



2021 Uniform Mechanical Code®

AN AMERICAN NATIONAL STANDARD | IAPMO/ANSI UMC 1 – 2021

**READ ME
TABLE OF CONTENTS**



2021 UNIFORM MECHANICAL CODE®

An American National Standard
IAPMO/ANSI UMC 1 – 2021



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The 2021 edition of the *Uniform Mechanical Code* is developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on mechanical issues. While the International Association of Plumbing and Mechanical Officials (IAPMO) administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in its codes and standards.

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In order to determine whether an IAPMO code has been amended through the issuance of Tentative Interim Amendments or corrected by Errata, please visit the IAPMO Group codes information pages on IAPMO's website (www.iapmo.org). The codes information pages provide a list of IAPMO codes with up-to-date, specific information including any issued Tentative Interim Amendments and Errata.

To access the codes information pages for a specific code, go to <http://codes.iapmo.org> to select from the list of IAPMO codes. For Tentative Interim Amendments, go to the standard council decisions. For Errata, select the archived revision information.

FOREWORD

Origin and Development

The industry has long recognized the advantages of a statewide adopted mechanical code. The first edition of the *Uniform Mechanical Code*[®] (UMC[®]) was adopted by IAPMO in 1967. The widespread use of this code over the past five decades by jurisdictions throughout the United States and internationally is testament to its merit.

Publishing of the 2003 *Uniform Mechanical Code* was a significant milestone because it was the first time in the history of the United States a mechanical code was developed through a true consensus process. The 2021 edition represents the most current approaches in the mechanical field and is the seventh edition developed under the ANSI consensus process. Contributions to the content of this code consists of diverse interests as consumers, enforcing authorities, installers/maintainers, labor, manufacturers, research/standards/testing laboratories, special experts, and users.

The *Uniform Mechanical Code* provides consumers with complete requirements for the installation and maintenance of heating, ventilating, cooling, and refrigeration systems, while, at the same time, allowing latitude for innovation and new technologies. The public at large is invited and encouraged to take part in IAPMO's open consensus code development process. This code is updated every three years. The *Uniform Mechanical Code* is dedicated to all those who, in working to achieve "the ultimate mechanical code," have unselfishly devoted their time, effort, and personal funds to create and maintain this, the finest mechanical code in existence today.

The *Uniform Mechanical Code* updates every three years in revision cycles that begin twice each year that takes two years to complete.

Each revision cycle advances according to a published schedule that includes final dates for all major events and contains four basic steps as follows:

1. Public and Committee Proposal Stage;
2. Comment Stage;
3. Association Technical Meeting;
4. Council Appeals and Issuance of Code.

IAPMO develops "full consensus" codes built on a foundation of maximum participation and agreement by a broad range of interests. This philosophy has led to producing technically sound codes that promote health and safety, yet do not stifle design or development.

It is important to stress that the process remains committed to the principles of consensus code development where consensus Technical Committees and Correlating Committees revise codes. The public and membership is offered multiple opportunities to debate, provide input and raise concerns through Amending Motions at the annual Assembly Consideration Session. Anyone may submit an appeal related to the issuance of a document through the IAPMO Standards Council.

The 2021 *Uniform Mechanical Code* is supported by the Mechanical Contractors Association of America (MCAA), the Plumbing-Heating-Cooling Contractors National Association (PHCC-NA), the United Association (UA), and the World Plumbing Council (WPC). The presence of these logos, while reflecting support, does not imply any ownership of the copyright to the UMC, which is held exclusively by IAPMO. Further, the logos of these associations indicate the support of IAPMO's open consensus process being used to develop IAPMO's codes and standards.

The addresses of the organizations are as follows:

ASSE – 18927 Hickory Creek Drive, Suite 220 • Mokena, IL 60448 • (708) 995-3019

MCAA – 1385 Piccard Drive • Rockville, MD 20850 • (301) 869-5800

PHCC-NA – PO Box 6808 • Falls Church, VA 22040-6808 • (800) 533-7694

RPA – 18927 Hickory Creek Drive, Suite 220 • Mokena, IL 60448 • (877) 427-6601

UA – Three Park Place • Annapolis, MD 21401 • (410) 269-2000

WPC – World Plumbing Council Secretariat, Auf der Mauer 11 • Postfach CH 8021 • Zurich
Switzerland • www.WorldPlumbing.org

Adoption

The *Uniform Mechanical Code* is available for adoption and use by jurisdictions in the United States and Internationally. Its use within a governmental jurisdiction is accomplished through adoption by reference in accordance with applicable jurisdictional laws. At adoption, jurisdictions should insert the applicable information in bracketed words in the sample ordinance. The sample legislation for adoption of the *Uniform Mechanical Code* on page xi provides key components, regulations and resolutions.

Revision Markings

Solid vertical lines in the margins indicate a technical change from the requirements of the 2018 edition. An arrow (←) in the margin indicates where an entire section, paragraph, exception, figure, or table has been deleted, or an item in a list of items or a table has been deleted.

A double right angle (◀) in the margin indicates that the text or a table has been relocated within the code. The table found on page xiii points out the relocations in the 2021 edition of the *Uniform Mechanical Code*.

TIA TIA indicates that the revision is the result of a Tentative Interim Amendment.
TIA For further information on tentative interim amendments see Section 5 of the IAPMO
TIA Regulations Governing Committee Projects available at <http://codes.iapmo.org/>

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another document. A reference in brackets { } following a section or paragraph indicates material that has been extracted from another document and has been modified further by the Technical Committee. This reprinted material is not the complete and official position of the source document on the referenced subject that is represented by the standard in its entirety. Material contained in this document that is taken or extracted from NFPA standards is used with permission of the National Fire Protection Association. This material is not the complete and official position of the NFPA on the reference subject, which is represented solely by the relevant standard in its entirety. NFPA standards can be accessed at www.nfpa.org. In addition, this extracted material may include revisions or modifications developed through IAPMO's standards development process. Therefore, NFPA disclaims responsibility for the content of this Code.

Text that is extracted pursuant to IAPMO's Extract Guidelines, but outside of the regular revision process is denoted with the use of the source document in the margin. This text is not fully processed by IAPMO in accordance with ANSI's public announcement consensus requirements for an American National Standard (ANS) nor approved by ANSI's Board of Standards Review. The next revision cycle processes such text in accordance with those requirements.

FORMAT OF THE UNIFORM MECHANICAL CODE

The format of the *Uniform Mechanical Code* (UMC) arranges each chapter in accordance with a specific subject matter. However, Chapter 3 is dedicated to general requirements that are applicable to every chapter. The subject matters are divided as follows:

CHAPTERS	SUBJECTS
1	Administration
2	Definitions
3	General Regulations
4	Ventilation Air
5	Exhaust Systems
6	Duct Systems
7	Combustion Air
8	Chimneys and Vents
9	Installation of Specific Appliances
10	Boilers and Pressure Vessels
11	Refrigeration
12	Hydronics
13	Fuel Gas Piping
14	Process Piping
15	Solar Energy Systems
16	Stationary Power Plants
17	Referenced Standards
Appendix A	Residential Plans Examiner Review Form for HVAC System Design
Appendix B	Procedures to be Followed to Place Gas Equipment in Operation
Appendix C	Installation and Testing of Oil (Liquid) Fuel-Fired Equipment
Appendix D	Fuel Supply: Manufactured/Mobile Home Parks and Recreational Vehicle Parks
Appendix E	Sustainable Practices
Appendix F	Geothermal Energy Systems
Appendix G	Sizing of Venting Systems and Outdoor Combustion and Ventilation Opening Design
Appendix H	Example Calculation of Outdoor Air Rate

The following is a summary of the scope and intent of the provisions addressed within the chapters and appendices of the *Uniform Mechanical Code*:

Chapter 1 Administration.

Chapter 1 regulates the application, enforcement, and administration of subsequent requirements of the code. As well as establishing the scope of the code, this chapter is concerned with enforcing the requirements contained in the body of the code. A mechanical code, as with any other code, is intended to be adopted as a legally enforceable document to safeguard health, safety, property and public welfare. The code cannot be effective without satisfactory provisions for its administration and enforcement. The Authority Having Jurisdiction is to review the proposed and completed work and to decide whether a mechanical system conforms to the code requirements. As a public servant, the Authority Having Jurisdiction enforces the code in an unbiased, proper manner. The design professional is responsible for the design of a safe mechanical system. The contractor is responsible for installing the system in accordance with the plans.

Chapter 2 Definitions.

To maintain consistency and encourage the use of common terminology, Chapter 2 establishes definitions to provide clarity of terms and promote the use of a common language throughout the code. Understanding definitions within the context of their application enables greater collaboration, efficiency, standardization and interpretation in applying and enforcing terms used throughout the code. Codes are technical documents, and every term can impact the meaning of the code text. Terms not defined have a normally accepted meaning.

Chapter 3 General Regulations.

Chapter 3 regulates the general requirements, not specific to other chapters, for installing mechanical systems. Many regulations are not specific mechanical requirements, but relate to the overall mechanical system. This chapter contains safety requirements for appliance location and installation, appliance and system access, condensate disposal, and clearances to combustibles, and return or outside air used in mechanical systems. Listing method of approval, based on applicable nationally recognized standards, for the safe and proper installation of mechanical systems is essential to ensure protection of public health, safety, and welfare. The safety requirements provide protection for piping, material, and structures, with provisions for installation practices, removing stress and strain of the pipe, sleeving, and hanger support. The building's structural stability is protected by the regulations for cutting and notching of structural members.

Chapter 4 Ventilation Air.

Chapter 4 regulates the minimum requirements for ventilation air supply, exhaust, and makeup air for spaces within a building. Building ventilation is one important factor affecting the relationship between airborne transmission of respiratory infections and the health and productivity of workers. Ventilation air may be composed of mechanical or natural ventilation, infiltration, recirculated air, transfer air, or a suitable combination of that. Providing a comfortable and healthy indoor environment for building occupants is of primary concern. When considering how much ventilation should be supplied, typical and unusual significant sources of indoor pollution need to be controlled. Areas such as kitchens, bathrooms, and laundries are all built to allow specific functions. These spaces produce pollutants such as moisture, odors, volatile organic compounds, particles, or combustion byproducts. The purpose of local exhaust is to control concentrates of these pollutants in the room into which they were emitted in and to reduce the spread of the pollutants into other parts of the occupancy. Local exhaust ventilation is the source control for pollution that is expected in certain rooms. Using local exhaust to extract contaminants before they can mix with the indoor environment is essential.

Chapter 5 Exhaust Systems.

