

**LOCAL LAWS
OF
THE CITY OF NEW YORK
FOR THE YEAR 2005**

No. 99

Introduced by Council Members Provenzano, Lopez, Oddo, Comrie, Sanders Jr., Katz, Rivera, Lanza, Weprin, Vallone Jr., Felder, Sears, Gallagher, Jennings, Reed, Stewart, Avella, Foster and Brewer (by request of the Mayor)

A LOCAL LAW

To amend the administrative code of the city of New York, in relation to enacting the New York city plumbing code based on the 2003 edition of the International Plumbing Code published by the International Code Council and enacting administrative provisions applicable to such New York city plumbing code and to such other codes as may hereafter be enacted by the city based on the 2003 editions of the International Building Code, the International Fuel Gas Code, the International Mechanical Code, and the International Residential Code.

Be it enacted by the Council as follows:

Section 1. The administrative code of the city of New York is amended by adding a new title 28 to read as follows:

*TITLE 28
NEW YORK CITY CONSTRUCTION CODES*

*CHAPTER 1
ADMINISTRATION AND ENFORCEMENT*

*SECTION 101
GENERAL*

§28-101.1 Title. The provisions of this chapter shall apply to the administration and enforcement of the codes to be enacted and set forth in this title. The codes to be enacted and set forth in this title shall be known and may be cited as the "New York city construction codes" and shall consist of:

*The New York city plumbing code.
The New York city building code.
The New York city mechanical code.
The New York city fuel gas code.
The New York city residential code.*

§28-101.2 Intent. The purpose of this code is to provide reasonable minimum

requirements and standards, based upon current scientific and engineering knowledge, experience and techniques, and the utilization of modern machinery, equipment, materials, and forms and methods of construction, for the regulation of building construction in the city of New York in the interest of public safety, health and welfare, and with due regard for building construction and maintenance costs.

§28-101.3 Codes. Any reference in this chapter to “this code” or “the code” shall be deemed to be a reference to this title and all of the codes comprising the New York city construction codes unless the context or subject matter requires otherwise.

§28-101.4 Effective date. Except as otherwise provided in this section, on and after the effective date of this code, all work shall be performed in accordance with its provisions. Any work for which an application for a permit was submitted to the department prior to the effective date of this code, or for which an application for a permit is submitted to the department within a period of 12 months after such date may, at the option of the owner, be performed in its entirety in accordance with the requirements of this code, or in accordance with the requirements of the building laws and regulations previously in force in the city of New York, provided that such work is commenced within 12 months after the date of issuance of a permit for such work and is diligently carried on to completion. The commissioner shall be authorized to grant time extensions beyond the 12 months period when strict compliance with the provisions of this section is not feasible.

§28-101.5 Definitions. As used in this chapter and elsewhere in this title, the following terms shall have the following meanings unless the context or subject matter requires otherwise:

ADDITION. An extension or increase in floor area or height of a building or structure. The term addition shall include enlargement.

ALTERATION. Any construction, addition, enlargement or renovation to an existing structure other than repair.

APPROVED FABRICATOR. An established and qualified person, firm or corporation approved by the commissioner pursuant to this code to fabricate materials.

ARCHITECT. A person licensed and registered to practice the profession of architecture under the education law of the state of New York.

BUILDING. Any structure used or intended for supporting or sheltering any use or occupancy. The term shall be construed as if followed by the phrase “structure, premises, or part thereof” unless otherwise indicated by the text.

CITY. The city of New York.

COMMISSIONER. The commissioner of buildings of the city of New York, or his or her duly authorized representative.

CONSTRUCTION DOCUMENTS. Completed application forms submitted with any other required written, graphic and pictorial documents, prepared or assembled for describing the design, location and physical characteristics of the elements of a project, including special inspection and other data, that demonstrate compliance with the code or other applicable laws and rules. Where required by this code or by the department, construction documents also shall include certifications or approvals from other governmental agencies.

DEPARTMENT. The department of buildings of the city of New York.

ENGINEER. A person licensed and registered to practice the profession of engineering under the education law of the state of New York.

ENLARGEMENT. As defined in section 12-10 of the zoning resolution.

FIRE DISTRICTS. The geographical territories established under this code for the

regulation of occupancy groups and construction classes within such districts.

HEREAFTER. On or after the effective date of this code or an applicable amendment thereof.

HERETOFORE. Before the effective date of this code or an applicable amendment thereof.

LISTED. Refers to materials, equipment, appliances, or devices shown in a list published by an approved testing agency qualified and equipped for experimental testing and maintaining an adequate periodic inspection of current productions and whose listing states that the material, equipment, appliance, or device complies with nationally recognized standards when installed in accordance with the manufacturer's installation instructions.

OCCUPANCY. The purpose or activity for which a building or space is used or is designed or intended to be used.

OWNER. Any person, agent, firm or corporation having a legal or equitable interest in, or control of the premises.

PERMIT. An official document or certificate issued by commissioner which authorizes performance of a specified activity.

PERSON. An individual, partnership, corporation, or other legal entity.

PREMISES. Land, improvements thereon, or any part thereof.

REQUIRED. Shall mean required by the provisions of this code.

STRUCTURE. That which is built or constructed, including among others: buildings, stadia, tents, reviewing stands, platforms, stagings, observation towers, radio towers, tanks, trestles, open sheds, shelters, fences, and display signs.

USE (USED). The purpose for which a building, structure, or space is occupied or utilized, unless otherwise indicated by the text. Use (used) shall be construed as if followed by the words "or is intended, arranged, or designed to be used."

UTILITY COMPANY OR PUBLIC UTILITY COMPANY. The term shall be construed to have the same meaning as that contained in section two of the New York state public service law.

UTILITY CORPORATION OR PUBLIC UTILITY CORPORATION. The term shall be construed to have the same meaning as that contained in section two of the New York state public service law.

WRITING (WRITTEN). The term shall be construed to include handwriting, typewriting, printing, photo-offset, or any other form of reproduction in legible symbols or characters, including, in the discretion of the commissioner, electronic media.

WRITTEN NOTICE. A notification in writing delivered by hand to the person or parties intended, or delivered at or sent by mail to the last address known to the party giving such notice.

ZONING RESOLUTION. The zoning resolution of the city of New York, adopted December fifteenth, nineteen hundred sixty-one, including all amendments thereto.

SECTION 102 APPLICABILITY

§28-102.1 *General.* Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

§28-102.2 *Other laws.* The provisions of this code do not presumptively provide for matters that are contained in the charter, the labor law, the multiple dwelling law, the

zoning resolution, or the general city law. Where there is conflict or inconsistency between the requirements of this code and other applicable laws and rules, unless otherwise required, such conflict shall be resolved in favor of the more restrictive requirement.

§28-102.3 *Application of references.* References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

§28-102.4 *Separability.* If any clause, sentence, paragraph, section or part of this code shall be adjudged to be invalid, such judgment shall not affect, impair or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment shall have been rendered.

§28-102.5 *Existing structures.* The lawful use or occupancy of any building or structure, including the use of any service equipment therein, existing on the effective date of this code or any amendment of this code or thereafter constructed or installed in accordance with prior code requirements, as provided in section 28-101.4 of this code, may be continued unless a retroactive change is specifically required by the provisions of this code, or other applicable laws or rules. The continuation of the unlawful use or occupancy of a building or structure after the effective date of this code contrary to the provisions of this code shall be deemed a violation of this code.

§28-102.5.1 *Change in use or occupancy.* Changes in the use or occupancy of any building or structure made after the effective date of this code shall comply with the provisions of this code. Any changes made in the use or occupancy of a building or structure not in compliance with this code shall be prohibited and shall be deemed a violation of this code.

§28-102.5.2 *Alteration of existing buildings.* Existing buildings altered after the effective date of this code shall comply with the provisions of this code relating to existing buildings. In accordance with subdivision eleven of section three of the multiple dwelling law, buildings erected prior to December 6, 1969 may, at the option of the owner, be altered or converted to a multiple dwelling in accordance with the provisions of this code or in accordance with applicable provisions of the multiple dwelling law covering the same subject matter, provided the general safety and public welfare are not thereby endangered.

SECTION 103 DUTIES AND POWERS OF COMMISSIONER OF BUILDINGS

§28-103.1 *Jurisdiction.* This code shall be enforced by the commissioner of buildings, pursuant to the provisions of section six hundred forty-three of the New York city charter, as amended, except that the commissioner of small business services may also enforce all of the provisions of this code with respect to buildings under the jurisdiction of the department of small business services and the fire commissioner may also enforce all the provisions of this code relating to:

1. The approved number of persons in places of public assembly (overcrowding);
2. Obstruction of aisles, corridors, and exits;
3. The posting and availability for inspection of certificates of occupancy or other authorization of lawful occupancy, certificates of compliance and places of assembly certificates of operation;
4. The maintenance of fire, smoke and carbon monoxide detection and alarm systems, fire extinguishing systems, refrigerating systems, storage tanks and

auxiliary storage tanks for oil burning equipment, exit and directional signs, and any fire or life safety system, equipment or device intended for use by fire fighting personnel or whose use or operation is subject to the New York city fire prevention code or other law or rule enforced by the New York city fire department, and any related installation and signage;

5. The installation and testing of fire alarm systems, smoke-detecting and carbon monoxide detecting devices that are interconnected with a fire alarm system or monitored by a central station.

