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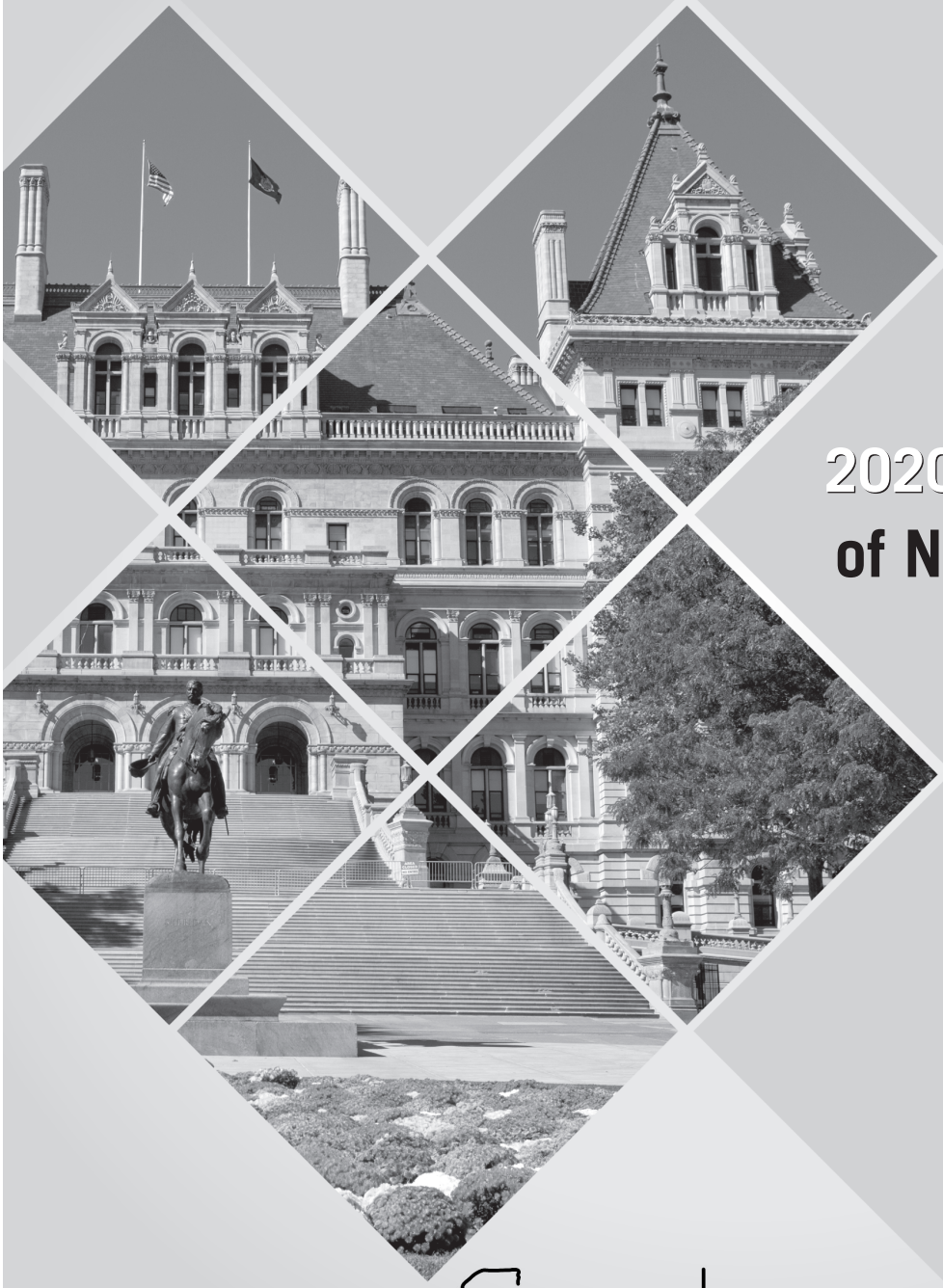

# 2020 PLUMBING CODE of NEW YORK STATE

NEW YORK STATE OF OPPORTUNITY.