Chapter 5 regulates the minimum requirements for exhaust systems. Chapter 5 contains two parts: part I provides exhaust requirements for environmental air ducts and product conveying ducts; part II provides exhaust requirements for commercial kitchens. Environmental air ducts include exhaust ducts used for transporting the air from domestic kitchens, bathrooms, and clothes dryers. Systems that carry nonabrasive exhaust, such as smoke, moderately abrasives such as sawdust, and high abrasives such as manganese or acid vapors use product-conveying ducts. Part II provides the minimum fire safety requirements related to the design, installation, inspection, and maintenance of grease-type operations, such as cooking, for both fuel-gas and solid fuel. Cooking produces a significant amount of smoke, fumes, vapors, heat, and other pollutants. Therefore, acceptable kitchen ventilation is necessary to provide the occupants protection from smoke, unpleasant odors, pollutants, dangerous gases, and to prevent fires from the build-up of grease. There are two types of exhaust hoods (Type I and Type II) used in commercial kitchen applications. Type I hoods are intended to be installed above equipment or

FORMAT OF THE UNIFORM MECHANICAL CODE

appliances that generate grease or smoke. Type II hoods are intended to be installed above equipment or dishwashers that generate steam, heat, or products of combustion, or where grease or smoke is not present. Type II hood exhaust system requirements are addressed in Section 519.0.

Chapter 6 Duct Systems.

Chapter 6 regulates requirements for ducts and plenums that are portions of a heating, cooling, absorption or evaporative cooling, or exhaust system. This chapter contains material and installation requirements for metal, gypsum, factory-made, flexible, and plastic ducts. It also contains fire protection requirements, smoke dampers, and automatic shutoff for the building's air distribution system.

Chapter 7 Combustion Air.

Chapter 7 regulates combustion air requirements for the ventilation and dilution of flue gases for appliances installed in buildings. It applies to fuel-gas appliances except for direct vent appliances and clothes dryers. Chapter 5 provides makeup air for clothes dryers. Chapter 7 provides acceptable methods for supplying satisfactory combustion air to ensure proper combustion. Combustion air can be supplied by using indoor combustion air or by introducing the air from the outdoors.

Combustion is the rapid oxidation of fuel to release energy. The oxygen required to release the energy from the fuel normally comes from the air. Incomplete combustion of fuel occurs when inadequate oxygen is provided to the appliance. Combustion is needed to provide ventilation cooling for the casing and internal controls. When a lack of oxygen occurs, some of the carbon is not oxidized, and carbon monoxide forms.

Chapter 8 Chimneys and Vents.

Chapter 8 regulates the installation, design, and construction of venting systems for fuel-burning appliances. The provisions addressed within this chapter follow procedures an installer would use to design or evaluate a venting system. Many requirements apply to the design and construction of venting systems, chimneys, installation of gas vents, and the sizing of venting system for a Category I appliance. Sizing venting systems require rigorous engineering calculations. However, the venting sizing requirements and sizing tables in this chapter already perform the calculations for the benefit of the end user.

Combustion appliances produce products of incomplete combustion, including potentially harmful carbon monoxide (CO). It is desirable to vent these products to the outdoors. Although the gas is clean-burning fuel, the products of combustion must not be allowed to collect within a building.

Chapter 9 Installation of Specific Appliances.

Chapter 9 regulates the minimum requirements for the design, construction and installation of specific appliances. The provisions address the minimum requirements for gas-fired appliances, oil-fired appliances, wood-fired appliances, and electric-type appliances. In addition to the requirements of this chapter, appliances are also required to comply with the general requirements of Chapter 3.

Chapter 10 Boilers and Pressure Vessels.

Chapter 10 regulates the construction, installation, operation, repair, and alteration of boilers and pressure vessels. A low-pressure boiler provides steam at a pressure that does not exceed 15 psig, a gauge pressure more than 160 psi (1103 kPa) or heats water to a temperature more than 250°F (121°C). Potable water heaters are free from the requirements of Chapter 10 as they are within the scope of the Uniform Plumbing Code (UPC).

Pressure vessels store large amounts of energy and must comply with ASME Boiler and Pressure Vessel Code (BPVC) Section VIII. The stored energy must be contained to prevent disastrous failures. Boilers must comply with ASME BPVC Section I, ASME BPVC Section IV, or NFPA 85. Installing a safety relief valve and expansion tank prevents pressures in the tank from exceeding the design threshold.

Chapter 11 Refrigeration.

Chapter 11 regulates the design, installation, and construction requirements of refrigeration systems and the installation and construction of cooling towers. Refrigeration is a method used for achieving heat transfer to cool spaces. Refrigerants are the most common medium used to transfer the heat energy from the low-temperature level to the high-temperature level. Table 1102.3 lists the most commonly used refrigerants and is labeled by a number. The concentration limits provided in Table 1102.3 are useful for the quantity of refrigerant required to cool a volume of space safely.

A major milestone reached in the industry was the introduction of lower flammability refrigerants such as A2L and B2L. The industry's concerns to address lower Global Warming Potential (GWP) refrigerants led to the development of these lower flammability refrigerants. Chapter 11 does not only include these lower flammability refrigerants in Table 1102.3, but it also contains specific A2L and B2L provisions to address the precautions necessary for the proper use of these products.

In addition, Chapter 11 addresses other minimum requirements for refrigeration systems such as refrigeration machinery rooms (including ventilation), relief valves, and pressure vessels. Apart from refrigerants, the chapter also addresses minimum requirements for systems that use other mediums such as ammonia and brine systems. For ammonia systems, such systems are required to comply with IAR 2, IAR 3, IAR4, and IAR 5.

Chapter 12 Hydronics.

Chapter 12 regulates hydronic systems that are part of heating, cooling, ventilation, and conditioning systems. Such piping systems include steam, hot water, chilled water, steam condensate, and the ground source heat pumps systems. The ground source heat pumps provisions in this chapter apply to the hydronic portions of the system. It is worth noting Appendix F addresses added provisions for ground source heat pumps for geothermal energy systems.

Materials for piping and tubing must meet the working temperature and pressure of the system. In addition, materials must be compatible with the transfer medium to prevent deformation, bursting, or any chemical action between the material and the transfer medium. The allowable joining methods for piping or tubing are provided for application and enforcement purposes.

Chapter 13 Fuel Gas Piping.

Chapter 13 regulates gas piping systems in a building, structure or within the property lines of buildings up to 5 psi. Gas piping systems must supply the minimum volume of gas required by each gas appliance to perform their proper operation under working conditions without exceeding the maximum pressure specified by each manufacturer. Because of the hazards associated with fuel gas, it is important to ensure the gas system has been inspected and tested, and that it is safe to turn on the gas supply to the building.

Chapter 14 Process Piping.

Chapter 14 regulates process piping that typically is found in refineries. Process piping is considered the piping or tubing portion that transports liquid or gas, which is used directly in research, laboratory, or production process. This chapter may be used with another chapter of the code. For example, refrigeration piping, fuel gas piping, or fuel oil piping may need to comply with this chapter for process piping and the applicable chapter for materials, design, and installation.

Chapter 15 Solar Energy Systems.

Chapter 15 refers the user to the Uniform Solar, Hydronics and Geothermal Code (USHGC) for installations about solar energy systems. Reference is also made to Section 1203.0 as the heat source provisions are applicable to solar energy systems.

Chapter 16 Stationary Power Plants.

This chapter provides minimum requirements for stationary fuel cell power plants. A fuel cell is a device that produces electricity by a chemical reaction. Fuel cells have been used mostly for satellites. However, the costs of fuel cells have decreased to a point where they are now economically attainable. With the increase in electricity costs, fuel cells are being considered as an alternative for producing electricity.

Chapter 17 Referenced Standards.

Chapter 17 provides two comprehensive tables with referenced standards. The standards listed in Table 1701.1 are applied as indicated in the applicable reference section(s). A list of additional approved standards, publications, practices, and guides that are not referenced in specific sections appear in Table 1701.2.

Referenced standards set forth specific details of accepted practices, materials specifications, or test methods in many specialized applications. Standards provide an efficient method of conveying complex information and specifications on the performance requirements for materials, products, systems, application, and installation. The manner and purpose for a standard's use and, in turn, code compliance, must be definitive in all references to the standard. If the standard is intended to

FORMAT OF THE UNIFORM MECHANICAL CODE

be a requirement for judging code compliance, the code must state its intent for use. The standard should adequately address a defined need and at the same time specify the minimum performance requirements, technical characteristics and methods of testing, and required test results.

The referenced standards tables are organized in a manner that makes it easy to find specific standards in alphabetical order, and by acronym of the publishing agency of the standard. The tables list the title of the standard, the edition, and any addenda. Contact information for each publishing agency is provided at the end of the chapter.

Appendix A Residential Plans Examiner Review Form for HVAC System Design.

A residential plans examiner review form is located in this appendix as an example to assist users in identifying whether the HVAC system has followed the approved procedures for system design (loads, equipment, and ducts).

Appendix B Procedures to be Followed to Place Gas Equipment in Operation.

Appendix B provides requirements for the procedures that apply after an appliance is installed in place, piped, and connected to its venting system. The requirements include adjusting the burner input, air adjustments, verifying operation of safety shutoffs, automatic ignition, and protective devices, checking draft for vent-connected appliances, and operating instructions.

Appendix C Installation and Testing of Oil (Liquid) Fuel-Fired Equipment.

Appendix C governs the installation, testing, or repair of oil or liquid fuel-burning equipment used in buildings or structures and equipment.

Appendix D Fuel Supply: Manufactured/Mobile Home Parks and Recreational Vehicle Parks.

The provisions of this appendix apply to the fuel gas piping systems of mobile home and recreational vehicle parks. These provisions also apply to the use, maintenance, and installation for supplying fuel gas for accessory buildings or structures, and building components.

Appendix E Sustainable Practices.

This appendix provides a comprehensive set of technically sound provisions that encourage sustainable practices and works toward improving the design and construction of mechanical systems that result in a positive long-term environmental impact. Environmental sustainability is important because it involves natural resources that human beings need for economic or manufactured capital. Their sustainability is defined by their reliance on infinitely available resources that are naturally occurring, constant, and free to access.

Appendix F Geothermal Energy Systems.

Appendix F regulates the design, installation, construction and location of geothermal energy systems. In order to properly design a geothermal system, it is important to know the seasonal variation in the soil temperature, as well as the soil's inherent capability to store and transmit heat, namely its heat capacity and thermal conductivity.