§28-103.1.1 *Where the installation of exit and directional signs, emergency lighting and sprinkler and fire alarm protection is required by the fire prevention code, the fire commissioner shall require such installations to be in accordance with the provisions of this code.*

§28-103.2 *Interpretation. This code shall be liberally interpreted to secure the beneficial purposes thereof.*

§28-103.3 *Variations. The requirements and standards prescribed in this code shall be subject to variation in specific cases by the commissioner, or by the board of standards and appeals, under and pursuant to the provisions of paragraph two of subdivision (b) of section six hundred forty-five and section six hundred sixty-six of the New York city charter, as amended.*

§28-103.4 *Appeals. An appeal from any decision or interpretation of the commissioner may be taken to the board of standards and appeals pursuant to the procedures of the board, except as provided in section 25-205 of the administrative code.*

§28-103.5 *Seal; judicial notice. The commissioner may design and adopt a seal for the department, and cause the same to be used in the authentication of the orders and proceedings of the department, and for such other purposes as he or she may prescribe. The courts shall take judicial notice of such seal, and of the signature of the commissioner, the deputy commissioners, and the borough superintendents of the department.*

§28-103.6 *Proofs, affidavits and oaths. Proofs, affidavits and examinations as to any matter arising in connection with the performance of any of the duties of the department may be taken by or before the commissioner, or a deputy commissioner, or such other person as the commissioner may designate; and such commissioner, deputy or other person may administer oaths in connection therewith.*

§28-103.7 *Cooperation of other departments. Upon request of the commissioner, it shall be the duty of all departments to cooperate with the department of buildings at all times, and to furnish to such department such information, reports and assistance as the commissioner may require.*

§28-103.8 *Matters not provided for. Any matter or requirement essential for the fire or structural safety of a new or existing building or essential for the safety or health of the occupants or users thereof or the public, and which is not covered by the provisions of this code or other applicable laws and rules, shall be subject to determination and requirements by the commissioner in specific cases.*

§28-103.9 *Additional tests. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method of construction does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the commissioner shall have the authority to require tests as evidence of compliance to be made at no expense to the city. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the commissioner shall approve the testing*

procedures. Tests shall be performed as directed by the commissioner. Reports of such tests shall be retained by the commissioner for the period required for retention of public records.

§28-103.10 Applications and permits. The department shall receive and review applications and plans, and issue permits, in accordance with the provisions of this code.

§28-103.11 Identification. Department personnel shall carry metal badges with suitable inscriptions thereon or other proper identification when inspecting structures or premises or otherwise in the performance of their duties under this code.

§28-103.12 Right of Entry. The commissioner or his or her authorized representatives, in the discharge of their duties, shall have the right to enter upon and inspect, at all reasonable times, any buildings, enclosure, premises, or any part thereof, or any signs or service equipment contained therein or attached thereto for the purpose of determining compliance with the provisions of this code and other applicable building laws and rules. Officers and employees of the department shall identify themselves by exhibiting the official badge of the department; and other authorized representatives of the commissioner shall identify themselves by producing and exhibiting their authority in writing signed by the commissioner. If access is not obtained, the commissioner shall have recourse to remedies provided by law to secure entry.

§28-103.13 Department records. The department shall keep official records of applications received, permits and certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for retention of public records.

§28-103.13.1 Complaint records. The department shall keep records of complaints made by any person in reference to any building or other matter under the jurisdiction of the department. Recorded complaints shall include the name and residence of the complainant, the name of the person complained of, the date of the entry of the complaint and any suggested remedies. Except for entries of names and residences of the complainants, such records shall be made available for public examination.

§28-103.13.2 List of permits for cellular antenna. The commissioner shall maintain a separate list of alteration permits issued for the erection or placement of antennae used to provide cellular telephone or similar service or any structure related to such service which shall, at a minimum, set forth the name, business address and business telephone number of the applicant, the date of the application, the date the permit was issued, the location for which the permit was issued, including the premises address and the zoning district, whether residential, commercial, or manufacturing, and the number of permits issued for such purpose at the same location. Such list shall be made available to the public upon request between regular business hours and shall be available to the public in electronic format on a 24-hour basis on the department's website.

§28-103.14 Certain outside work, employment and financial interests of department employees prohibited. It shall be unlawful for any officer or employee of the department to be engaged in conducting or carrying on business as an architect, engineer, carpenter, plumber, iron worker, mason or builder, or any other profession or business concerned with the construction, alteration, sale, rental, development, or equipment of buildings. It shall also be unlawful for such employees to be engaged in the manufacture or sale of automatic sprinklers, fire extinguishing apparatus, fire protection devices, fire prevention devices, devices relating to the means or adequacy of exit from buildings, or articles entering into the construction or alteration of buildings, or to act as agent for any person engaged in the manufacture or sale of such articles, or own stock in any

corporation engaged in the manufacture or sale of such articles.

SECTION 104
MATERIALS, EQUIPMENT AND DEVICES

§28-104.1 *Approval or acceptance required.* Materials, assemblies, equipment and devices (hereinafter collectively referred to as "material" or "materials") that in their use, are required by this code to be approved or accepted shall be subject to the requirements for approval or acceptance set forth in this section and as specified elsewhere in this code. Materials approved or accepted shall be constructed and installed in accordance with such approval or acceptance.

§28-104.1.1 *Reused materials.* The use of reused materials, which meet the requirements of this code for new materials, is permitted. Reused equipment and devices shall not be utilized unless approved by the commissioner.

§28-104.2 *Methods of approval or acceptance.* No material of any manufacturer or producer shall be acceptable for the use intended unless and until such material shall have been approved or accepted for such use in accordance with this section or as otherwise provided in this code.

§28-104.2.1 *Approval by the commissioner.* The review and evaluation of material may be performed by the department and the testing (i) witnessed by a commissioner's representative, or (ii) conducted under the direction of an architect or engineer, or (iii) certified by a nationally recognized testing or evaluation service or laboratory acceptable to the commissioner. The test report showing compliance with code requirements and bearing the signature of the architect or engineer, or the signature of an officer of the testing service or laboratory, as the case may be, shall be filed with the department. The commissioner may require a certificate of the manufacturer or producer, certifying that the material tested was and is equivalent to material of the same kind and quality regularly being manufactured by such manufacturer or producer. Upon the filing of the test report, as provided above, the material may be approved by the commissioner as acceptable for the use intended.

§28-104.2.2 *Acceptance of materials approved by nationally recognized testing or evaluation service.* Except as otherwise provided by this code or by rule, the review and evaluation of material may be performed by a nationally recognized testing or evaluation service acceptable to the commissioner. A certification signed by an officer of such testing or evaluation service attesting to the full compliance of the material with this code shall be submitted to the department along with an acceptable report of the evaluation. Upon submission of these documents, the materials shall be accepted by the commissioner for the use intended. Such evaluation services may be specifically referenced in this code and/or a list of such evaluation services acceptable to the commissioner may be published by the department.

§28-104.2.3 *Other forms of acceptance.* The commissioner may set forth in department rules certain materials or categories of materials that are acceptable for the use intended provided that such material (i) is certified to the department by an architect or engineer as complying with this code, (ii) is produced by an approved fabricator, or (iii) is listed as complying with this code by a nationally recognized testing service or laboratory acceptable to the commissioner.

§28-104.2.4 *Previously issued approvals.* Materials that were previously approved by the board of standards and appeals or by the department before the effective date of this code shall continue to be acceptable for the intended use unless specifically amended or repealed by the commissioner.

§28-104.2.5 *Code test method.* Whenever the code prescribes a method for testing any material, the material shall be tested in accordance with such test method.

§28-104.3 *List of acceptable laboratories, testing and evaluation services and materials.* A current list of all nationally recognized testing or evaluation services and laboratories acceptable to the commissioner for the purpose of testing materials and a current list of all acceptable materials shall be maintained by the department and made available for public inspection.

§28-104.4 *Shipment and delivery certification.* All shipments and deliveries of materials shall be accompanied by a certificate or label certifying that the material shipped or delivered is equivalent to the materials tested and acceptable for use, as provided in this section. Such certificate or label is to be provided (1) by the manufacturer or producer of the material, or (2) by a nationally recognized testing or evaluation service or laboratory acceptable to the commissioner and regularly engaged by the manufacturer or producer to make periodic inspections and/or tests of the material in the course of manufacture or production. In the case of materials previously approved by the board of standards and appeals, the shipment or delivery of the material shall also be accompanied by a tag or label stating that the material has been approved for use by the board, and containing the calendar number under which the material received board approval.

§28-104.5 *Retesting of materials.* All materials tested and acceptable for use, shall be subject to periodic retesting as determined by the commissioner; and any material which, upon retesting is found not to comply with the code requirements or the requirements set forth in the approval or acceptance of such material shall cease to be acceptable for the use intended. During the period for such retesting, the commissioner may require the use of such material to be restricted or discontinued if necessary to secure safety.

§28-104.6 *Conflicting test results.* Whenever there is evidence of conflicting results in the test of any material, the commissioner shall determine the acceptability of the material and/or the acceptable rating for such material.

§28-104.7 *Amendment and repeal.* The commissioner shall have the power to amend or repeal the approval or acceptance of any material.

SECTION 105

ALTERNATIVE MATERIALS, DESIGN, METHODS OF CONSTRUCTION AND EQUIPMENT

§28-105.1 *Approval of alternative materials, design and methods of construction and equipment.* Except as otherwise specifically limited by this code, the provisions of this code are not intended to prevent the installation of any material or to prohibit any alternative engineered design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved by the commissioner. An alternative material, design, method of construction or equipment shall be approved where the commissioner finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. The commissioner may promulgate rules governing approvals issued pursuant to this section.

§28-105.2 *Research reports.* Supporting data, where necessary to assist in the approval of materials not specifically provided for in this code, shall consist of valid research reports from approved sources.

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SECTION 106
PERMITS

§28-106.1 Permits required. It shall be unlawful to construct, enlarge, alter, repair, move, demolish, remove or change the use or occupancy of any building or structure in the city, or to erect, install, alter, repair, or use or operate any sign or service equipment in or in connection therewith, or to erect, install, alter, repair, remove, convert or replace any gas, mechanical or plumbing system in or in connection therewith or to cause any such work to be done unless and until a written permit therefore shall have been issued by the commissioner in accordance with the requirements of this code, subject to such exceptions and exemptions as may be provided in 28-106.2.