Building Standards and Codes

ICC INTERNATIONAL CODE COUNCIL®

2020 Plumbing Code of New York State

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# PREFACE

## Introduction

The *Plumbing Code of New York State* (PCNYS) establishes minimum requirements for plumbing systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new plumbing designs. This 2020 edition was developed as a derivative work of the 2018 edition of the *International Plumbing Code*® (IPC®) published by the International Code Council® (ICC®).

## INTENTION

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

## Letter Designations in Front of Section Numbers

The bracketed letter designations for the party responsible for portions of this code are as follows:

**ICC Code Development Committee**

[A] = Administrative Code Development Committee;

[BE] = IBC—Means of Egress Code Development Committee;

[BG] = IBC—General Code Development Committee;

[BS] = IBC—Structural Code Development Committee;

[E] = International Energy Conservation Code Development Committee;

[F] = International Fire Code Development Committee;

[M] = International Mechanical Code Development Committee; and

**New York State Code Development**

[NY] = New York Department of State

## Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2015 edition of the I-Code®. Deletion indicators in the form of an arrow (➡) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.

A single asterisk [*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [**] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code. The following table indicates such relocations in the 2020 edition of the *Plumbing Code of New York State*.

| 2020 LOCATION | 2015 LOCATION |
|---|---|
| 802.2 | 804.1 |

## Italicized Terms

Words and terms defined in Chapter 2, Definitions, are italicized where they appear in code text and the Chapter 2 definition applies. Where such words and terms are not italicized, common-use definitions apply. The words and terms selected have code-specific definitions that the user should read carefully to facilitate better understanding of the code.

# EFFECTIVE USE OF THE PLUMBING CODE OF NEW YORK STATE

The *Plumbing Code of New York State* (PCNYS) is a code that regulates the design and installation of plumbing systems including the plumbing fixtures in all types of buildings except for detached one- and two-family dwellings and townhouses that are not more than three stories above grade in height. The regulations for plumbing systems in one- and two-family dwellings and townhouses are covered by Chapters 25 through 33 of the *Residential Code of New York State* (RCNYS). The PCNYS addresses general plumbing regulations, fixture requirements, water heater installations and systems for water distribution, sanitary drainage, special wastes, venting, storm drainage and medical gases. The PCNYS does not address fuel gas piping systems as those systems are covered by the *Fuel Gas Code of New York State* (FGCNYS). The PCNYS also does not regulate swimming pool piping systems, process piping systems, or utility-owned piping and systems. The purpose of the PCNYS is to the establish the minimum acceptable level of safety to protect life and property from the potential dangers associated with supplying potable water to plumbing fixtures and outlets and the conveyance of bacteria-laden waste water from fixtures.

The IPC is primarily a specification-oriented (prescriptive) code with some performance-oriented text. For example, Section 405.1 is a performance statement but Chapter 6 contains the prescriptive requirements that will cause Section 405.1 to be satisfied.

Where a building contains plumbing fixtures, those fixtures requiring water must be provided with an adequate supply of water for proper operation. The number of required plumbing fixtures for a building is specified by this code and is based upon the anticipated maximum number of occupants for the building and the type of building occupancy. This code provides prescriptive criteria for sizing piping systems connected to those fixtures. Through the use of code-approved materials and the installation requirements specified in this code, plumbing systems will perform their intended function over the life of the building. In summary, the PCNYS sets forth the minimum requirements for providing safe water to a building as well as a safe manner in which liquid-borne wastes are carried away from a building.