Materials for piping and tubing must meet the working temperature and pressure of the system. In addition, materials must be compatible with the transfer medium to prevent deformation, bursting, or any chemical action between the material and the transfer medium. The allowable joining methods for piping or tubing are provided for application and enforcement purposes.

Appendix G Sizing of Venting Systems and Outdoor Combustion and Ventilation Opening Design.

Appendix G provides added information on the sizing of gas vents. This appendix is useful to the end user for the proper sizing of venting systems. A series of examples are given that show how to use the tables and other requirements of Chapter 8. In addition, Appendix G shows an example of how to determine the required combination of indoor and outdoor combustion air opening sizes for appliances under Chapter 7. The combustion air example also provides a table that contains the required volume of space per the appliance Btu/h input based on the standard method.

Appendix H Example Calculation of Outdoor Air Rate.

Appendix H gives an example of how to calculate the required outdoor air rate under Chapter 4.

SAMPLE LEGISLATION FOR ADOPTION OF THE UNIFORM MECHANICAL CODE

The Uniform Codes are designed to be adopted by jurisdictions through an ordinance. Jurisdictions wishing to adopt the 2021 *Uniform Mechanical Code* as an enforceable regulation governing mechanical systems by reference should ensure the legal basis under which adoption and implementation are included in the ordinance.

The following sample ordinance is a guide for drafting an ordinance for adoption that addresses key components regulations and resolutions.

ORDINANCE NO.

An ordinance of the [JURISDICTION] adopting the 2021 edition of the *Uniform Mechanical Code*, regulating and controlling the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of mechanical systems in the [JURISDICTION]; providing for the issuance of permits and collection of fees therefor; repealing Ordinance No. of the [JURISDICTION] and all other ordinances and parts of the ordinances in conflict therewith.

The [GOVERNING BODY] of the [JURISDICTION] does ordain as follows:

Section 1 Codes Adopted by Reference. That certain documents, three (3) copies of which are on file in the office of the [JURISDICTION'S KEEPER OF RECORDS] and the [JURISDICTION], being marked and designated as the 2021 *Uniform Mechanical Code*, including Appendix Chapters [FILL IN THE APPENDIX CHAPTERS BEING ADOPTED], as published by the International Association of Plumbing and Mechanical Officials, be and is hereby adopted as the Code of the [JURISDICTION], in the State of [STATE NAME] regulating and controlling the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of mechanical systems as herein provided; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of such 2021 *Uniform Mechanical Code* on file in the office of the [JURISDICTION] are hereby referred to, adopted, and made a part hereof, as if fully set out in this ordinance.

Section 2 Modifications. The following sections are hereby revised:

Section 101.1. Insert: [NAME OF JURISDICTION]

Section 104.5. Insert: [APPROPRIATE FEE SCHEDULE]

Section 3 Conflicting Ordinances Repealed. That Ordinance No. of [JURISDICTION] entitled [TITLE OF THE ORDINANCE OR ORDINANCES IN EFFECT AT THE PRESENT TIME SO THAT THEY WILL BE REPEALED BY MENTION] and all other ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 4 Preemption. [JURISDICTION] hereby fully occupies and preempts the entire field of regulation of design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of mechanical systems; and provision for the issuance of permits and collection of fees therefor; within the boundaries of [JURISDICTION]. [AS APPROPRIATE] Cities, towns, and counties or other municipalities may enact only those laws and ordinances relating to this field as specifically authorized by state law and consistent with this ordinance. Local laws and ordinances that are inconsistent with, more restrictive than, or exceed the requirements of [ORDINANCE NO.] shall not be enacted and are hereby expressly preempted and repealed, regardless of the nature of the code, charter, or home rule status of such city, town, county, or municipality.

Section 5 Severability. That if any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The [GOVERNING BODY] hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

Section 6 Legal Notice. That the [JURISDICTION'S KEEPER OF RECORDS] is hereby ordered and directed to cause this ordinance to be published. (An additional provision may be required to direct the number of times the ordinance is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.)

Section 7 Violations and Penalties. [INCORPORATE PENALTIES FOR VIOLATIONS]

Section 8 Effective Date. That this ordinance and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect [TIME PERIOD] from and after the date of its final passage and adoption.

COMMITTEE ON UNIFORM MECHANICAL CODE

These lists represent the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred.

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CJ Erickson Plumbing Company [U]

JT Baca, State of New Mexico [E]

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James Majerowicz, Plumbers JAC LU 130 [L]

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Ron Rice, City of St. Paul, Retired [C]

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April Trafton, Donald Dickerson & Associates [SE]

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Air-Conditioning Engineers (ASHRAE) [R/S/T]

Chris Van Rite, Air Distribution Institute (ADI) [M]

Randy Young, Northern CA Valley Sheet Metal Industry JATC [L]

Alternates

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Michael Cudahy, Plastic Pipe & Fittings Association (PPFA) [M]

Micah Dawson, Air Distribution Institute (ADI) [M]

Mat Hattich, UA Local 342 [L]

David Ledda, City/County of San Francisco, CA [E]

Tim Orris, Air Movement and Control Association International
(AMCA) [R/S/T]

James Pavesic, United Association [L]

Chris Ruch, National Energy Management Institute (NEMI) [R/S/T]

Robert Sewell, Plumbers & Steamfitters Local 159 [L]

Jason Shelton, Air Duct Council [M]

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Zalmie Hussein, IAPMO Staff Liaison

Laura Moreno, NFPA [R/S/T]

David Straub, Ex-Officio IAPMO [E]

COMMITTEE MEMBERSHIP CLASSIFICATION ABBREVIATIONS

These classifications apply to Technical Committee members and represent their principal interest in the activity of a committee.

- M** *Manufacturer*: A representative of a maker or marketer of a product, assembly or system, or portion thereof, that is affected by the standard.
- U** *User*: A representative of an entity that is subject to the provisions of the standard or that voluntarily uses the standard.
- I/M** *Installer/Maintainer*: A representative of an entity that is in the business of installing or maintaining a product, assembly or system affected by the standard.
- L** *Labor*: A labor representative or employee concerned with safety in the workplace.
- R/S/T** *Research/Standards/Testing Laboratory*: A representative of an independent research organization; an organization that develops codes, standards or other similar documents; or an independent testing laboratory.
- E** *Enforcing Authority*: A representative or an agency or an organization that promulgates and/or enforces standards.
- C** *Consumer*: A person who is, or represents, the ultimate purchaser of a product, system, or service affected by the standard, but who is not included in the User classification.
- SE** *Special Expert*: A person not representing any of the previous classifications, but who has special expertise in the scope of the standard or portion thereof.

SECTION RELOCATION

2021 Location	2018 Location
206.0 Ceiling Radiation Damper	205.0 Ceiling Radiation Damper
206.0 Combination Fire/Smoke Damper	205.0 Combination Fire and Smoke Damper
305.2	303.13
305.3 – 305.5	305.2 – 305.4
402.1.2	402.1.3
403.5.1	403.5.3
403.5.1.2	403.5.2
403.5.2	403.5.4
507.2.1 – 507.2.6	507.2(1) – 507.2(6)
508.2.3, 508.2.4	508.2.2, 508.2.3
510.3.6.1	510.3.6 Exception
510.3.6.2	510.3.6.1
512.3.3	512.3.1
512.3.5	512.3.2
513.1.2	513.1.1
513.2.5.2 – 513.2.5.7	513.2.5.1 – 513.2.5.6
513.3.4, 513.3.5	513.3.1, 513.3.2
513.7	513.8
513.8 – 513.12	513.9 – 513.13
514.4.2 – 514.4.15	514.4.1 – 514.4.14
602.4.1, 602.4.2	602.4, 602.5
602.5, 602.6	602.7, 602.8
603.3.1	603.3.3
603.4	603.5
603.5 – 603.7	603.6 – 603.8
603.7.1.1 – 603.7.1.5	603.3.1 – 603.3.2.3
603.8, 603.9	603.9, 603.10
Table 603.9.1	Table 603.10
603.9.2	603.10.1
603.10 – 603.12	603.11 – 603.13
603.13.2 – 603.13.3	904.2.7 – 904.2.8
603.13.4	903.2.5
603.13.6	931.5.5
604.1 – 604.4	904.7 – 904.7.3
605.0 – 609.1	604.0 – 608.1
802.3.4	802.3.4.1
802.6.1(2) – 802.6.1(7)	802.6.1.1 – 802.6.1.6
802.6.1.1	802.6.1.7
802.7.4(1) – 802.7.4(3)	802.7.4.1 – 802.7.4.3
903.2.5, 904.2.6	903.2.6, 904.2.7
904.2.7	904.2.9

2021 Location	2018 Location
904.7 – 904.13	904.8 – 904.14
914.3.1, 914.3.2	914.3.2, 914.3.3
920.4.3	920.4.4
1217.6	1217.5.3
1217.7 - 1217.8.2	1217.5.4 - 1217.6.2
1220.4 – 1220.5	1220.2 – 1220.3
Table 1220.4.1	Table 1220.2.1
1308.5.3.2 – 1308.5.3.5	1308.5.3.1 – 1308.5.3.4
Table 1308.5.6.2	Table 1308.5.7.2
1308.5.6 – 1308.5.7.1	1308.5.7 – 1308.5.8.2
1308.5.7.4, 1308.5.7.5	1308.5.8.3, 1308.5.8.4
1308.5.8 – 1308.5.10.5	1308.5.9 – 1308.5.11.5
1308.7.6, 1308.7.7	1308.7.7, 1308.7.8
1308.10.6	1308.7.6
1308.11 – 1308.14.1	1308.10 – 1308.13.1
1310.3	1310.2
1310.3.1	1308.5.6
1310.3.2 – 1310.10.1.1, Table 1310.3.5.1	1310.2.1 – 1310.9.1.1, Table 1310.2.4.1
1310.3.3	1310.2.2
1310.3.3.1	1310.2.2.1
1310.3.4	1310.2.3
1310.3.5	1310.2.4
1310.3.5.1	1310.2.4.1
1311.4 – 1311.7.1	1311.3 – 1311.6.1
E 503.5.3(3)	E 503.5.3.1
E 503.5.11.1	E 503.5.11.1.1
E 503.5.11.2 – E 503.5.11.2.3	E 503.5.11.1 – E 503.5.11.2.2
F 101.4	E 505.4
F 101.10	E 508.11
F 101.11	E 508.12
F 101.5 – F 101.9	E 508.5 – E 508.9
F 104.2	E 505.5
Table F 104.2	Table E 505.5
F 104.3	E 505.6
Table F 104.3	Table E 505.6
F 106.0 – F 106.8	E 507.0 – E 507.8
F 108.16	E 509.2
F 109.3	E 508.10
Appendix G	Appendix F
Appendix H	Appendix G