§28-106.1.1 Classification of work permits. For the purposes of this code, work permits shall be classified as follows:

- 1. New building permits: for the construction of new buildings.*
- 2. Alteration permits: for the alteration of existing buildings, including removal of existing work.*
- 3. Foundation and earthwork permits: for the construction or alteration of foundations, including earthwork, excavation, and fill.*
- 4. Demolition permits: for the demolition or removal of existing buildings or structures.*
- 5. Plumbing permits: for the installation or alteration of plumbing and plumbing systems, including gas piping. Such permits shall include permits for limited plumbing alterations.*
- 6. Sign permits: for the erection or alteration of signs and sign installations.*
- 7. Equipment work permits: for the installation or alteration of service equipment, including but not limited to air conditioning and ventilating systems, boilers, elevators, escalators, moving walkways, dumbwaiters.*
- 8. Construction equipment permits: for the erection or installation of construction equipment, including but not limited to temporary fences, railings, catch platforms, over-the-sidewalk chutes, footbridges, sheds, and scaffolds.*
- 9. Fire suppression system permits: for the installation and alteration of fire suppression systems, including but not limited to sprinkler systems, standpipe systems, and dry chemical systems. Such permits shall include permits for limited sprinkler alterations and limited standpipe alterations.*

§28-106.1.2 Separate permits required. Separate work permits shall be required, as provided above, except that separate permits for foundations and earthwork, or for the installation or alteration of air conditioning systems, ventilation systems, and heating systems shall not be required whenever such work is included in and forms a part of the construction documents filed for the construction of a new building or the alteration of an existing building.

§28-106.2 Work exempt from permit. Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code, the zoning resolution or any other law or rules enforced by the department. Such exemptions shall not relieve any owner of the obligation to comply with the requirements of or file with other city agencies. Unless otherwise indicated, permits shall not be required for the following:

- 1. Emergency repairs, as set forth in section 28-106.2.1;*
- 2. Minor alterations and ordinary repairs, as set forth in section 28-106.2.2;*
- 3. Certain work performed by a public utility company or public utility corporation, as set forth in section 28-106.2.3;*

4. Ordinary plumbing work, as set forth in section 28-106.2.4;
5. Permits for the installation of signs, as set forth in section 28-106.2.5;
6. Except as specified in section 106.2.2 (definition of "work not constituting minor alterations or ordinary repairs"), categories of work established by the commissioner pursuant to rules.

§28-106.2.1 Emergency repairs. Work that would otherwise require a permit may be performed without a permit to the extent necessary to relieve an emergency condition. An application for a permit shall be submitted within two business days after the commencement of the emergency work. Emergency work may include but shall not be limited to:

1. Erection of sidewalk sheds, fences, or other similar structures to protect the public from an unsafe condition.
2. Stabilization of unsafe structural conditions.
3. Repair of gas leaks.
4. Repair or replacement of heating or hot water equipment servicing residential occupancies during the heating season as established by the New York city housing maintenance code.
5. Replacement of parts required for the operation of a combined standpipe or sprinkler system.

§28-106.2.2 Minor alterations and ordinary repairs. A permit shall not be required for minor alterations and ordinary repairs.

§28-106.2.2.1 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

MINOR ALTERATIONS. Minor changes or modifications in a building or any part thereof, excluding additions thereto, that do not in any way affect health or the fire or structural safety of the building or the safe use and operation of the service equipment therein. Minor alterations shall not include any of the work described as "work not constituting minor alterations or ordinary repairs."

ORDINARY REPAIRS. Replacements or renewals of existing work in a building, or of parts of the service equipment therein, with the same or equivalent materials or equipment parts, that are made in the ordinary course of maintenance and that do not in any way affect health or the fire or structural safety of the building or the safe use and operation of the service equipment therein. Ordinary repairs shall include the repair or replacement of any plumbing fixture, piping or faucets from any exposed stop valve to the inlet side of a trap. Ordinary repairs shall not include any of the work described as "work not constituting minor alterations or ordinary repairs."

WORK NOT CONSTITUTING MINOR ALTERATIONS OR ORDINARY REPAIRS. Minor alterations or ordinary repairs shall not include:

1. The cutting away of any load bearing or required fire rated wall, floor, or roof construction, or any portion thereof;
2. The removal, cutting, or modification of any beams or structural supports;
3. The removal, change, or closing of any required means of egress;
4. The rearrangement or relocation of any parts of the building affecting loading or exit requirements, or light, heat, ventilation, or elevator requirements;
5. Additions to, alterations of, or rearrangement, relocation, replacement, repair or removal of any portion of a standpipe or sprinkler system, water distribution system, house sewer, private sewer, or drainage system, including leaders, or any soil, waste or vent pipe, or any gas distribution system;
6. Any plumbing work other than the repair or replacement of plumbing fixtures, piping or

faucets from the exposed stop valve to the inlet side of a trap;

7. *The alteration or repair of a sign for which a permit is required; or*
8. *Any other work affecting health or the fire or structural safety of the building or the safe use and operation of the service equipment therein.*

§28-106.2.3 Public utility company or public utility corporation. A permit shall not be required for:

1. *The installation, alteration or repair of generation, transmission, distribution or metering or other related equipment of a public utility company or a public utility corporation subject to the jurisdiction of the public service commission, when such work is performed and serviced and maintained by such public utility company or corporation; or*
2. *Emergency repair of gas distribution piping when such work is performed by public utility company or public utility corporation subject to the jurisdiction of the public service commission, provided that a written report describing the details of such repairs shall be filed with the commissioner upon completion of the work.*

§28-106.2.4 Ordinary plumbing work. The following ordinary plumbing work may be performed without a permit, provided that the licensed plumber performing such work: (i) provides a monthly notification to the department listing all such work performed during the preceding month, including the block, lot and address of each job, a description of the work performed at each address, and the location in each building where the work was performed; (ii) pays the fees for such work in accordance with this code; and (iii) submits to the department a certification that the work was performed in accordance with this code and all applicable laws and rules. Ordinary plumbing work shall include:

1. *The removal of a domestic plumbing system not connected to a fire suppression system, or the removal of a portion of such system;*
2. *The relocation of up to two plumbing fixtures within the same room to a maximum of 10 feet (3048 mm) distant from the original location, except in health care facilities;*
3. *The installation, replacement or repair of a food waste grinder (food waste disposal) or back flow preventer and the replacement or repair of a sump pump;*
4. *The replacement of closet bends;*
5. *In residential buildings occupied by fewer than six families, the replacement of a gas water heater or a gas fired boiler with a capacity of 350,000 BTU or less where the existing appliance gas cock is not moved, provided that the plumber has inspected the chimney and found it to be in good operational condition;*
6. *The repair or replacement of any non-gas, non-fire suppression piping not longer than 10 feet (3048 mm) inside a building, or connected piping previously repaired or replaced under this provision; and*
7. *The repair or replacement of branch piping after the riser shutoff valve, including the replacement of fixtures, limited to two bathrooms and one kitchen per building per monthly reporting period.*

§28-106.2.5 Sign permits: A sign permit shall not be required where the sign is:

1. *Painted directly on the exterior wall surface of a building or on the surface of a fence.*
2. *A wall sign of not more than six square feet in area.*
3. *Erected by employees of a city agency, including traffic and other similar signs.*
4. *A ground sign advertising the sale or rental of the premises on which it is erected, provided the sign does not exceed twelve square feet in area.*

5. *Temporary and erected during construction work and related thereto.*
6. *Temporary for special decorative display use for holidays, public demonstrations, or the promotion of civic, welfare or charitable purposes, except that signs that utilize streets or cross streets shall be subject to the requirements of the department of transportation.*

§28-106.3 Application for permit. All applications for permits shall be submitted on forms furnished by the department and shall include applicable construction documents required by this code, other applicable law or the rules of the department.

§28-106.3.1 Special provisions for foundation and earthwork permits. Applications for foundation and earthwork shall include:

1. Proof that at least five days prior written notice of the permit application has been given by the applicant to the owners of all adjoining lots, buildings and service facilities that may be affected by the proposed foundation work or earthwork operations;

2. Satisfactory evidence that the property is free from any lien for unpaid city taxes, assessments, water rates, bail bonds, or judgments obtained by the city, together with consent in writing of the mortgagee, if there is a mortgagee upon the property, and the consent in writing of the surrogate's court or supreme court, if the owner of the property is a minor or incompetent.

3. Notice to the department, 48 hours prior to the commencement of foundation or earthwork.

§28-106.3.2 Special provisions for demolition permits. Applications for demolition permits shall include:

1. Utility certifications. Certifications by the respective utility companies or governmental agencies having jurisdiction that all gas, electric, water, steam and other service lines to the building have been disconnected as provided for in the New York city building code.

2. Notice to adjoining owners. Proof that at least fifteen days and no more than ninety days prior written notice of the permit application has been given by the applicant to the owners of all adjoining lots, buildings and service facilities that may be affected by the proposed demolition work.

3. Certification of rodent extermination. Certification in accordance with department rules that the building has been treated effectively for rodent extermination.

4. Notice to department. The permit holder shall provide the department with 48 hours notice prior to the commencement of demolition work.

§28-106.3.3 special provisions for signs. sign permits shall be subject to the following special provisions:

1. every sign permit shall have an identification number.

2. the changing of copy on a sign not permitted for changeable copy or any structural change of the sign or sign structure shall require a new permit pursuant to this code. no permit for the erection, alteration or installation of a sign or sign structure issued pursuant to this code shall be deemed to constitute permission or authorization to maintain a sign that would otherwise be illegal without a maintenance permit for an outdoor sign as required pursuant to this code or that is otherwise illegal pursuant to any other provision of law nor shall any permit issued hereunder constitute a defense in an action or proceeding with respect to such an unlawful sign.

3. The application shall be accompanied by the name and business address of the licensed sign hanger who is to perform or supervise the proposed work.