## Arrangement and Format of the 2020 PCNYS

The format of the PCNYS allows each chapter to be devoted to a particular subject with the exception of Chapter 3 which contains general subject matters that are not extensive enough to warrant their own independent chapter.

| Chapters | Subjects |
|---|---|
| 1–2 | Administration and Definitions |
| 3 | General Regulations |
| 4 | Fixtures, Faucets and Fixture Fittings |
| 5 | Water Heaters |
| 6 | Water Supply and Distribution |
| 7 | Sanitary Drainage |
| 8 | Indirect/Special Waste |
| 9 | Vents |
| 10 | Traps, Interceptors and Separators |
| 11 | Storm Drainage |
| 12 | Special Piping (Medical Gas) |
| 13 | Nonpotable Water Systems |
| 14 | Subsurface Landscape Irrigation Systems |
| 15 | Referenced Standards |
| Appendices A–E | Appendices |

The following is a chapter-by-chapter synopsis of the scope and intent of the provisions of the *Plumbing Code of New York State*:

**Chapter 1 Scope and Administration.** This chapter contains provisions for the application, enforcement and administration of subsequent requirements of the code. In addition to establishing the scope of the code, Chapter 1 identifies which buildings and structures come under its purview.

**Chapter 2 Definitions.** Chapter 2 is the repository of the definitions of terms used in the body of the code. Codes are technical documents and every word, term and punctuation mark can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code and the code meaning can differ substantially from the ordinarily understood meaning of the term as used outside of the code.

The terms defined in Chapter 2 are deemed to be of prime importance in establishing the meaning and intent of the code text that uses the terms. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined.

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

Guidance regarding tense, gender and plurality of defined terms as well as guidance regarding terms not defined in this code is provided.

**Chapter 3 General Regulations.** The content of Chapter 3 is often referred to as "miscellaneous," rather than general regulations. This is the only chapter in the code whose requirements do not interrelate. If a requirement cannot be located in another chapter, it should be located in this chapter. Chapter 3 contains safety requirements for the installation of plumbing and nonplumbing requirements for all types of fixtures. This chapter also has requirements for the identification of pipe, pipe fittings, traps, fixtures, materials and devices used in plumbing systems.

The safety requirements of this chapter provide protection for the building's structural members, as well as prevent undue stress and strain on pipes. The building's structural stability is protected by the regulations for cutting and notching of structural members. Additional protection for the building occupants includes requirements to maintain the plumbing in a safe and sanitary condition, as well as privacy for those occupants.

**Chapter 4 Fixtures, Faucets and Fixture Fittings.** This chapter regulates the minimum number of plumbing fixtures that must be provided for every type of building. This chapter also regulates the quality of fixtures and faucets by requiring those items to comply with nationally recognized standards. Because fixtures must be properly installed so that they are usable by the occupants of the building, this chapter contains the requirements for the installation of fixtures. Because the requirements for the number of plumbing fixtures affects the design of a building, Chapter 29 of the *Building Code of New York State* (BCNYS) includes, verbatim, many of the requirements listed in Chapter 4 of this code.

**Chapter 5 Water Heaters.** Chapter 5 regulates the design, approval and installation of water heaters and related safety devices. The intent is to minimize the hazards associated with the installation and operation of water heaters. Although this code does not regulate the size of a water heater, it does regulate all other aspects of the water heater installation such as temperature and pressure relief valves, safety drip pans, installation and connections. Where a water heater also supplies water for space heating, this chapter regulates the maximum water temperature supplied to the water distribution system.

**Chapter 6 Water Supply and Distribution.** This chapter regulates the supply of potable water from both public and individual sources to every fixture and outlet so that it remains potable and uncontaminated. Chapter 6 also regulates the design of the water distribution system, which will allow fixtures to function properly and also help prevent backflow conditions. The unique require-

ments of the water supply for health care facilities are addressed separately. It is critical that the potable water supply system remain free of actual or potential sanitary hazards by providing protection against backflow.

**Chapter 7 Sanitary Drainage.** The purpose of Chapter 7 is to regulate the materials, design and installation of sanitary drainage piping systems as well as the connections made to the system. The intent is to design and install sanitary drainage systems that will function reliably, that are neither undersized nor oversized and that are constructed from materials, fittings and connections as prescribed herein. This chapter addresses the proper use of fittings for directing the flow into and within the sanitary drain piping system. Materials and provisions necessary for servicing the drainage system are also included in this chapter.