TABLE OF CONTENTS

CHAPTER 1	ADMINISTRATION 1		
101.0	General 1	107.2	Limitations of Authority 6
101.1	Title 1	Table 104.5	Mechanical Permit Fees 7
101.2	Scope 1	CHAPTER 2	DEFINITIONS 9
101.3	Purpose 1	201.0	General 9
101.4	Unconstitutional 1	201.1	Applicability 9
101.5	Validity 1	202.0	Definition of Terms 9
102.0	Applicability 1	202.1	General 9
102.1	Conflicts Between Codes 1	CHAPTER 3	GENERAL REGULATIONS 23
102.2	Existing Installations 1	301.0	General 23
102.3	Maintenance 1	301.1	Applicability 23
102.4	Additions, Alterations, Renovations, or Repairs 1	301.2	Approval 23
102.5	Health and Safety 1	301.3	Design of Equipment 23
102.6	Changes in Building Occupancy 1	301.4	Electrical Connections 23
102.7	Moved Structures 1	301.5	Oil-Burning Appliances 23
102.8	Appendices 1	301.6	Personnel Protection 23
103.0	Duties and Powers of the Authority Having Jurisdiction 2	302.0	Materials – Standards and Alternates 23
103.1	General 2	302.1	Minimum Standards 23
103.2	Liability 2	302.2	Alternate Materials and Methods of Construction Equivalency 23
103.3	Applications and Permits 2	302.3	Alternative Engineered Design 24
103.4	Right of Entry 2	303.0	Installation 24
104.0	Permits 2	303.1	Listed Appliances 24
104.1	Permits Required 2	303.2	Closet or Alcove Installations 24
104.2	Exempt Work 2	303.3	Unlisted Appliances 24
104.3	Application for Permit 2	303.4	Anchorage of Appliances 24
104.4	Permit Issuance 3	303.5	Movement 25
104.5	Fees 4	303.6	Identification of Equipment 25
105.0	Inspections and Testing 4	303.7	Liquefied Petroleum Gas Facilities 25
105.1	General 4	303.8	Appliances on Roofs 25
105.2	Required Inspections 4	303.9	Avoiding Strain on Gas Piping 25
105.3	Testing of Systems 5	303.10	Clearances 25
105.4	Connection to Service Utilities 5	303.11	Installation in Commercial Garages 26
106.0	Violations and Penalties 5	303.12	Installation in Aircraft Hangars 26
106.1	General 5	304.0	Accessibility for Service 26
106.2	Notices of Correction or Violation 5	304.1	General 26
106.3	Penalties 5	304.2	Sloped Roof 26
106.4	Stop Orders 5	304.3	Access to Appliances on Roofs 26
106.5	Authority to Disconnect Utilities in Emergencies 6	304.4	Appliances in Attics and Under-Floor Spaces 26
106.6	Authority to Condemn 6		
107.0	Board of Appeals 6		
107.1	General 6		

TABLE OF CONTENTS

305.0	Location	26	314.0	Balancing	30
305.1	Installation in Residential Garages	26	314.1	General	30
305.2	Pit Location	27	315.0	Louvers in Hurricane Prone Regions	30
305.3	Flood Hazard Areas	27	315.1	General	30
305.4	Elevator Shaft	27	316.0	Protection of Piping, Tubing, Materials, and Structures	31
305.5	Drainage Pan	27	316.1	General	31
306.0	Automatic Control Devices	27	316.2	Installation	31
306.1	General	27	316.3	Corrosion, Erosion, and Mechanical Damage	31
307.0	Labeling	27	316.4	Protectively Coated Pipe	31
307.1	Fuel-Burning Appliances	27	316.5	Fire-Resistant Construction	31
307.2	Electric Heating Appliances	28	316.6	Steel Nail Plates	31
307.3	Heat Pump and Electric Cooling Appliances	28	316.7	Sleeves	31
307.4	Absorption Units	28	316.8	Firewalls	31
308.0	Improper Location	28	316.9	Structural Members	31
308.1	General	28	316.10	Rodentproofing	31
309.0	Workmanship	28	316.11	Metal Collars	31
309.1	Engineering Practices	28	317.0	Trenching, Excavation, and Backfill	31
309.2	Concealing Imperfections	28	317.1	Trenches	31
309.3	Installation Practices	28	317.2	Tunneling and Driving	31
310.0	Condensate Wastes and Control	28	317.3	Open Trenches	31
310.1	Condensate Disposal	28	317.4	Excavations	31
310.2	Condensate Control	28	Table 303.10.1	Reduction of Clearances with Specified Forms of Protection	32
310.3	Condensate Waste Pipe Material and Sizing	29	Table 313.3	Hangers and Supports	34
Table 310.3	Minimum Condensate Pipe Size	29	CHAPTER 4	VENTILATION AIR	35
310.4	Appliance Condensate Drains	29	401.0	General	35
310.5	Point of Discharge	29	401.1	Applicability	35
310.6	Condensate Waste From Air-Conditioning Coils	29	402.0	Ventilation Air	35
310.7	Plastic Fittings	29	402.1	Occupiable Spaces	35
311.0	Heating or Cooling Air System	29	402.2	Natural Ventilation	35
311.1	Source	29	402.3	Mechanical Ventilation	35
311.2	Air Filters	29	402.4	Outdoor Air Intake Protection	36
311.3	Prohibited Source	29	403.0	Ventilation Rates	36
311.4	Return-Air Limitations	30	403.1	General	36
312.0	Plumbing Connections	30	403.2	Zone Calculations	36
312.1	General	30	403.3	Single-Zone Systems	36
313.0	Hangers and Supports	30	403.4	One Hundred Percent Outdoor Air Systems	36
313.1	General	30	403.5	Multiple-Zone Recirculating Systems	36
313.2	Material	30	403.6	Design for Varying Operating Conditions	37
313.3	Suspended Piping	30	403.7	Exhaust Ventilation	37
313.4	Alignment	30			
313.5	Underground Installation	30			
313.6	Hanger Rod Sizes	30			
Table 313.6	Hanger Rod Sizes	30			
313.7	Gas Piping	30			

403.8	Dynamic Reset	37	505.7	Fire Detection and Alarm Systems . .	48
403.9	Air Classification and Recirculation	37	505.8	Product-Conveying Ducts Classification	48
404.0	Alternative Procedure for Multiple-Zone Systems Ventilation Efficiency	38	505.9	Minimum Velocities and Circulation	48
404.1	General	38	Table 505.9	Range of Minimum Duct Design Velocities	48
404.2	Average Outdoor Air Fraction	38	505.10	Makeup Air	48
404.3	Zone Ventilation Efficiency	38	505.11	Hoods and Enclosures	48
405.0	Indoor Air Quality for Residential Occupancies	39	506.0	Product-Conveying Ducts	49
405.1	General	39	506.1	Materials	49
405.2	Ventilation Air Rate	39	506.2	Construction	49
405.3	Bathroom Exhaust	39	506.3	Penetrations	49
405.4	Kitchen Exhaust	39	506.4	Condensate	49
405.5	Ventilation Openings	39	506.5	Fittings	49
Table 402.1	Minimum Ventilation Rates in Breathing Zone	40	Table 506.2(1)	Minimum Sheet Metal Thickness for Round Ducts	50
Table 403.2.2	Zone Air Distribution Effectiveness . .	42	506.6	Explosion Venting	51
Table 403.7	Minimum Exhaust Rates	43	506.7	Supports	51
			506.8	Fire Protection	51
			Table 506.2(2)	Minimum Sheet Metal Thickness for Rectangular Ducts	52
CHAPTER 5	EXHAUST SYSTEMS	45	506.9	Protection from Physical Damage . .	52
501.0	General	45	506.10	Duct Clearances	52
501.1	Applicability	45	Table 506.10.4	Basic Minimum Clearances to Unprotected Surfaces	53
502.0	Termination	45	506.11	Clearance Reduction Methods	53
502.1	Exhaust Opening Protection	45			
502.2	Termination of Exhaust Ducts	45	Part II	Commercial Hoods and Kitchen Ventilation	53
Part I	Environmental Air Ducts and Product-Conveying Systems	45	507.0	General Requirements	53
503.0	Motors, Fans, and Filters	45	507.1	Type I Hood Exhaust System	53
503.1	General	45	507.2	Exhaust System	53
503.2	Fans	45	Table 506.11	Reduction of Duct Clearance with Specified forms of Protection	54
504.0	Environmental Air Ducts	45	507.3	Listed Devices	54
504.1	General	45	507.4	Clearance	54
504.2	Independent Exhaust Systems	46	507.5	Drawings	56
504.3	Domestic Range	46	507.6	Notification of Change	56
504.4	Clothes Dryers	46	508.0	Type I Hoods	56
504.5	Heat (Energy) Recovery Ventilators	47	508.1	Where Required	56
504.6	Gypsum Wallboard Ducts	47	508.2	Listed Type I Hood Assemblies . . .	56
505.0	Product-Conveying Systems	47	508.3	Construction of Type I Hoods	56
505.1	General	47	508.4	Supports	57
505.2	Incompatible Materials	47	508.5	Hood Size	57
505.3	Flammability Limit	47	Table 508.5.1.2	Extra-Heavy-Duty Cooking Appliance Airflow	58
505.4	Air-Moving Devices	47	Table 508.5.1.3	Heavy-Duty Cooking Appliance Airflow	58
505.5	Generating Flames, Sparks, or Hot Materials	47			
505.6	Fire Dampers	47			