4. *If the sign or sign location is under the control of an outdoor advertising company, as defined in this code, the application shall be accompanied by the name and, where provided by rule, the registration number of such outdoor advertising company.*

§28-106.3.4 Special provisions for construction equipment permits. Construction equipment permits shall be subject to the following special provisions:

1. *Each applicant for a permit shall state the particular reason that the particular equipment is needed.*
2. *The term of such permit shall be one year, or the expiration of the contractor's insurance, if such time period is less than one year and shall be renewable.*
3. *where a permit authorizes the erection of a sidewalk shed in connection with the alteration of a building, such permit shall be renewable only upon the submission of a report, acceptable to the commissioner, of an architect or engineer who has conducted a thorough examination of that part of the premises on which the applicable work is being conducted. such report shall clearly document the condition of the applicable part of the premises and the scope of work that has been performed thereon since the issuance of the permit and shall provide an estimate of the additional time needed to complete the work. permit renewal applications for sidewalk sheds shall include the name and address of the owner of the premises.*

§28-106.3.5 Special provisions for permits involving mandatory sewer and catch basin work. Applications for mandatory sewer or catch basin work shall comply with the following:

1. *Certification. An applicant for a permit who is required pursuant to section 24-526 of the administrative code to construct or repair defects in sewers or catch basins that lie outside the property shall submit certification from the department of environmental protection that the applicant or owner has provided the department of environmental protection with:*
 - 1.1. *A performance bond or other security satisfactory to the department of environmental protection and approved as to form by the law department of the city for the full cost, as estimated by such department, of constructing the part of the storm water drainage system for such property which shall lie outside the property and repairing defects in such construction, if and as required by section 24-526 of the administrative code;*
 - 1.2. *A license or other written instrument that the department of environmental protection or the law department of the city may reasonably request that gives the department of environmental protection, its agents and contractors the surety for a performance bond described in 1.1 above the legal right to enter private property to perform the work described in 1.1 above, pursuant to the terms of the performance bond or in accordance with the conditions of acceptance of other security described in 1.1 above, and the legal right to connect to, to extend or to discharge storm water into any private sewer authorized as a point of disposal pursuant to section 24-526 of the administrative code, in the event that the owner of property fails to do so, if and as required pursuant to section 24-526 of the administrative code;*
 - 1.3. *Insurance of a kind and in an amount that the department of environmental protection and the law department of the city deem satisfactory to insure the city fully for all risks of loss, damage to property or injury to or death of persons to whomever occurring, arising out of or in connection with the performance of all work described in this section.*

2. *City obligations.* The provisions of this section shall not be construed to abrogate or contravene any contractual obligation of the city to construct storm water drainage systems or parts thereof. The requirements of this section shall be inapplicable to an application for a new building insofar as they relate to any construction work required to be performed by the city pursuant to such a contractual obligation.

§28-106.3.6 *Insurance.* Where required by this code or by the department, applications shall include proof of insurance, including workers compensation, employee disability, and liability.

§28-106.3.7 *Site safety plan.* Where required by this code or by the department, applications shall include a site safety plan.

§28-106.4 *Fees.* Applications for permits shall be accompanied by the payment of appropriate fees as provided for in section 28-126.

§28-106.5 *Time limitation of applications.* An application for a permit shall be deemed to have been abandoned twelve months after the date of its submission, unless such application has been diligently prosecuted after rejection in whole or in part, or a permit shall have been issued except that the commissioner may, for reasonable cause, and upon payment of all reinstatement fees as provided for in this code, grant extensions of time for additional twelve month periods.

§28-106.6 *Validity of Permit.* The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other law. Permits presuming to give authority to violate or cancel the provisions of this code or other law shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the commissioner from requiring the correction of errors in the construction documents and other data. The commissioner is also authorized to prevent occupancy or use of a structure where in violation of this code or of any other laws or rules enforced by the department.

§28-106.6.1 *Duration of Permit.* Permits may be issued for a period of up to two years unless otherwise limited by law.

§28-106.6.2 *Signature of commissioner on permit.* Every permit issued by the commissioner shall have his or her signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

§28-106.7 *expiration.* all permits issued by the commissioner shall expire by limitation and become invalid if the permitted work or use is not commenced within twelve months from the date of issuance of the permit or, if commenced, is suspended or abandoned for a period of twelve months thereafter. all permits for work in a special flood hazard area pursuant to the new york city building code shall expire if the actual start of permanent construction has not occurred within one hundred eighty-eight days from the date on which such permit is issued. the commissioner may, however, upon good cause shown, reinstate a work permit at any time within a period of two years from the date of issuance of the original permit, provided that the work shall comply with all the requirements of this code and other applicable laws and rules in effect at the time application for reinstatement is made, and provided further that the applicant shall pay all reinstatement fees as required by section 28-126.

§28-106.8 *Suspension or revocation of permit.* The commissioner is authorized to suspend or revoke a permit issued under the provisions of this code as follows:

§28-106.8.1 *Notice of proposed revocation.* The commissioner may, on written notice to the permit holder, revoke any permit for failure to comply with the provisions of this code or other applicable laws or rules; or whenever there has been any false statement or any misrepresentation as to a material fact in the application for permit

approval upon the basis of which such approval was issued; or whenever a permit has been issued in error and conditions are such that the permit should not have been issued. Such notice shall inform the permit holder of the reasons for the proposed revocation and that he or she has the right to present to the commissioner or his or her representative within 10 business days of delivery of the notice by hand or 15 calendar days of the posting of notice by mail, information as to why the permit should not be revoked.

§28-106.8.2 *Immediate suspension in cases of imminent peril.* The commissioner may immediately suspend any permit without prior notice to the permit holder when the commissioner has determined that an imminent peril to life or property exists. The commissioner shall forthwith notify the permit holder that the permit has been suspended and the reasons therefore, that it is proposed to be revoked, and that the permit holder has the right to present to the commissioner or his or her representative within 10 business days of delivery of the notice by hand or 15 calendar days of the posting of notice by mail information as to why the permit should not be revoked.

§28-106.9 *Posting of permit.* The building permit or copy shall be posted in a conspicuous place at the work site, open to public inspection during the entire time of the prosecution of the work or the use and operation of the equipment, or until the expiration of the permit. No such permit shall be posted or displayed at any location other than the location of the premises or equipment for which the permit was issued.

§28-106.10 *Conditions of permit.* Permits shall be subject to the following conditions:

§28-106.10.1 *Compliance with code.* Permits shall be deemed to incorporate the provisions that the applicant, the owner, their agents, employees, and contractors shall carry out the permitted work or use in accordance with the provisions of this code and other applicable laws or rules, whether specified or not, except as variations have been legally permitted or authorized.

§28-106.10.2 *Compliance with construction documents.* All work shall conform to the approved plans and documents, and any approved amendments thereto. Changes and revisions during the course of construction shall conform to the amendment requirements of this code.

§28-106.10.3 *adherence to lot diagram.* all work shall be strictly located in accordance with the lot diagram approved in accordance with this code and no lot or plot shall be changed, increased or diminished in area from that shown on the approved lot diagram, unless and until a revised diagram showing such changes, accompanied by the necessary statement of the owner or applicant, shall have been submitted to and approved by the commissioner.

§28-106.10.4 *compliance with safety requirements.* all work shall be conducted in accordance with and subject to the safety requirements of this code and other applicable laws or rules, including any order or requirement of the commissioner that the building or structure under construction or alteration be vacated, in whole or in part, during the progress of the work and until the issuance of a certificate of occupancy. adjoining lots and properties shall be protected in accordance with the new york city building code.

§28-106.10.5 *hours of construction operations.* all work shall be performed in compliance with the provisions of section 24-224 of the administrative code. failure to comply with such provisions shall be a violation of this code.

SECTION 107

CONSTRUCTION DOCUMENTS

§28-107.1 General. The department shall not issue a permit pursuant to this code, or a place of assembly operation certificate pursuant to this code unless and until it approves or accepts all required construction documents for such work. The department shall not issue an electrical work permit pursuant to the New York city electrical code for fire and emergency alarm systems unless and until it approves or accepts all required construction documents for such work. Such construction documents shall be prepared by or under the supervision of an architect or engineer as required by this code.

§28-107.2 Definitions. The following words and terms shall, for the purposes of this section and elsewhere in the code, have the meanings shown herein.

CONSTRUCTION DOCUMENTS. Completed application forms submitted with any other required written, graphic and pictorial documents, prepared or assembled for describing the design, location and physical characteristics of the elements of a project, including special inspection and other data, that demonstrate compliance with the code or other applicable laws and rules. Where required by this code or by the department, construction documents shall also include certifications or approvals from other governmental agencies.

CONSTRUCTION DOCUMENT ACCEPTANCE. The acceptance by the department of submitted construction documents certified by an architect or engineer as complying with this code and other applicable laws and rules.

CONSTRUCTION DOCUMENT APPROVAL. The determination by the department that submitted construction documents comply with this code and other applicable laws and rules.

FIRE PROTECTION PLAN. A report containing a narrative description of the life and fire safety systems and evacuation system for a structure, in accordance with this code.

LIMITED PLUMBING ALTERATIONS. An alteration to a plumbing system where the total cost of the proposed work in the building does not exceed \$25,000 in any 12 month period and the proposed work comprises any of the following:

- 1. The installation of new plumbing or gas piping, or the rerouting of existing plumbing or gas piping;*
- 2. The addition of not more than two plumbing fixtures or fixture connections;*
- 3. The mounting of new plumbing fixtures on existing roughings, other than the mere replacement of existing fixtures constituting a minor alteration or ordinary repair under this code;*
- 4. The installation or replacement of backflow preventers.*

LIMITED SPRINKLER ALTERATIONS. An alteration to an existing sprinkler system where the total cost of the proposed work in the building does not exceed \$25,000 in any 12 month period and the proposed work comprises any of the following:

- 1. Replacement of parts required for the operation of a sprinkler system;*
- 2. Replacement of sprinkler heads, provided that orifice sizes, type and deflector positions remain the same;*
- 3. Changes that do not alter the type of sprinkler system;*
- 4. Relocation of piping that does not affect the operation of the sprinkler system;*
- 5. Rearrangement of not more than 20 sprinkler heads in areas presently sprinklered in light hazard occupancy, as such term is defined in reference standards, which will remain in such occupancy, provided that the addition of*

sprinkler heads in existing systems shall be limited to light hazard occupancies in rooms or spaces not exceeding 800 sq. ft (74.3 m²) requiring only one head with the maximum spacing allowed by the code, and provided that the number of new heads does not exceed a total of five.

LIMITED STANDPIPE ALTERATIONS. An alteration to an existing standpipe system where the total cost of the proposed work in the building does not exceed \$25,000 in any 12 month period and the proposed work comprises any of the following:

1. Replacement of parts required for the operation of a combined standpipe system;
2. Relocation of combined standpipe auxiliary hose sources and cabinets within 10 ft (3 m) of their original location, provided that the existing covered area is not affected and provided that such relocation complies with this code for a new installation.

