If any section, subsection, sentence, clause or phrase of this code is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

❖ Only invalid sections of the code (as established by the court of jurisdiction) can be set aside. This is essential to safeguard the application of the code text to situations in which a provision of the code is declared illegal or unconstitutional. This section preserves the legislative action that put the legal provisions in place.

SECTION 102 APPLICABILITY

[A] 102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

❖ Specific requirements of the code override or take precedence over general requirements. For example, while the code specifies the types of piping materials that can be used for vent systems, the specific requirements for chemical waste systems requires the vent piping be suitable for the service intended and be approved by the code official.

[A] 102.2 Existing installations. Plumbing systems lawfully in existence at the time of the adoption of this code shall be permitted to have their use and maintenance continued if the use, maintenance or repair is in accordance with the original design and no hazard to life, health or property is created by such plumbing system.

❖ An existing plumbing system is generally considered to be “grandfathered” with code adoption if the system meets a minimum level of safety. Frequently the criteria for this level are the regulations (or code) under which the existing building was originally constructed. If there are no previous code criteria to apply, the code official is to apply those provisions that are reasonably applicable to existing buildings. A specific level of safety is dictated by provisions dealing with hazard