TABLE OF CONTENTS

Table 508.5.1.4	Medium-Duty Cooking Appliance Airflow	513.10	513.11	Portable Fire Extinguishers	70
Table 508.5.1.5	Light-Duty Cooking Appliance Airflow	58	513.12	Maintenance	70
508.6	Solid-Fuel Hood Assemblies	59	514.0	Solid-Fuel Fire-Extinguishing Equipment	70
508.7	Exhaust Outlets	59		Procedures for the Use, Inspection, Testing, and Maintenance of Equipment	70
509.0	Grease Removal Devices in Hoods	59	514.1	Operating Procedures	70
509.1	Grease Removal Devices	59	514.2	Inspection, Testing and Maintenance	70
509.2	Installation	59	514.3	Inspection for Grease Buildup	71
509.3	Solid-Fuel Grease Removal Devices	60	Table 514.3	Schedule of Inspection for Grease Buildup	71
510.0	Exhaust Duct Systems	60	514.4	Cleaning of Exhaust Systems	71
510.1	General	60	514.5	Cooking Equipment Maintenance	72
510.2	Clearance	60	515.0	Minimum Safety Requirements for Cooking Equipment	72
510.3	Openings	60	515.1	Cooking Equipment	72
510.4	Listed Grease Ducts	61	515.2	Operating Controls	72
510.5	Other Grease Ducts	61	516.0	Recirculating Systems	72
510.6	Exterior Installations	61	516.1	General Requirements	72
510.7	Interior Installations	61	516.2	Design Restrictions	73
510.8	Underground Installations	63	516.3	Interlocks	73
510.9	Termination of Type I Hood Exhaust System	63	516.4	Location and Application Restrictions	73
510.10	Solid-Fuel Duct Systems	64	516.5	Additional Fire Safety Requirements	73
511.0	Air Movement	64	516.6	Use and Maintenance	74
511.1	Exhaust Fans for Commercial Cooking Operations	64	517.0	Solid-Fuel Cooking Operations	74
511.2	Airflow	65	517.1	Venting Application	74
511.3	Makeup Air	67	517.2	Location of Appliances	74
511.4	Common Duct (Manifold) Systems	67	517.3	Hoods for Solid-Fuel Cooking	74
511.5	Solid-Fuel Air Movement Requirements	67	517.4	Exhaust Systems for Solid-Fuel Cooking	75
512.0	Auxiliary Equipment	67	517.5	Grease Removal Devices for Solid-Fuel Cooking	75
512.1	Dampers	67	517.6	Air Movement for Solid-Fuel Cooking	75
512.2	Electrical Equipment	67	517.7	Fire-Extinguishing Equipment for Solid-Fuel Cooking	75
512.3	Other Equipment	68	517.8	Other Safety Requirements	76
512.4	Solid-Fuel Auxiliary Equipment	68	518.0	Downdraft Appliances	76
513.0	Fire-Extinguishing Equipment	68	518.1	General	76
513.1	General	68	518.2	Ventilation System	76
513.2	Types of Equipment	68	518.3	Fire-Extinguishing Equipment	76
513.3	Simultaneous Operation	69	518.4	Airflow Switch or Transducer	77
513.4	Fuel and Electric Power Shutoff	70	518.5	Surface Materials	77
513.5	Manual Activation	70	519.0	Type II Hood Exhaust System Requirements	77
513.6	System Annunciation	70			
513.7	Special Design and Application	70			
513.8	Review and Certification	70			
513.9	Installation Requirements	70			

519.1	Where Required	77	606.3	Ceiling Radiation Dampers	83
519.2	Construction of Type II Hoods	77	606.4	Multiple Arrangements	83
519.3	Dishwashing Appliances	77	606.5	Access and Identification	83
519.4	Type II Exhaust Duct Systems	77	606.6	Freedom from Interference	83
519.5	Termination of Type II Hood Exhaust System	77	606.7	Temperature Classification of Operating Elements	83
519.6	Makeup Air	77	607.0	Ventilating Ceilings	83
CHAPTER 6	DUCT SYSTEMS	79	607.1	General	83
601.0	General	79	607.2	Requirements	83
601.1	Applicability	79	608.0	Use of Under-Floor Space as Supply Plenum for Dwelling Units	83
601.2	Sizing Requirements	79	608.1	General	83
602.0	Material	79	608.2	Dwelling Units	83
602.1	General	79	608.3	Enclosed	84
602.2	Combustibles Within Ducts or Plenums	79	608.4	Flammable Materials	84
602.3	Metallic	79	608.5	Access	84
602.4	Nonmetallic Ducts	79	608.6	Automatic Control	84
602.5	Vibration Isolators	80	608.7	Temperature Limit	84
602.6	Corridors	80	608.8	Noncombustible Receptacle	84
603.0	Installation of Ducts	80	608.9	Floor Registers	84
603.1	General	80	608.10	Exterior Wall and Interior Stud Partitions	84
603.2	Under Floor or Crawl Space	80	608.11	Wall Register	84
603.3	Metal Ducts	80	608.12	Distance from Combustible	84
603.4	Flexible Air Ducts	80	608.13	Vapor Barrier	84
603.5	Plastic Ducts	80	608.14	Prohibited	84
603.6	Protection of Ducts	80	609.0	Automatic Shutoffs	84
603.7	Support of Ducts	81	609.1	Air-Moving Systems and Smoke Detectors	84
603.8	Protection Against Flood Damage	81	CHAPTER 7	COMBUSTION AIR	85
603.9	Joints and Seams of Ducts	81	701.0	General	85
Table 603.9.1	Closure Markings	81	701.1	Applicability	85
603.10	Cross Contamination	82	701.2	Pressure Difference	85
603.11	Underground Installation	82	701.3	Makeup Air	85
603.12	Air Dispersion Systems	82	701.4	Indoor Combustion Air	85
603.13	Clearances	82	701.5	Indoor Opening Size and Location	85
604.0	Furnace Plenums and Ducts Used in Fuel-Gas Appliances	82	701.6	Outdoor Combustion Air	85
604.1	Furnace Plenums and Air Ducts	82	701.7	Combination Indoor and Outdoor Combustion Air	86
604.2	Supplied as a Part of Furnace	82	701.8	Engineered Installations	87
604.3	Not Supplied with the Furnace	82	701.9	Mechanical Combustion Air Supply	87
604.4	Return Air	82	701.10	Louvers, Grilles, and Screens	87
605.0	Insulation of Ducts	82	701.11	Combustion Air Ducts	88
605.1	General	82	701.12	Dampers Prohibited	88
606.0	Smoke Dampers, Fire Dampers, and Ceiling Dampers	83	702.0	Extra Device or Attachment	88
606.1	Smoke Dampers	83	702.1	General	88
606.2	Fire Dampers	83			

TABLE OF CONTENTS

CHAPTER 8 CHIMNEYS AND VENTS 89

801.0 General 89

801.1 Applicability 89

801.2 Venting of Gas Appliances 89

801.3 Appliances Fueled by Other Fuels . . 89

802.0 Venting of Appliances 89

802.1 Listing 89

802.2 Connection to Venting Systems . . . 89

802.3 Minimum Safe Performance 89

802.4 Type of Venting System to be Used 90

802.5 Masonry, Metal, and Factory-Built Chimneys 90

Table 802.4 Type of Venting System to be Used 91

802.6 Gas Vents 93

Table 802.6.1 Roof Pitch Height 94

802.7 Single-Wall Metal Pipe 95

Table 802.7.3.3 Clearance for Connectors 96

802.8 Through-the-Wall Vent Termination 97

Table 802.8.2 Through-the-Wall Direct Vent Termination Clearances 97

802.9 Condensation Drain 97

802.10 Vent Connectors for Category I Appliances 97

Table 802.10.1.3 Minimum Thickness for Galvanized Steel Vent Connectors for Low-Heat Appliances 98

Table 802.10.1.4 Minimum Thickness for Steel Vent Connectors for Medium-Heat Appliances 99