§28-107.3 Examination of documents. All construction documents and any amendments thereto filed with the department shall be numbered, docketed and examined promptly after their submission. The examination shall be made under the direction of the commissioner for compliance with the provisions of this code and other applicable laws and rules. The commissioner may, at his or her discretion, when the applicant is an architect or engineer, accept the construction documents without examination or with such limited supervisory check by the department as the commissioner finds necessary. The personnel employed for examination of plans shall be qualified engineers or architects experienced in building construction and design.

§28-107.3.1 Approval and acceptance of construction documents. All construction documents, when approved or accepted, shall be stamped or endorsed approved or accepted under the official method of the department, followed by a notation of the date of construction document approval or acceptance. One set of such plans shall be retained by the department.

§28-107.3.2 Time limitation of application. An application shall be deemed to have been abandoned twelve months after date of submission, unless such application has been diligently prosecuted after rejection in whole or in part, or unless a permit shall have been issued pursuant to this code, except that the commissioner may upon application, for reasonable cause, grant extensions of time for additional twelve month periods.

§28-107.3.3 Conditions of approval. All construction documents approved or accepted by the commissioner shall be subject to compliance with the requirements of this code and other applicable laws and rules in effect at the time of issuance of the associated work permit code or public assembly operation certificate.

§28-107.3.4 Phased or partial approval. In the case of plans for the construction of new buildings or alteration of existing buildings, the commissioner may grant partial approval or acceptance for the issuance of foundation and earthwork permits before the construction documents for the entire building or structure have been submitted. The approval or acceptance of such partial applications will be subject to the submittal, and approval or acceptance, of construction documents, filed together or separately, comprising:

1. The lot diagram and calculations showing compliance with the zoning resolution, as provided for in this code.
2. The foundation plans, as provided for in this code.
3. The floor and roof plans showing compliance with exit requirements, as provided for in this code. The owner and the holder of such permit for the foundation or other partial work shall proceed at their own risk with the construction operation and without

assurance that a permit for the entire structure will be granted.

§28-107.3.5 *Deferred submittals.* For the purposes of section 28-107, deferred submittals are defined as those portions of the design or construction documents that are not submitted at the time of the application and that are to be submitted to the department within a specified period. Deferral of any submittal items shall have the prior approval of the commissioner. The applicant shall list the deferred submittals on the construction documents for review by the commissioner. The deferred submittal items shall not be installed until the design and submittal documents have been approved or accepted by the department.

§28-107.3.6 *Time period for review.* Completed construction documents complying with the provisions of this code and other applicable laws and rules shall be approved or accepted by the commissioner and written notice of approval or acceptance shall be given the applicant promptly and no later than forty calendar days after the submission thereof.

Exceptions:

1. On or before the fortieth day, the commissioner may for good cause shown, and upon notification to the applicant, extend such times for an additional twenty calendar days.

2. Such time period for review shall commence in accordance with section 28-120 for single room occupancy multiple dwellings.

§28-107.3.7 *Notification of rejection.* Applications failing to comply with the provisions of this code and other applicable laws and rules shall be rejected and written notice of rejection, stating the grounds of rejection, shall be given the applicant promptly and not later than the date required in section 28-107.3.6.

§28-107.3.8 *Resubmission.* Whenever an application has been rejected and is thereafter revised and resubmitted to meet stated grounds of rejection, the revised application and plans shall be approved or accepted if they meet the stated grounds of rejection, or shall be rejected if they fail to meet the stated grounds of rejection; and written notice of approval or acceptance or written notice of rejection, stating the grounds of rejection, shall be given the applicant promptly and not later than twenty calendar days after the resubmission thereof.

§28-107.3.9 *Notice of proposed revocation of approval or acceptance.* The commissioner may, on notice to the applicant, revoke any approval or acceptance for failure to comply with the provisions of this code or other applicable laws or rules; or whenever there has been any false statement or any misrepresentation as to a material fact in the application for approval or acceptance upon the basis of which such approval or acceptance was issued; or whenever an approval or acceptance has been issued in error and conditions are such that approval or acceptance should not have been issued. Such notice shall inform the applicant of the reasons for the proposed revocation and that he or she has the right to present to the commissioner or his or her representative within 10 business days of personal service or 15 calendar days of the posting of service by mail, information as to why the approval or acceptance should not be revoked.

§28-107.3.9.1 *immediate suspension in cases of imminent peril.* the commissioner may immediately suspend any approval or acceptance without prior notice to the applicant when the commissioner has determined that an imminent peril to life or property exists. the commissioner shall forthwith notify the applicant that the approval or acceptance is proposed to be revoked and the reasons therefore and that the applicant has the right to present to the commissioner or his or her representative within 10

business days of personal service or 15 calendar days of the posting of service by mail information as to why the approval or acceptance should not be revoked.

§28-107.3.9.2 Effect on work permit. The effect of revocation of approval or acceptance is the automatic revocation of all work permits thereunder.

§28-107.4 Amended construction documents. Subject to the time limitations set forth in this code, amendments to applications shall be submitted, reviewed and approved or accepted before the final inspection of the work or equipment is completed; and such amendments shall be deemed part of the original application. Minor changes and revisions may be submitted after the completion of work; all other changes shall be filed as amendments in a timely manner prior to or during the course of construction.

§28-107.5 Place of filing. Except as otherwise provided by rule, applications shall be filed in the department office in the borough in which the work or equipment is located or at the discretion of the commissioner may be submitted electronically.

§28-107.6 Fees. Filing fees shall be paid as required by section 28-126.

§28-107.7 Applicant. The applicant shall be the architect or engineer who prepared or supervised the preparation of the construction documents on behalf of the owner.

Exception: The applicant may be other than an architect or engineer for:

- 1. Limited plumbing alterations, limited sprinkler alterations, and limited standpipe alterations, where the applicant is licensed to perform such work pursuant to this code;*
- 2. Demolition applications, where the applicant is the demolition contractor performing such demolition;*
- 3. Other categories of work consistent with rules promulgated by the commissioner.*

§28-107.7.1 Filing representative. Only persons authorized pursuant to this code may, on behalf of the owner or the applicant, present, submit, furnish or seek approval of applications or remove any documents from the possession of the department.

SECTION 108 SUBMITTAL OF CONSTRUCTION DOCUMENTS

§28-108.1 Submittal of construction documents. All construction documents submitted to the department as part of an application for a permit shall contain such information and shall be in such form as shall be set forth in this section.

- 1. Forms. Construction documents shall be submitted on or be accompanied by forms provided by the department.*
- 2. Media. Construction documents shall be printed upon suitable material, or presented as electronic media documents in accordance with rules promulgated by the commissioner.*
- 3. Quantities. The applicant shall submit the number of copies of construction documents as the commissioner shall require.*
- 4. Scope. Construction documents including plans shall be complete and of sufficient clarity to indicate the location and entire nature and extent of the work proposed, and shall show in detail that they conform to the provisions of this code and other applicable laws and rules; if there exist practical difficulties in the way of carrying out the strict letter of the code, laws or rules, the applicant shall set forth the nature of such difficulties.*
- 5. City Datum. All elevations noted in the construction documents shall be referred to and clearly identified as the United States coast and geodetic survey mean*

sea level datum of 1929 (national geodetic vertical datum, "NGVD"), which is hereby established as the city datum. By way of examples, tables 108.8.5.1 through 108.8.5.5 shall be used to convert borough elevations to their corresponding equivalent NGVD elevations.

TABLE 108.8.1.5.1

<i>BRONX</i> <i>Elevations</i>	<i>To obtain</i> <i>equivalency:</i>	<i>NGVD</i> <i>Elevations</i>
10.000	→ add 2.608 →	12.608
7.392	→ add 2.608 →	10.000

TABLE 108.8.1.5.2

<i>BROOKLYN</i> <i>Elevations</i>	<i>To obtain</i> <i>equivalency:</i>	<i>NGVD</i> <i>Elevations</i>
10.000	→ add 2.547 →	12.547
7.453	→ add 2.547 →	10.000

TABLE 108.8.1.5.3

<i>MANHATTAN</i> <i>Elevations</i>	<i>To obtain</i> <i>equivalency:</i>	<i>NGVD</i> <i>Elevations</i>
10.000	→ add 2.752 →	12.752
7.248	→ add 2.752 →	10.000

TABLE 108.8.1.5.4

<i>QUEENS</i> <i>Elevations</i>	<i>To obtain</i> <i>equivalency:</i>	<i>NGVD</i> <i>Elevations</i>
10.000	→ add 2.725 →	12.725
7.275	→ add 2.725 →	10.000

TABLE 108.8.1.5.5

+STATEN ISLAND Elevations	To obtain equivalency:	NGVD Elevations
10.000	→ add 3.192 →	13.192
6.808	→ add 3.192 →	10.000

6. *Additional information.* In addition to the data and information specified in this code and under the rules of the department, the commissioner is authorized to require the submission of additional plans, surveys, computations, test reports, photographs, and such other data and information as may be necessary to comply with the code and other applicable laws and rules.

7. *Waiver of certain documents.* The commissioner is authorized to waive the submission of any of the required construction documents if review of such documents is not necessary to obtain compliance with this code.

§28-108.2 *Applications.* All applications shall contain a general description of the proposed work and other pertinent information as the commissioner may require.