**Chapter 8 Indirect/Special Waste.** This chapter regulates drainage installations that require an indirect connection to the sanitary drainage system. Fixtures and plumbing appliances, such as those associated with food preparation or handling, health care facilities and potable liquids, must be protected from contamination that can result from connection to the drainage system. An indirect connection prevents sewage from backing up into a fixture or appliance, thus providing protection against potential health hazards. The chapter also regulates special wastes containing hazardous chemicals. Special waste must be treated to prevent any damage to the sanitary drainage piping and to protect the sewage treatment processes.

**Chapter 9 Vents.** Chapter 9 covers the requirements for vents and venting. Knowing why venting is required makes it easier to understand the intent of this chapter. Venting protects every trap against the loss of its seal. Provisions set forth in this chapter are geared toward limiting the pressure differentials in the drainage system to a maximum of 1 inch of water column (249 Pa) above or below atmospheric pressure (i.e., positive or negative pressures).

**Chapter 10 Traps, Interceptors and Separators.** This chapter contains design requirements and installation limitations for traps. Prohibited types of traps are specifically identified. Where fixtures do not frequently replenish the water in traps, a method is provided to ensure that the water seal of the trap will be maintained. Requirements for the design and location of various types of interceptors and separators are provided. Specific venting requirements are given for separators and interceptors as those requirements are not addressed in Chapter 9.

**Chapter 11 Storm Drainage.** Chapter 11 regulates the removal of storm water typically associated with rainfall. The proper installation of a storm drainage system reduces the possibility of structural collapse of a flat roof, prevents the leakage of water through the roof, prevents damage to the footings and foundation of the building and prevents flooding of the lower levels of the building.

**Chapter 12 Special Piping and Storage Systems.** This chapter contains the requirements for the design, installation, storage, handling and use of nonflammable medical gas systems, including inhalation anesthetic and vacuum piping systems, bulk oxygen storage systems and oxygen-fuel gas systems used for welding and cutting operations. The intent of these requirements is to minimize the potential fire and explosion hazards associated with the gases used in these systems.

**Chapter 13 Nonpotable Water Systems.** This chapter regulates the design and installation of nonpotable water systems. The reduction of potable water use in buildings has led building designers in some jurisdictions to use nonpotable water for irrigation and flushing of water closets and urinals. This chapter provides the overall requirements for these systems.

**Chapter 14 Subsurface Landscape Irrigation Systems.** This chapter regulates the design and installation of subsurface landscape irrigation systems for the disposal of on-site nonpotable water such as graywater. The reduction of potable water use in buildings has led building designers in some jurisdictions to use on-site nonpotable water for irrigation. This chapter provides the overall requirements for these systems.

**Chapter 15 Referenced Standards.** Chapter 15 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard. Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements neces-

sary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the building official, contractor, designer and owner.

Chapter 15 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard. Each agency's standards are then listed in either alphabetical or numeric order based upon the standard identification. The list also contains the title of the standard; the edition (date) of the standard referenced; any addenda; and the section or sections of this code that reference the standard.

**Appendix A Reserved.**

**Appendix B Rates of Rainfall for Various Cities.** This appendix is informative and not part of the code. Appendix B provides specific rainfall rates for major cities in the United States.

**Appendix C Structural Safety.** Appendix C is provided so that the user does not have to refer to another code book for limitations for cutting, notching and boring of sawn lumber and cold-formed steel framing.

**Appendix D Degree Day and Design Temperatures.** This appendix provides valuable temperature information for designers and installers of plumbing systems in areas where freezing temperatures might exist.

**Appendix E Sizing of Water Piping System.** This appendix is informative and not part of the code. Appendix E provides two recognized methods for sizing the water service and water distribution piping for any structure. The method under Section E103 provides friction loss diagrams which require the user to "plot" points and read values from the diagrams in order to perform the required calculations and necessary checks. This method is the most accurate of the two presented in this appendix. The method under Section E201 is known to be conservative; however, very few calculations are necessary in order to determine a pipe size that satisfies the flow requirements of any application.

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