802.11 Vent Connectors for Category II, Category III, and Category IV Appliances 100

802.12 Draft Hoods and Draft Controls . . 100

802.13 Manually Operated Dampers 101

802.14 Obstructions 101

802.15 Automatically Operated Vent Dampers 101

803.0 Sizing of Category I Venting Systems 101

803.1 Single Appliance Vent
Table 803.1.2(1) through
Table 803.1.2(6) 101

803.2 Multiple Appliance Vent
Table 803.2(1) through
Table 803.2(9) 103

Table 803.2.1 Vent Connector Maximum Length 103

Table 803.1.2(1) Type B Double-Wall Gas Vent . . . 107

Table 803.1.2(2) Type B Double-Wall Gas Vent . . . 110

Table 803.1.2(3) Masonry Chimney 112

Table 803.1.2(4) Masonry Chimney 114

Table 803.1.2(5) Single-Wall Metal Pipe or Type B Asbestos-Cement Vent 116

Table 803.1.2(6) Exterior Masonry Chimney 117

Table 803.2(1) Type B Double-Wall Vent 118

Table 803.2(2) Type B Double-Wall Vent 122

Table 803.2(3) Masonry Chimney 124

Table 803.2(4) Masonry Chimney 126

Table 803.2(5) Single-Wall Metal Pipe or Type B Asbestos-Cement Vent . . . 128

Table 803.2(6) Exterior Masonry Chimney 128

Table 803.2(7) Exterior Masonry Chimney 129

Table 803.2(8) Exterior Masonry Chimney 130

Table 803.2(9) Exterior Masonry Chimney 131

CHAPTER 9 INSTALLATION OF SPECIFIC APPLIANCES 133

901.0 General 133

901.1 Applicability 133

902.0 General 133

902.1 Nonindustrial Appliance 133

902.2 Combustion Air from Bedroom or Bathroom 133

902.3 Added or Converted Appliances . . 133

902.4 Type of Gas(es) 133

902.5 Safety Shutoff Devices for Unlisted LP-Gas Appliances Used Indoors 133

902.6 Fuel Input Rate 133

902.7 Use of Air or Oxygen Under Pressure 133

902.8 Building Structural Members 133

902.9 Flammable Vapors 133

902.10 Solid-Fuel Burning Appliances . . . 133

902.11 Combination of Appliances and Equipment 133

902.12 Protection of Gas Appliances from Fumes or Gases other than Products of Combustion 133

902.13 Process Air 133

902.14 Gas Appliance Pressure Regulators 134

902.15 Venting of Gas Appliance Pressure Regulators 134

902.16 Bleed Lines for Diaphragm-Type Valves 134

903.0	Air-Conditioning Appliances	134	906.10	Wind Protection	138
903.1	Electric Air Conditioners	134	906.11	Upper Floor Installations.	138
903.2	Gas-Fired Air Conditioners and Heat Pumps.	134	906.12	First Floor Installation	138
904.0	Central Heating Boilers and Furnaces.	135	906.13	Oil-Fired Floor Furnaces.	138
904.1	Location	135	907.0	Wall Furnaces.	138
904.2	Clearance	135	907.1	Installation	138
904.3	Assembly and Installation.	135	907.2	Location	139
904.4	Temperature or Pressure Limiting Devices	136	907.3	Combustion and Circulating Air . .	139
904.5	Low-Water Cutoff	136	907.4	Oil-Fired Wall Furnaces	139
904.6	Steam Safety and Pressure Relief Valves.	136	908.0	Clothes Dryers	139
904.7	Refrigeration Coils	136	908.1	Electric Clothes Dryers.	139
904.8	Cooling Units Used with Heating Boilers.	136	908.2	Gas-Fired Clothes Dryers.	139
Table 904.2.2	Clearances to Combustible Material for Unlisted Furnaces and Boilers	136	909.0	Conversion Burners	140
904.9	Furnace (Upright and Horizontal) . .	137	909.1	General.	140
904.10	Solid-Fuel-Fired Furnaces	137	910.0	Burner Assemblies	140
904.11	Oil-Fired Central Furnaces.	137	910.1	Oil Burners	140
904.12	Commercial or Industrial Gas Heaters	137	910.2	Gas Burners	140
904.13	Electric Central Furnaces	137	911.0	Decorative Appliances for Installation in Vented Fireplaces. . .	140
905.0	Duct Furnaces	137	911.1	Prohibited Installations	140
905.1	Clearances	137	911.2	Installation	140
905.2	Installation of Duct Furnaces.	137	911.3	Fireplace Screens.	140
905.3	Access Panels	137	912.0	Gas Fireplaces, Vented	140
905.4	Location of Draft Hoods and Controls	137	912.1	Prohibited Installations	140
905.5	Circulating Air	137	912.2	Installation	140
905.6	Duct Furnaces Used with Refrigeration Systems	137	912.3	Combustion and Circulating Air . . .	140
905.7	Installation in Commercial Garages and Aircraft Hangars . . .	137	913.0	Factory-Built Fireplaces and Fireplace Stoves.	140
905.8	Electric Duct Heaters	137	913.1	Factory-Built Fireplaces	140
906.0	Floor Furnaces	138	913.2	Fireplace Stoves.	140
906.1	Installation	138	913.3	Fireplace Accessories	140
906.2	Temperature Limit Controls	138	914.0	Non-Recirculating Direct Gas-Fired Industrial Air Heaters	140
906.3	Combustion and Circulating Air. . .	138	914.1	Application	140
906.4	Placement.	138	914.2	Prohibited Installations	140
906.5	Bracing	138	914.3	Installation	140
906.6	Support.	138	914.4	Clearance from Combustible Materials.	141
906.7	Clearance	138	914.5	Air Supply.	141
906.8	Access	138	914.6	Atmospheric Vents, Gas Reliefs, or Bleeds	141
906.9	Seepage Pan	138	914.7	Relief Openings	141
			914.8	Purging.	141
			915.0	Recirculating Direct Gas-Fired Industrial Air Heaters	141
			915.1	Application	141

TABLE OF CONTENTS

915.2	Prohibited Installations	141	920.1	Electric Household Cooking Appliances	144
915.3	Installation	141	920.2	Gas-Fired Household Cooking Appliances	144
915.4	Clearance from Combustible Materials	141	920.3	Floor-Mounted Units	144
915.5	Air Supply	141	920.4	Built-In Units	145
Table 911.2	Free Opening Area of Chimney Damper for Venting Flue Gases from Unlisted Decorative Appliances for Installation in Vented Fireplaces.	141	921.0	Cooking Appliances Listing	145
915.6	Atmospheric Vents, Gas Reliefs, or Bleeds	142	921.1	Commercial Electric Ranges	145
915.7	Relief Openings	142	921.2	Commercial Wood-Fired Baking Ovens	145
915.8	Purging	142	921.3	Oil-Burning Ranges	145
916.0	Room Heaters	142	922.0	Open-Top Broiler Units	145
916.1	Electric Room Heaters	142	922.1	Listed Units	145
916.2	Gas-Fired Room Heaters	142	922.2	Unlisted Units	145
916.3	Solid-Fuel-Type Room Heaters.	142	922.3	Protection Above Domestic Units.	145
917.0	Unit Heaters	142	922.4	Commercial Units	145
917.1	Support	142	923.0	Outdoor Cooking Appliances	145
917.2	Clearance	142	923.1	Listed Units	145
917.3	Combustion and Circulating Air.	143	923.2	Unlisted Units	145
917.4	Ductwork.	143	924.0	Illuminating Appliances.	146
917.5	Installation in Commercial Garages and Aircraft Hangars	143	924.1	Clearances for Listed Appliances.	146
917.6	Oil-Fired Unit Heaters.	143	924.2	Clearances for Unlisted Appliances	146
918.0	Food Service Appliance, Floor-Mounted	143	Table 924.2.1	Clearances for Unlisted Outdoor Open-Flame Illuminating Appliances	146
918.1	Clearance for Listed Appliances.	143	924.3	Mounting on Buildings	146
918.2	Clearance for Unlisted Appliances	143	924.4	Mounting on Posts	146
918.3	Mounting on Combustible Floors	143	924.5	Appliance Pressure Regulators	146
918.4	Installation on Noncombustible Floors	144	925.0	Incinerators and Crematories	146
918.5	Combustible Material Adjacent to Cooking Top	144	925.1	Field Constructed Commercial-Industrial Incinerators	146
918.6	Use with Casters	144	925.2	Factory-Built Commercial Crematories	146
918.7	Level Installation.	144	925.3	Residential Incinerators	146
918.8	Ventilation.	144	926.0	Infrared Heaters	146
919.0	Food Service Appliances, Counter Appliances	144	926.1	Support.	146
919.1	Vertical Clearance	144	926.2	Clearance	146
919.2	Clearance for Listed Appliances.	144	926.3	Combustion and Ventilation Air	146
919.3	Clearance for Unlisted Appliances	144	926.4	Installation in Commercial Garages and Aircraft Hangars	147
919.4	Mounting of Unlisted Appliances	144	927.0	Pool Heaters.	147
920.0	Household Cooking Appliances.	144	927.1	Location	147
			927.2	Clearance	147
			927.3	Temperature or Pressure-Limiting Devices	147
			927.4	Bypass Valves	147

927.5	Venting	147	CHAPTER 10	BOILERS AND	
928.0	Refrigerators	147		PRESSURE VESSELS	151
928.1	Clearance	147	1001.0	General	151
928.2	Venting or Ventilating Kits Approved for Use With a Refrigerator	147	1001.1	Applicability	151
929.0	Gas-Fired Toilets	147	1001.2	Boiler Rooms and Enclosures . . .	151
929.1	Clearance	147	1001.3	Air for Combustion and Ventilation	151
929.2	Installation on Combustible Floors	147	1001.4	Drainage	151
929.3	Vents	147	1001.5	Mounting	151
930.0	Appliances for Installation in Manufactured Housing	147	1001.6	Chimneys or Vents	151
930.1	General	147	1002.0	Standards	151
931.0	Small Ceramic Kilns	147	1002.1	General	151
931.1	General	147	1002.2	Oil-Burning Boilers	151
931.2	Installation	147	1002.3	Electric Boilers	151
931.3	Fuel-Gas Controls	147	1002.4	Solid-Fuel-Fired Boilers	151
931.4	Electrical Equipment	147	1002.5	Dual Purpose Water Heater	151
931.5	Installations Inside Buildings . . .	147	1003.0	Detailed Requirements	151
931.6	Exterior Installations	148	1003.1	Safety Requirements	151
932.0	Outdoor Open Flame Decorative Appliances	148	1003.2	Controls	152
932.1	General	148	1003.3	Gauges	152
933.0	Evaporative Cooling Systems . . .	148	1003.4	Stack Dampers	152
933.1	General	148	1003.5	Welding	152
933.2	Location	148	1004.0	Expansion Tanks	152
933.3	Access, Inspection, and Repair . .	148	1004.1	General	152
933.4	Installation	148	1004.2	Open-Type Expansion Tanks . . .	152
934.0	Refrigeration Appliances	148	1004.3	Closed-Type Systems	152
934.1	Self-Contained Refrigerators and Freezers	148	1004.4	Minimum Capacity of Closed- Type Tank	152
934.2	Unit Coolers	148	Table 1004.4(1)	Expansion Tank Capacities for Gravity Hot Water Systems	152
934.3	Self-Contained Mechanical Refrigeration Systems	149	Table 1004.4(2)	Expansion Tank Capacities for Forced Hot Water Systems	153
935.0	Ductless Mini-Split Systems Installation	149	1005.0	Safety or Relief Valve Discharge . .	153
935.1	General	149	1005.1	General	153
936.0	Air Filter Appliances	149	1005.2	Discharge Piping	153
936.1	Electrostatic Air Cleaners	149	1005.3	Splash Shield	153
936.2	High-Efficiency Particulate Air Filter Units	149	1005.4	Hazardous Discharge	153
937.0	Gaseous Hydrogen Systems . . .	149	1005.5	Vacuum Relief Valve	153
937.1	General	149	1006.0	Shutoff Valves	153
938.0	Compressed Natural Gas (CNG) Vehicular Fuel Systems	149	1006.1	General	153
938.1	General	149	1007.0	Gas-Pressure Regulators	153
			1007.1	General	153
			1008.0	Low-Water Cutoff	153
			1008.1	General	153
			1009.0	Combustion Regulators - Safety Valves	153
			1009.1	General	153
			1010.0	Clearance for Access	154