§28-108.2.1 *Applicant statements.* The application shall contain signed statements by the applicant:

1. *Stating that the applicant is authorized by the owner to make the application and certifying that, to the best of the applicant's knowledge and belief, the construction documents comply with the provisions of this code and other applicable laws and rules; if there exist practical difficulties in the way of carrying out the strict letter of the code, laws or rules, the applicant shall set forth the nature of such difficulties in such signed statement; and*
2. *Certifying (i) that the site of the building to be altered or demolished, or the site of the new building to be constructed, contains no occupied housing accommodations subject to rent control or rent stabilization under chapters 3 and 4 of title 26 of the administrative code, or (ii) that the owner has notified the New York state division of housing and community renewal of the owner's intention to file such plans and has complied with all requirements imposed by the regulations of such agency as preconditions for such filing; or (iii) that the owner has not notified such agency of the owner's intention to file because the nature and scope of the work proposed, pursuant to such regulations, does not trigger a requirement for notification.*

§28-108.2.2 *Owner statement.* The application shall contain a signed statement by the owner, cooperative owners' corporation, or condominium owners' association stating that the applicant is authorized to make the application. Such statement shall list the owner's full name and address, as well as the names of the principal officers, partners or other principals if a corporation, partnership or other entity, where the principal officers of a corporation include the president, vice presidents, secretary and treasurer.

§28-108.2.3 *Information of applicant, filing representative, and owner.* The

application shall set forth the full names, addresses, telephone numbers, and where available, e-mail addresses of the following persons and where any of such persons are corporations, partnerships or other business entities, the names and addresses of the principal officers, partners or other principals of such entity:

1. The applicant,
2. The filing representative,
3. The owner, cooperative owners' corporation, or condominium owners' association, and
4. Where a person other than the owner has engaged the applicant, such cooperative unit shareholder, condominium unit owner, lessee, or mortgagee.

§28-108.2.4 Identification of materials, equipment, assemblies and devices. All materials, equipment, assemblies and devices required to be approved or accepted shall be described and identified in the application by their make, model number, and approval number or other identifying information.

§28-108.2.5 Energy conservation code. The application shall contain information required to demonstrate compliance with the energy conservation construction code of New York state.

SECTION 109

NEW BUILDING APPLICATIONS

§28-109.1 Plans for new buildings. In addition to the requirements otherwise prescribed, all applications for new buildings shall include architectural, structural, and mechanical plans complying with this section.

§28-109.2 General plan requirements. The following provisions shall apply to plans for new buildings:

1. *Scope.* Plans submitted shall be complete and of sufficient clarity to indicate the location and entire nature and extent of the work proposed and show in detail that such plans will conform to the provisions of this code and other applicable laws and rules.
2. *Composite plans.* Composite plans showing architectural, structural, and mechanical parts of a building may be submitted provided that a clear understanding of each part is not impaired.
3. *Multiple building developments.* The same set of plans may be used for several buildings of the same construction, if such buildings are located on adjoining lots under the same ownership, and if construction document approval applications therefore are filed simultaneously.
4. *Format.* All such plans shall be drawn to suitable scale and shall be reproduced upon media as the commissioner may require.
5. *Preparer.* Each plan or drawing shall contain the registration number, seal, signature (or equivalent as approved by the commissioner) and address of the architect or engineer who prepared or supervised the preparation of the plans.
6. *Identification of special inspections.* Whenever equipment, materials, assemblies, forms, or methods of construction are subject to special inspection, as provided in this code, all such equipment, materials, assemblies, forms, or methods of construction shall be listed on the title sheet of the plans, or the sheet immediately following, as subject to special inspection.
7. *Citations to code sections required.* In no case shall terms such as "code compliant," "approved," "legal" or similar terms be used in the construction documents as a substitute for specific reference to a particular code section,

approval, or standard in order to show compliance with code requirements or other applicable laws and rules.

§28-109.3 *Architectural plans for new buildings.* Architectural plans for new buildings shall include the following data and information:

1. *Lot diagram.* A diagram showing compliance with the New York city zoning resolution, indicating: the size, height, and location of the proposed construction including parking and curb cuts; all existing structures on the zoning lot and their distances from lot and street lines; the established grade and existing curb elevations; and the final grade elevations of the site shown by contours or spot grades at reasonable intervals. The lot diagram shall be drawn in accordance with an accurate boundary survey, made by a licensed surveyor, which shall be attached to and form part of the application. Zoning calculations shall accompany the lot diagram with citation to the relevant sections of the New York city zoning resolution.
2. *Building classification.* A statement or notation as to the occupancy group or groups that apply to the building and all parts thereof, the construction class of the building, the height of the building, whether the building is inside or outside of the fire districts, and, for multiple dwellings, the multiple dwelling classification as established by the New York state multiple dwelling law.
3. *Egress plans.* Floor and roof plans showing compliance with exit requirements, with sufficient notations indicating egress features and complete egress analysis as required by this code.
4. *Detailed drawings.* Detailed drawings of all architectural elements of the building necessary to show compliance with the code, including but not limited to those door, window and interior finish schedules, and other details necessary to substantiate all required fire-protection characteristics, and other details demonstrating compliance with the accessibility requirements of this code. Site safety features shall be shown where applicable.

Exception: Where a curtain wall system is to be employed containing elements that are normally detailed on shop or working drawings, approval or acceptance of construction documents shall be conditioned upon future submission of such shop or working drawings showing the approval of an architect or engineer with regard to such elements, or of a signed statement by an architect or engineer to the effect that such drawings were prepared to his or her satisfaction. In such cases, the construction document requirement for the New York state energy conservation construction code related to such curtain wall may be submitted with such future submission.

§28-109.4 *Structural plans for new buildings.* Structural plans for new buildings shall include the data and information described in sections 28-109.4.1 through 28-109.4.8.

Exceptions:

1. Where structural elements addressed by sections 28-109.4.1 through 28-109.4.8 are normally detailed on shop or working drawings, approval or acceptance of construction documents shall be conditioned upon future submission of such shop or working drawings showing the approval of an architect or engineer with regard to such elements, or of a signed statement by an architect or engineer to the effect that such drawings were prepared to his or her satisfaction.
2. In cases where the detailing of structural elements addressed by sections 28-109.4.1 through 28-109.4.8 has been made on the basis of fire-resistance

ratings, load tables, or similar data as given in manufacturer's catalogues, approval or acceptance of construction documents shall be conditional upon submission of a statement by the manufacturer, or of other supporting documentary evidence of accreditation furnished by the manufacturer, attesting to the accuracy of the data and stating that such data were derived in conformance with the provisions of this code. Where the detailing of structural elements has been made on the basis of data published in technical documents of recognized authority issued by, or accredited by, the agency or association promulgating the applicable reference standard cited in this code, such statements will not be required.

§28-109.4.1 *Foundation plans.* Foundation plans shall show compliance with the requirements of this code regarding foundation design and shall show the plan locations, design elevations of the bottoms, and details as to sizes, reinforcements, and construction of all footings, piers, foundation walls, pile groups, and pile caps. The levels of footings of adjacent structures shall be indicated or, if the adjacent structures are pile supported, this shall be so stated. Where applicable, the plans shall include underpinning details. In addition, there shall be a statement indicating the character and minimum class of the soil strata required for the support of the foundation; the allowable soil pressure used for the design of footings; and the character, class, and presumptive bearing capacity of the bearing stratum to which piling is required to penetrate. The types and design capacities of piling and the records of required borings or test pits shall also be shown.

§28-109.4.2 *Floor plans.* Floor plans and sections showing all structural requirements shall be provided for all levels.

§28-109.4.3 *Detailed drawings.* Drawings showing sizes, sections, and locations of members, and such other information as may be required to indicate clearly all structural elements and special structural engineering features.

§28-109.4.4 *Calculations.* A tabulation of the vertical live loads, both uniform and concentrated (including allowances of partition loads), used in the design of the several areas and levels of the building. The locations and loads of each piece of machinery and equipment having a weight in excess of one thousand pounds shall be noted.

§28-109.4.5 *Column schedules.* Schedules showing the design load contributed by the framing at any level and the total accumulated design load at each level.

§28-109.4.6 *Truss forces.* Where trusses are employed, a diagram or table indicating the loads or moments in the various members under the design loading conditions. The requirement for a diagram or table will be waived when the trusses consist of elements selected from load tables or similar data, subject to the requirements for verification described in this code.

§28-109.4.7 *Prestressing forces.* Where prestressed members are employed, a schedule or table showing the total prestressing forces and the method and sequence of application.

§28-109.4.8 *Seismic design features.* Details and analysis demonstrating compliance with seismic forces shall be shown on plans.

§28-109.5 *Mechanical plans for new buildings.* Mechanical plans for new buildings shall include the following:

1. *Scope.* The plans shall indicate the plumbing, heating, ventilating, refrigeration, and other mechanical work to be performed, so drawn as to conform to the architectural and structural aspects of the building and to show

in detail compliance with the New York city plumbing code, fuel gas code, and mechanical code. If desired, plans may be composite plans showing one or more types of systems on each plan, provided that a clear understanding of each system shown is not thereby impaired.

2. Detailed plans and data. Details for each type of work to be performed, and for each type of equipment to be installed shall be shown, as provided in the section 28-113 (plumbing applications), section 28-115 (service equipment applications), section 28-116 (fire suppression piping system applications), and section 28-117 (fire and emergency alarm system applications).

3. Public sewer. In the event that a public sewer system is not available, alternate provisions for disposal of storm water and sanitary sewage shall be shown. If private sewers are to be constructed pursuant to subdivision b of section 1403 of the New York city charter, a copy of the sewer plan shall be included. If a private sewage treatment plant is to be constructed, a copy of plans of the plant approved by the New York city department of health and mental hygiene and the New York city department of environmental protection shall be included. If an individual on-site private sewage disposal system is to be installed, a site and subsoil evaluation indicating that the site and subsoil conditions comply with the applicable law and rules shall be included.

SECTION 110 ALTERATIONS

§28-110.1 Plans for alteration work. In addition to the requirements otherwise prescribed, alteration applications shall include such architectural, structural, and mechanical plans as may be necessary to indicate completely and with sufficient clarity the location and entire nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and other applicable laws and rules. To the extent necessary, all plans for the alteration of a building shall be subject to and shall comply with the plan requirements of section 28-109.

§28-110.1.1 Enlargements. Applications for enlargements shall demonstrate:

1. Sewers. Whenever an alteration increases impervious surfaces on the lot by greater than 20%, the applicant shall submit information as to the availability of a public sewer system, as well as the adequacy of any existing system for the disposal of storm water by any means other than storm or combined sewers.

Exception: Where the total area of impervious surfaces after the alteration is less than or equal to 1000 square feet (93m²).