TABLE OF CONTENTS

1010.1	General	154	1104.4	Industrial Occupancies and Refrigerated Rooms	160
1010.2	Power Boilers	154	1104.5	Flammable Refrigerants	160
1010.3	Steam-Heating Boilers, Hot Water Boilers, and Power Boilers . .	154	1104.6	Applications for Human Comfort and for Nonindustrial Occupancies	160
1010.4	Package Boilers, Steam-Heating Boilers, and Hot-Water-Heating Boilers	154	1104.7	Refrigerant Type and Purity	160
1011.0	Boilers, Stokers, and Steam Generators	154	1104.8	Changing Refrigerants	161
1011.1	General	154	1105.0	General Requirements	161
1012.0	Operating Adjustments and Instructions	154	1105.1	Human Comfort	161
1012.1	General	154	1105.2	Supports and Anchorage	161
1013.0	Inspections and Tests	154	1105.3	Access	161
1013.1	General	154	1105.4	Illumination and Service Receptacles	161
1013.2	Operating Permit	154	1105.5	Ventilation of Rooms Containing Condensing Units	161
1013.3	Maintenance Inspection	154	1105.6	Prohibited Locations	162
1013.4	Power and Miniature Boilers	154	1105.7	Condensate	162
1013.5	Steam-Heating and Water-Heating Boilers	155	1105.8	Defrost	162
1013.6	Automatic Steam-Heating Boilers	155	1105.9	Overflows	162
1013.7	Unfired Pressure Vessels	155	1105.10	Condensate, Defrost, and Overflow Disposal	162
1014.0	Operation and Maintenance of Boilers and Pressure Vessels	155	1105.11	Refrigerant Port Protection	162
1014.1	General	155	1105.12	Storage	162
Table 1003.2.1	Controls and Limit Devices for Automatic Boilers	156	1106.0	Refrigeration Machinery Rooms . .	162
CHAPTER 11	REFRIGERATION	159	1106.1	Where Required	162
1101.0	General	159	1106.2	Refrigeration Machinery Room, General Requirements	162
1101.1	Applicability	159	Table 1106.2.5.2	Required Airflow for Group A2L Refrigerants	164
1101.2	Equipment	159	1106.3	Normal Operation	164
Part I	Refrigeration Systems	159	1106.4	Natural Ventilation	164
1102.0	Refrigeration Systems	159	1106.5	Combustion Air	164
1102.1	General	159	1106.6	Airflow	164
1102.2	Ammonia Refrigeration Systems . .	159	1106.7	Ventilation Intake	164
1102.3	Refrigerants	159	1106.8	Maximum Temperature	164
1103.0	Classification	159	1106.9	Refrigerant Parts in Air Duct	165
1103.1	Classification of Refrigerants	159	1106.10	Dimensions	165
1103.2	Classification of Refrigeration Systems	159	1106.11	Restricted Access	165
1103.3	Higher Flammability Refrigerants	159	1106.12	Exits	165
1104.0	Requirements for Refrigerant and Refrigeration System Use	159	1107.0	Machinery Room, Special Requirements	165
1104.1	System Selection	159	1107.1	General	165
1104.2	Refrigerant Concentration Limit . .	159	1108.0	Refrigeration Machinery Room Equipment and Controls	165
1104.3	Institutional Occupancies	160	1108.1	General	165
			1108.2	Electrical	165
			1108.3	Emergency Shut-off	165

1108.4	Installation, Maintenance, and Testing	166	1112.14	Rating of Rupture Members and Fusible Plugs	171
1108.5	Emergency Pressure Control System	166	1113.0	Overpressure Protection.	171
1109.0	Refrigeration Piping, Containers, and Valves	166	1113.1	General.	171
1109.1	Materials	166	1113.2	Type of Protection	171
1109.2	Joints	166	1113.3	Discharging into Lowside of System	171
1109.3	Penetration of Piping	166	1113.4	Parallel Pressure-Relief Devices . .	171
1109.4	Location of Refrigeration Piping . .	166	1113.5	Discharge Capacity	171
1109.5	Underground Piping	166	Table 1113.5	Relief Devices Capacity Factor . .	172
1109.6	Support	166	1113.6	Three-Way Valve	172
1109.7	Pipe Enclosure	166	1114.0	Special Discharge Requirements. .	172
1109.8	Visual Inspection	167	1114.1	General.	172
1109.9	Condensation	167	1114.2	Design Requirements.	172
1109.10	Identification	167	1114.3	Testing	172
1110.0	Valves.	167	1115.0	Labeling and Identification	172
1110.1	More than 6.6 Pounds of Refrigerant	167	1115.1	General.	172
1110.2	More than 110 Pounds of Refrigerant	167	1115.2	Volume and Type	172
1110.3	Support	167	1115.3	Permanent Sign	172
1110.4	Access	167	1115.4	Marking of Pressure-Relief Devices.	172
1110.5	Identification	167	1116.0	Testing of Refrigeration Equipment	173
1111.0	Pressure-Limiting Devices	167	1116.1	Factory Tests	173
1111.1	Where Required	167	1116.2	Field Tests	173
1111.2	Setting	167	Table 1116.2	Field Leak Test Pressures	173
1111.3	Location	167	1116.3	Test Gases	173
1111.4	Emergency Stop	167	1116.4	Declaration	173
1112.0	Pressure-Relief Devices.	167	1116.5	Brine Systems	174
1112.1	General.	167	1117.0	Refrigerant-Containing Pressure Vessels.	174
1112.2	Positive Displacement Compressor	168	1117.1	Inside Dimensions 6 Inches or Less	174
1112.3	Liquid-Containing Portions of Systems	168	1117.2	Inside Dimensions More than 6 Inches	174
1112.4	Evaporators	168	1117.3	Pressure Vessels for 15 psig or Less	174
1112.5	Hydrostatic Expansion	168	1118.0	Maintenance and Operation	174
1112.6	Actuation.	168	1118.1	General.	174
1112.7	Stop Valves Prohibited	169	Part II	Cooling Towers.	174
1112.8	Location	169	1119.0	General.	174
1112.9	Materials	169	1119.1	Applicability.	174
1112.10	Pressure-Relief Device Settings. . .	169	1120.0	Support and Anchorage	174
1112.11	Discharge from Pressure-Relief Devices.	169	1120.1	General.	174
1112.12	Discharge Piping	170	1121.0	Drainage.	174
Table 1112.12.3	Atmospheric Pressure at Nominal Installation Elevation.	170	1121.1	General.	174
1112.13	Rating of Pressure-Relief Device.	171	1122.0	Chemical Treatment Systems . . .	174
			1122.1	General.	174

TABLE OF CONTENTS

1122.2	Automated Control of Cycles of Concentration	174	1205.3	Flushing	184
1123.0	Location	174	1206.0	Pressure and Safety Devices	184
1123.1	General	174	1206.1	General	184
1124.0	Electrical	174	1206.2	Discharge Piping	184
1124.1	General	174	1207.0	Heating Appliances and Equipment	184
1125.0	Refrigerants and Hazardous Fluids	174	1207.1	General	184
1125.1	General	174	1207.2	Boilers	184
1126.0	Drift Eliminators	175	1207.3	Dual-Purpose Water Heaters	184
1126.1	General	175	1207.4	Solar Heat Collector Systems	185
Table 1102.3	Refrigerant Groups, Properties, and Allowable Quantities	176	1208.0	Circulators and Pumps	185
Table 1104.1	Permissible Refrigeration Systems	181	1208.1	General	185
CHAPTER 12	HYDRONICS	183	1208.2	Mounting	185
1201.0	General	183	1208.3	Sizing	185
1201.1	Applicability	183	1209.0	Expansion Tanks	185
1201.2	Insulation	183	1209.1	General	185
1201.3	Water Hammer	183	1209.2	Installation	185
1201.4	Terminal Units	183	1209.3	Open-Type Expansion Tanks	185
1201.5	Return-Water Low-Temperature Protection	183	1209.4	Closed-Type Tanks	185
1202.0	Protection of Potable Water Supply	183	1209.5	Sizing	185
1202.1	Prohibited Sources	183	1210.0	Materials	185
1202.2	Chemical Injection	183	1210.1	Piping, Tubing, and Fittings	185
1202.3	Compatibility	183	1210.2	Expansion and Contraction	185
1203.0	Capacity of Heat Source	183	1210.3	Hangers and Supports	185
1203.1	Heat Source	183	1210.4	Oxygen Diffusion Corrosion	185
1203.2	Dual Purpose Water Heater	183	1211.0	Joints and Connections	185
Table 1203.2	Water Heaters	183	1211.1	General	185
1203.3	Tankless Water Heaters	183	1211.2	Chlorinated Polyvinyl Chloride (CPVC) Pipe	185
1204.0	Identification of a Potable and Nonpotable Water System	183	Table 1210.1	Materials for Hydronic System Piping, Tubing, and Fittings	186
1204.1	General	183	1211.3	CPVC/AL/CPVC Plastic Pipe and Joints	187
1204.2	Color and Information	183	1211.4	Copper or Copper Alloy Pipe and Tubing	187
1204.3	Potable Water	183	1211.5	Crossed-Linked Polyethylene (PEX) Pipe	188
1204.4	Nonpotable Water	183	1211.6	Cross-Linked Polyethylene/Aluminum/Cross-Linked Polyethylene (PEX-AL-PEX) Pipe . .	188
Table 1204.3	Minimum Length of Color Field and Size of Letters	184	1211.7	Ductile Iron Pipe	188
1204.5	Location of Piping Identification . . .	184	1211.8	Polyethylene (PE) Plastic Pipe/Tubing	188
1204.6	Flow Directions	184	1211.9	Polyethylene/Aluminum/ Polyethylene (PE-AL-PE)	188
1205.0	Installation, Testing, and Inspection	184	1211.10	Polyethylene of Raised Temperature (PE-RT)	189
1205.1	Operating Instructions	184	1211.11	Polypropylene (PP) Pipe	189
1205.2	Pressure Testing	184			

1211.12	Polyvinyl Chloride (PVC) Pipe . . .	189	1217.2	Radiant Under-Floor Heating	191
1211.13	Steel Pipe and Tubing	189	1217.3	Radiant Cooling Systems	191
1211.14	Joints Between Various Materials . .	189	1217.4	Tube Placement	191
1212.0	Valves	190	Table 1217.4	Maximum Length of Continuous Tubing from a Supply-and-Return Manifold Arrangement	192
1212.1	General	190	1217.5	Poured Floor Structural Concrete Slab Systems (Thermal Mass) . . .	192
1212.2	Where Required	190	1217.6	Joist Systems and Subfloors	192
1212.3	Heat Exchanger	190	1217.7	Wall and Ceiling Panels	192
1212.4	Pressure Vessels	190	1217.8	Radiant Heating and Cooling Panels	192
1212.5	Pressure Reducing Valves	190	1218.0	Heat Exchangers	193
1212.6	Equipment, Components, and Appliances	190	1218.1	General	193
1212.7	Expansion Tank	190	1219.0	Indirect-Fired Domestic Hot-Water Storage Tanks	193
1212.8	Flow Balancing Valves	190	1219.1	General	193
1212.9	Mixing or Temperature Control Valves	190	1220.0	Snow and Ice Melt Systems	193
1212.10	Thermosiphoning	190	1220.1	Use of Chemical Additives and Corrosive Fluids	193
1212.11	Air Removal Device or Air Vents . .	190	1220.2	Types of Tube Fasteners	193
1213.0	System Controls	190	1220.3	Spacing of Tube Fasteners	193
1213.1	Water Temperature Controls	190	1220.4	Snow and Ice Melt Controls	193
1213.2	Operating Steam Controls	190	Table 1220.4.1	Loop Lengths for Snow and Ice Melt Systems	194
1213.3	Occupied Spaces	190	1220.5	Hydronic Makeup Air Units	194
1213.4	Simultaneous Operation	190	1221.0	Piping Installation	194
1213.5	Temperature Reading	190	1221.1	General	194
1214.0	Pressure and Flow Controls	190	1221.2	Embedded Piping Materials and Joints	194
1214.1	Balancing	190	1221.3	Pressure Testing	194
1214.2	Low-Water Control	190	1221.4	System Drainage	194
1214.3	Flow-Sensing Devices	190	1221.5	Condensate Drainage	194
1214.4	Automatic Makeup Fluid	190	1221.6	Clearance to Combustibles	194
1214.5	Differential Pressure Regulation . .	190			
1214.6	Air-Removal Device	190	CHAPTER 13	FUEL GAS PIPING	195
1214.7	Air-Separation Device	191	1301.0	Scope of Gas Piping	195
1214.8	Secondary Loops	191	1301.1	Applicability	195
1215.0	Hydronic Space Heating	191	1302.0	Coverage of Piping System	195
1215.1	General	191	1302.1	General	195
1215.2	Installation	191	1302.2	Piping System Requirements . . .	195
1215.3	Freeze Protection	191	1302.3	Applications	195
1215.4	Balancing	191	1303.0	Inspection	195
1215.5	Heat Transfer Fluid	191	1303.1	Inspection Notification	195
1216.0	Steam Systems	191	1303.2	Excavation	195
1216.1	Steam Traps	191	1303.3	Type of Inspections	195
1216.2	Sloping for Two-Pipe System . . .	191	1303.4	Inspection Waived	196
1216.3	Sloping for One-Pipe System . . .	191	1304.0	Certificate of Inspection	196
1216.4	Automatic Air Vents	191			
1216.5	Condensate Flow	191			
1216.6	Steam-Distribution Piping	191			
1217.0	Radiant Heating and Cooling	191			
1217.1	Installation	191			

TABLE OF CONTENTS

1304.1	Issuance	196	1310.7	Appliance Overpressure Protection	206
1304.2	Gas Supplier	196	1310.8	Gas Pipe Turns	206
1304.3	Unlawful	196	1310.9	Drips and Sediment Traps	206
1305.0	Authority to Render Gas Service . .	196	1310.10	Outlets	206
1305.1	Authorized Personnel	196	1310.11	Manual Gas Shutoff Valves	207
1305.2	Outlets	196	1310.12	Prohibited Devices	207
1306.0	Authority to Disconnect	196	1310.13	Systems Containing Gas-Air Mixtures Outside the Flammable Range	207
1306.1	Disconnection	196	1310.14	Systems Containing Flammable Gas-Air Mixtures	207
1306.2	Notice	196	1311.0	Electrical Bonding and Grounding	208
1306.3	Capped Outlets	196	1311.1	Pipe and Tubing other than CSST	208
1307.0	Temporary Use of Gas	196	1311.2	Bonding of CSST Gas Piping	208
1307.1	General	196	1311.3	Arc-Resistant Jacketed CSST	209
1308.0	Gas Piping System Design, Materials, and Components	196	1311.4	Prohibited Use	209
1308.1	Installation of Piping System	196	1311.5	Lightning Protection System	209
1308.2	Provision for Location of Point of Delivery	196	1311.6	Electrical Circuits	209
1308.3	Interconnections Between Gas Piping Systems	196	1311.7	Electrical Connections	209
1308.4	Sizing of Gas Piping Systems	197	1312.0	Appliance and Equipment Connections to Building Piping	209
1308.5	Acceptable Piping Materials and Joining Methods	197	1312.1	Connecting Appliances and Equipment	209
Table 1308.4.1	Approximate Gas Input for Typical Appliances	197	1312.2	Suspended Low-Intensity Infrared Tube Heaters	209
Table 1308.5.6.2	Specifications for Threading Metallic Pipe	198	1312.3	Use of Nonmetallic Gas Hose Connectors	209
1308.6	Gas Meters	200	1312.4	Injection (Bunsen) Burners	210
1308.7	Gas Pressure Regulators	201	1312.5	Connection of Portable and Mobile Industrial Appliances	210
1308.8	Overpressure Protection	201	1312.6	Appliance Shutoff Valves and Connections	210
1308.9	Pressure Limitation Requirements	201	1312.7	Quick-Disconnect Devices	210
1308.10	Overpressure Protection Devices	202	1312.8	Gas Convenience Outlets	210
1308.11	Backpressure Protection	202	1312.9	Sediment Trap	210
1308.12	Low-Pressure Protection	202	1312.10	Installation of Piping	210
1308.13	Shutoff Valves	202	1312.11	Liquefied Petroleum Gas Facilities and Piping	210
1308.14	Expansion and Flexibility	202	1313.0	Pressure Testing, Inspection, and Purging	210
1309.0	Excess Flow Valve	203	1313.1	Piping Installations	210
1309.1	General	203	1313.2	Test Preparation	211
1310.0	Gas Piping Installation	203	1313.3	Test Pressure	211
1310.1	Piping Underground	203	1313.4	Detection of Leaks and Defects	211
1310.2	CSST Piping Systems	204	1313.5	Piping System Leak Test	211
1310.3	Installation of Aboveground Piping	204	1313.6	Purging Requirements	212
Table 1310.3.5.1	Support of Piping	205			
1310.4	Concealed Piping in Buildings	205			
1310.5	Piping in Vertical Chases	205			
1310.6	Maximum Operating Pressure in Buildings	206			

Table 1313.6.1	Size and Length of Piping	212	Table 1315.2(27)	Schedule 40 Metallic Pipe	241
1314.0	Required Gas Supply	213	Table 1315.2(28)	Semi-Rigid Copper Tubing	242
1314.1	General	213	Table 1315.2(29)	Semi-Rigid Copper Tubing	243
1314.2	Volume	213	Table 1315.2(30)	Semi-Rigid Copper Tubing	244
1314.3	Gas Appliances	213	Table 1315.2(31)	Corrugated Stainless Steel Tubing (CSST)	245
1314.4	Size of Piping Outlets	213	Table 1315.2(32)	Corrugated Stainless Steel Tubing (CSST)	246
1315.0	Required Gas Piping Size	213	Table 1315.2(33)	Corrugated Stainless Steel Tubing (CSST)	247
1315.1	Pipe Sizing Methods	213	Table 1315.2(34)	Polyethylene Plastic Pipe	248
1315.2	Sizing of Gas Piping Systems	213	Table 1315.2(35)	Polyethylene Plastic Pipe	249
1315.3	Sizing Equations	213	Table 1315.2(36)	Polyethylene Plastic Tubing	250
Table 1315.3	<i>Cr</i> and <i>Y</i> for Natural Gas and Undiluted Propane at Standard Conditions	214			
1315.4	Sizing of Piping Sections	214	CHAPTER 14	PROCESS PIPING	251
1315.5	Engineering Methods	214	1401.0	General	251
1315.6	Variable Gas Pressures	214	1401.1	Applicability	251
Table 1315.2(1)	Schedule 40 Metallic Pipe	216	1402.0	Permit	251
Table 1315.2(2)	Schedule 40 Metallic Pipe	217	1402.1	General	251
Table 1315.2(3)	Schedule 40 Metallic Pipe	218	1403.0	Plans Required	251
Table 1315.2(4)	Schedule 40 Metallic Pipe	219	1403.1	General	251
Table 1315.2(5)	Schedule 40 Metallic Pipe	220	1404.0	Workmanship	251
Table 1315.2(6)	Schedule 40 Metallic Pipe	221	1404.1	General	251
Table 1315.2(7)	Semi-Rigid Copper Tubing	222	1405.0	Inspections	251
Table 1315.2(8)	Semi-Rigid Copper Tubing	223	1405.1	General	251
Table 1315.2(9)	Semi-Rigid Copper Tubing	224	1405.2	Required Inspections	251
Table 1315.2(10)	Semi-Rigid Copper Tubing	225	1405.3	Other Inspections	251
Table 1315.2(11)	Semi-Rigid Copper Tubing	226	1406.0	Pipe, Tubing, and Fittings	251
Table 1315.2(12)	Semi-Rigid Copper Tubing	227	1406.1	General	251
Table 1315.2(13)	Semi-Rigid Copper Tubing	228	1406.2	Hazardous Process Piping (HPP)	251
Table 1315.2(14)	Corrugated Stainless Steel Tubing (CSST)	229	1406.3	Special Requirements for HPP Gases	252
Table 1315.2(15)	Corrugated Stainless Steel Tubing (CSST)	230			
Table 1315.2(16)	Corrugated Stainless Steel Tubing (CSST)	231	CHAPTER 15	SOLAR ENERGY SYSTEMS	253
Table 1315.2(17)	Corrugated Stainless Steel Tubing (CSST)	232	1501.0	General	253
Table 1315.2(18)	Corrugated Stainless Steel Tubing (CSST)	233	1501.1	Applicability	253
Table 1315.2(19)	Polyethylene Plastic Pipe	234	CHAPTER 16	STATIONARY POWER PLANTS	255
Table 1315.2(20)	Polyethylene Plastic Pipe	235	1601.0	Stationary Fuel Cell Power Plants	255
Table 1315.2(21)	Polyethylene Plastic Pipe	236	1601.1	General	255
Table 1315.2(22)	Polyethylene Plastic Tubing	237	1602.0	Stationary Gas Engines and Generators	255
Table 1315.2(23)	Polyethylene Plastic Tubing	237	1602.1	General	255
Table 1315.2(24)	Schedule 40 Metallic Pipe	238	1602.2	Connection to the Gas Supply Piping	255
Table 1315.2(25)	Schedule 40 Metallic Pipe	239	1602.3	Stationary Engine Generators	255
Table 1315.2(26)	Schedule 40 Metallic Pipe	240			

TABLE OF CONTENTS

CHAPTER 17	REFERENCED STANDARDS . . . 257
1701.0	General 257
1701.1	Standards 257
Table 1701.1	Referenced Standards 257
1701.2	Standards, Publications Practices, and Guides 270
Table 1701.2	Standards, Publications Practices, and Guides 270
APPENDICES	TABLE OF CONTENTS 277
Appendix A	Residential Plans Examiner Review Form for HVAC System Design 279
Appendix B	Procedures to be Followed to Place Gas Equipment in Operation 281
Appendix C	Installation and Testing of Oil (Liquid) Fuel-Fired Equipment . . . 283
Appendix D	Fuel Supply: Manufactured/Mobile Home Parks and Recreational Vehicle Parks 289
Appendix E	Sustainable Practices 295
Appendix F	Geothermal Energy Systems 401
Appendix G	Sizing of Venting Systems and Outdoor Combustion and Ventilation Opening Design 411
Appendix H	Example Calculation of Outdoor Air Rate 421
USEFUL TABLES	423
INDEX	431