2. Survey. Where an alteration will result in an increase in floor area or increase in foundations, an existing conditions survey complying with this code shall be provided.

§28-110.2 Alteration of buildings containing occupied dwelling units. Construction documents for alterations of buildings in which any dwelling unit will be occupied during construction shall include a "Tenant Protection Plan." Such plan shall indicate in sufficient detail the means and methods to be employed to safeguard the safety and health of the occupants, including, where applicable, details such as temporary fire-rated assemblies, opening protectives, or dust containment procedures. The elements of the tenant protection plan may vary depending on the nature and scope of the work but at a minimum shall make provisions for:

1. Egress. At all times in the course of construction provision shall be made for

adequate egress as required by this code. Required egress shall not be obstructed at any time except where approved by the commissioner.

2. *Fire safety. All necessary laws and controls as well as additional safety measures necessitated by the construction shall be strictly observed.*
3. *Health requirements. Indication of methods to be used for control of dust, disposal of construction debris, pest control and maintenance of sanitary facilities, and limitation of noise to acceptable levels shall be included.*
 - 3.1 *Indication of compliance with applicable provisions of law relating to lead and asbestos.*
4. *Services. Continuation of essential services as required by this code, the New York city housing maintenance code, and, where applicable, the New York state multiple dwelling law shall be included.*
5. *Structural safety. No work shall be done which may endanger the occupants due to structural work.*
6. *Noise restrictions. Where hours of the day or the days of the week in which construction work may be undertaken are limited pursuant to requirements of the department of environmental protection, such limitations shall be stated.*

SECTION 111

FOUNDATION AND EARTHWORK APPLICATIONS

§28-111.1 Additional requirements for foundation and earthwork applications. In addition to the requirements otherwise prescribed, applications for foundation and earthwork shall be accompanied by the following:

1. *A lot diagram;*
2. *Foundation plans, except that when the permit sought is solely for earthwork excavation or fill operations, the applicant shall submit, in lieu of foundation plans, plans showing the exact location, extent, and depth or height of the proposed excavation or fill operation and showing any protective railings or equipment required by this code.*

SECTION 112

DEMOLITION WORK APPLICATIONS

§28-112.1 Demolition applications. In addition to the requirements otherwise prescribed, applications for demolition work shall comply with the following and shall be subject to applicable requirements of section 28-119 (asbestos investigation) and section 28-120 (single room occupancy multiple dwellings):

1. *Archival photographs. Archival photographs shall be required in accordance with the following provisions:*
 - 1.1. *Number required. Applications shall contain two sets of photographs of the building or buildings to be demolished or removed. Both sets shall be received by the department on behalf of the New York city landmarks preservation commission and the New York city municipal archives division of the department of records and information services.*
 - 1.2. *Format. The photographs shall conform to the standards and specifications established by rules promulgated by the commissioner upon the advice of the commissioner of the New York city department of records and information services and the chairperson of the New York city landmarks preservation commission.*

Exceptions: Applications made on behalf of the New York city

department of housing preservation and development or made pursuant to section 28-140 are exempt from the requirements of this section.

SECTION 113
PLUMBING WORK APPLICATIONS

§28-113.1 Plumbing applications. In addition to the requirements otherwise prescribed, applications for plumbing work shall contain plans that include the following data and information. Such plans shall not be required for limited plumbing alterations.

1. *Diagrammatic plans. Single line or diagrammatic plans showing the location, layout, and spacing of all plumbing fixtures, the summation of plumbing loads, the size, location, and material for all building sewers and drains, and the soil, waste, vent, water, and gas distribution piping.*
2. *Floor plans. One floor plan for floors with typical layouts; and stack details shown on one drawing, provided that such details are clearly identified as to location and stack number.*
3. *Riser diagram. The riser diagram shall show story heights, all plumbing fixtures with diagrammatic arrangement of their connections to soil, waste, and vent piping, all soil, waste, and vent stacks from the point of connection with the building drain to their termination above the roof, all leader and storm water piping from the point of connection with the building drain to the roof drain, and all water and gas risers.*
4. *New plumbing systems. In the case of plans for new plumbing systems, and alterations of existing plumbing systems, plans shall indicate:*
 - 4.1. *The relative elevation of the lowest fixture referred to the city datum provided in section §28-106.8.5 and the approximate inside top of the public sewers;*
 - 4.2. *The number, size, and location of all proposed sewer connections and relative location and size of all water mains, leaders, and risers; and*
 - 4.3. *A statement from the New York city department of environmental protection, giving the minimum water pressure in the main serving the building.*
5. *Plans shall clearly indicate all appurtenant equipment, including, but not limited to, pumps, ejectors, water tanks, and piping.*

SECTION 114
SIGN APPLICATIONS

§28-114.1 Sign applications. In addition to the requirements otherwise prescribed, applications for signs shall include the following data and information:

1. *A sketch or drawing showing the size and location of the sign or sign installations in relation to the building or premises upon which the sign is or will be erected and showing compliance with the applicable sections of the zoning resolution and showing the copy, lettering and logos;*
2. *Detail drawings showing the dimensions, materials, and construction of the sign, its supporting members, and the foundation or anchorage thereof;*
3. *A tabulation or diagram of all loads and stresses;*
4. *For illuminated signs projecting beyond the street line, a statement from the department indicating that such department has received an application from a licensed electrician for the electrical work in connection with the installation of*

such signs;

SECTION 115
SERVICE EQUIPMENT APPLICATIONS

§28-115.1 *Service equipment applications. In addition to the requirements otherwise prescribed, construction documents for service equipment applications shall comply with the following:*

1. *Air conditioning and ventilating systems. Applications for air conditioning and ventilating systems shall contain plans that include the following data and information:*
 - 1.1. *The location and sizes of all ducts; the location of all fire dampers, motors, fans, and filters; the type, air capacity, and size of all equipment; and where not shown on accompanying structural plans, the operating weight and manner of support of equipment.*
 - 1.2. *The locations of smoke detecting devices.*
 - 1.3. *The location and size of the fresh air intake, the design population, and the required ventilation for each room or space.*
 - 1.4. *The amount of air to be exhausted or supplied from each outlet for each room or space.*
 - 1.5. *In the case of ventilating or exhaust systems for ranges, fryers, ovens, and other similar types of restaurant or bakery equipment, for which a hood is required, the plans shall also show the type of extinguishing system, the location of heat detection devices, nozzles, piping, gas controls, manual and automatic control valves, method of joining ducts, method and location of discharging exhaust from building, the location of break-glass controls, and the quantity in cfm designed for each hood.*
2. *Elevators. Applications for elevator, escalator, moving walkway and stairway, dumbwaiter, and similar equipment shall contain plans that include the following data and information:*
 - 2.1. *The location of all machinery, switchboards, junction boxes, and reaction points, with loads indicated;*
 - 2.2. *The details of all hoistway conditions including bracket spacing;*
 - 2.3. *The estimated maximum vertical forces on the guide rails on application of the safety device;*
 - 2.4. *In the case of freight elevators for class B or C loading, the horizontal forces on the guide-rail faces during loading and unloading; and the estimated maximum horizontal forces in a postwise direction on the guide-rail faces on application of the safety device;*
 - 2.5. *The size and weight per foot of any rail reinforcements where provided; and*
 - 2.6. *Compliance with the accessibility features of this code.*
3. *Fuel-burning and fuel oil storage equipment. Applications for fuel-burning equipment, fuel-oil storage equipment, and fuel oil distribution piping shall contain plans that include the following data and information:*
 - 3.1. *The kind or grade of fuel to be used;*
 - 3.2. *The location, arrangement, size, load, and maximum capacity of the burning, storage and fuel-pumping equipment;*
 - 3.3. *The method or means of providing air to the equipment space, showing duct and opening sizes;*

- 3.4. *The location, size, and materials for all breechings; the height and size of all chimneys and gas vents; the thickness and type of all insulation materials; and the clearances from combustible walls, partitions, and ceilings; the fire resistive rating of rooms or spaces containing the equipment; and*
- 3.5. *Diagrams of all distribution piping, including vent and fill piping for oil systems, and all safety cut-off and relief devices and valves in piping; indications of the sizes of distribution piping to be used and the fire resistive ratings of the shafts or spaces containing distribution piping where required to be fire rated.*
- 4. *Refrigerating systems. Applications for refrigerating systems shall contain plans that include the following data and information:*
 - 4.1. *The location of all machinery; the horsepower of compressors; the type and number of pounds of refrigerant to be used; and the air quantities for, and means of, ventilating the machinery space.*
 - 4.2. *The location of emergency switches for compressors and for ventilation in the machinery rooms.*
 - 4.3. *The location of pressure relief piping and any city water connections and water-saving devices.*
 - 4.4. *The tonnage capacity of the machine and the suction and discharge pressures at which the machine is rated; and*
 - 4.5. *The operating weight of the equipment.*
- 5. *Heating systems. Applications for heating systems shall contain plans that include the following data and information:*
 - 5.1. *The temperature to be maintained in every room.*
 - 5.2. *The amount of heat in BTU per hour to be provided in every room, and the output capacity in BTU per hour of the central heat sources.*
- 6. *Boilers. Applications for boiler installations and boiler alterations shall contain plans that include the following data and information:*
 - 6.1. *The BTU per hour output capacity and operating weight of each boiler; and the pressure setting of the relief valves; and*
 - 6.2. *Such other data and information as are required to be contained on plans for fuel-burning equipment, as provided for in this code.*

SECTION 116

FIRE SUPPRESSION PIPING SYSTEMS

§28-116.1 Fire suppression piping system applications. In addition to the requirements otherwise prescribed, applications for fire suppression piping systems shall include a plot plan to scale indicating the location of the system in relation to the rest of the building and shall comply with the following. Such plans shall not be required in connection with applications for limited standpipe alterations and limited sprinkler alterations.

- 1. *Standpipe systems. Applications for standpipe systems shall contain plans that include the following data and information:*
 - 1.1. *The locations and sizes of all risers, cross-connections, hose racks, valves, siamese connections, sources of water supply, piping, and other essential features of the system;*
 - 1.2. *A floor plan for each group of floors that have typical riser locations and no special features within such group of floor levels, with the indication*

in title block of such plan indicating clearly the floors to which the arrangement is applicable;

- 1.3. *A riser diagram showing the essential features of the system, including the risers, cross-connections, valves, siamese connections, tanks, pumps, sources of water supply, pipe sizes, capacities, floor heights, zone pressures, and other essential data and features of the system; and*
- 1.4. *The available water pressure at the top and bottom floors of each zone, and at each floor where the weight pipe fittings change, shall be shown on the riser diagram. For street pressure-fed systems and fire pumps, a statement from the New York city department of environmental protection, giving the minimum water pressure in the main serving the building, shall be supplied.*
 2. *Sprinkler systems. Applications for sprinkler systems, whether automatic or non-automatic, shall contain plans that include the following data and information:*
 - 2.1. *The location and size of water supplies and the location, spacing, number, and type of sprinkler heads to be used, with approximate location and size of all feed mains, risers, valves, siamese connections and other essential features of the system.*
 - 2.2. *A diagram showing the proposed sprinkler system in relation to principal construction features of the building, such as its size, walls, columns, and partitions; and such other information as may be necessary for the evaluation of the system.*
 - 2.3. *The location, number, and type of any electrical or automatic devices or alarms to be used in the system.*
 - 2.4. *The available water pressure at the top and bottom floors of each zone shall be shown on the riser diagram. For street pressure-fed systems and fire pumps, a statement from the department of environmental protection, giving the minimum water pressure in the main serving the building, shall be supplied.*
 3. *Chemical or gaseous fire suppression piping systems. Applications for chemical or gaseous fire suppression piping system applications shall contain plans that include the following information data and information:*
 - 3.1. *Location of all surface, plenum and duct nozzles; surface dimensions and location of all cooking appliances; the location of automatic fuel shut-off and statement as to type (gas or electric); location and distance of the remote control or manual pull station;*
 - 3.2. *Identification of the grease filters to be used in any kitchen hood; the dimensions of all hoods and all related ducts, including termination of duct at the exterior of the building;*
 - 3.3. *Identification of: the fire suppression piping system; the type of extinguishing agent and number and size of agent containers; size, length, and type of all piping that will be used; the number and location of all fusible links or detectors and the temperature setting; any surface, plenum and duct nozzles; and*
 - 3.4. *For halon systems, the plan should also include type and concentration of the halon, the method of providing power supply to smoke or heat detectors, if a reserve supply is being provided, fire rating of partitions and if the area involved is sprinklered, location of all audible/visible*

alarms within and outside the location involved and the details of construction of the room to contain the halon.

- 3.5. *For all such systems, plans shall include the approval of the New York city fire department.*

Exception: For that portion of a fire suppression piping system within an approved pre-engineered system, a schematic isometric diagram shall be acceptable.

SECTION 117

FIRE AND EMERGENCY ALARM SYSTEMS

§28-117.1 Fire and emergency alarm system applications. In addition to the requirements otherwise prescribed, applications for fire and emergency alarm systems shall contain plans for fire alarm, carbon monoxide alarm and other emergency alarm or communication systems showing compliance with this code. Where plans require the approval of the New York city fire department approved plans shall be submitted.

SECTION 118

PLACE OF ASSEMBLY OPERATION CERTIFICATE

§28-118.1 Applications for place of assembly operation certificates. In addition to the requirements otherwise prescribed, applications for place of assembly operation certificates shall contain plans showing compliance with this code.

SECTION 119

ASBESTOS INVESTIGATION

§28-119.1 Asbestos investigation. In addition to the requirements otherwise prescribed, all applications for work on buildings constructed on or before April 1, 1987 shall include asbestos certifications, reports or removal plans as may be required by this section.

Exception: The commissioner may exempt categories of applications from the requirements of this section pursuant to rules promulgated by the commissioner in consultation with the commissioner of environmental protection.

§28-119.2 Demolition and alteration of buildings constructed on or before April 1, 1987. The commissioner shall not approve or accept an application for the demolition or alteration of a building constructed on or before April 1, 1987, unless the applicant submits (i) a certification from an asbestos investigator that the work to be performed will not constitute an asbestos project, (ii) an asbestos inspection report completed in accordance with the provisions of section 24-146.1 of the administrative code, or (iii) proof that an asbestos removal plan has been approved by the commissioner of the New York city department of environmental protection in accordance with section 24-146.1 of the administrative code.

§28-119.3 Asbestos project. The commissioner shall not approve or accept a work permit application for work that constitutes an asbestos project and for which an asbestos inspection report is required unless the applicant at the time of application and prior to approval or acceptance of the application certifies on forms prescribed by the commissioner of environmental protection that the applicant is familiar with federal, state and local laws and regulations applicable to asbestos related work.

§28-119.4 Definitions. For the purposes of this section, the terms "asbestos," "asbestos inspection report," "asbestos investigator," "asbestos project" and "asbestos removal plan" shall have the meanings as are ascribed in section 24-146.1 of the

administrative code.

SECTION 120
ALTERATION OR DEMOLITION OF SINGLE ROOM OCCUPANCY
MULTIPLE DWELLINGS

§28-120.1 *Alteration or demolition of single room occupancy multiple dwellings. The commissioner shall not approve or accept a work permit application for the alteration or demolition of a single room occupancy multiple dwelling except as set forth in this section.*

§28-120.2 *Definitions. The following words and terms shall, for the purposes of this section and elsewhere in the code, have the meanings shown herein.*

CLASS A, CLASS A MULTIPLE DWELLING, CLASS B, CLASS B MULTIPLE DWELLING, FURNISHED ROOM HOUSE, ROOMING UNIT, SINGLE ROOM OCCUPANCY. As such terms are defined in section 27-2004 of the New York city housing maintenance code.

SINGLE ROOM OCCUPANCY MULTIPLE DWELLING. A single room occupancy multiple dwelling means:

1. A "class A multiple dwelling" used in whole or part as a "rooming house" or "furnished room house," or for "single room occupancy" pursuant to section 248 of the New York state multiple dwelling law;
2. A "class A multiple dwelling" containing "rooming units"; or
3. A "class B multiple dwelling."

Exceptions. Notwithstanding the foregoing, a single room occupancy multiple dwelling shall not include:

1. College or school dormitories;
2. Clubhouses;
3. Luxury hotels, as such term is defined by the commissioner of housing preservation and development;
4. Residences whose occupancy is restricted to an institutional use such as housing intended for use primarily or exclusively by the employees of a single company or institution;
5. City-owned multiple dwellings;
6. Any "class A multiple dwelling" containing fewer than nine "class B" dwelling units; used for single room occupancy unless the total number of such units is more than fifty percent of the total number of dwelling units in such multiple dwelling;
7. Any "class A" or "class B multiple dwelling" which is:
 - 7.1. The subject of a program approved by the commissioner of housing preservation and development and related to the rehabilitation of a single room occupancy multiple dwelling other than a program of tax abatement or tax exemption authorized by subchapter 2 of chapter 2 of title 11 of the administrative code or section 421-a of the New York state real property tax law; and
 - 7.2. Exempted from the provisions of this section by the commissioner of housing preservation and development.

§28-120.3 *Restricted categories of work. The following categories of work are restricted by this section:*

1. Demolition of a single room occupancy multiple dwelling;

2. *Alteration of a single room occupancy multiple dwelling to a class A multiple dwelling to be used in whole or in part for other than single room occupancy purposes;*
3. *Alteration of single room occupancy multiple dwelling resulting in the removal or addition of kitchen or bathroom facilities; and*
4. *Such other types of alteration work to a single room occupancy multiple dwelling as shall be prescribed by rule of the commissioner of housing preservation and development, in consultation with the commissioner.*

§28-120.4 Required construction documents. The commissioner shall not approve a work permit application for a single room occupancy multiple dwelling for the categories of work described as restricted unless the applicant provides:

1. *a sworn affidavit by or on behalf of all the owners, as such term is defined in section 27-2004 of the new york city housing maintenance code, of such multiple dwelling that there will be no harassment of the lawful occupants of such multiple dwelling by or on behalf of such owners during the construction period; and*
2. *a tenant protection plan as provided for in this code; and*
3. *one of the following documents from the commissioner of housing preservation and development:*
 - 3.1. *a certification that there has been no harassment of the lawful occupants of such multiple dwelling within the 36 month period prior to the initial filing date of the subject application for construction document approval, provided, however, that such certification shall except any portion of such 36 month period during which title was vested in the city; or*
 - 3.2. *a waiver of such certification.*

§28-120.5 Filing process. After submitting an application for a work permit to the commissioner and obtaining the identifying job number for the same, the applicant shall forward a copy of such application to the commissioner of housing preservation and development, together with an application for a certificate of no harassment pursuant to section 27-2093 of the New York city housing maintenance code.

§28-120.6 Time period for acceptance or rejection. The time period in which the commissioner is required to approve or reject an application for a work permit pursuant to this code shall commence from the date that the commissioner receives either the certification, waiver, or determination of work exemption pursuant to this section.

§28-120.7 Denial of certification. Where the commissioner of housing preservation and development denies the certification required by this section, the commissioner shall reject the application for work permit approval.

§28-120.8 Request for stop-work or rescission. The commissioner shall be empowered to issue a stop-work notice or order with respect to an alteration or demolition permit and/or to rescind an application approval or acceptance at the request of the commissioner of housing preservation and development pursuant to section 27-2093 of the New York city housing maintenance code.

§28-120.9 Effect of denial or rescission. Where the commissioner rejects or rescinds an application for such work permit approval or construction document approval or acceptance pursuant to the provisions of this code, no further application for work permit approval for the categories of work listed as restricted shall be considered by the commissioner for a period of 36 months following the date of the denial of the certification of no harassment by the commissioner of housing preservation and development or the date of the rescission of such certification of no harassment by such

commissioner.

SECTION 121
PAVEMENT PLAN

§28-121.1 General. The commissioner shall not issue a permit for the erection of a new building or for alterations that will require the issuance of a new or amended certificate of occupancy, without a statement by the applicant that no certificate of occupancy shall be issued unless the sidewalk in front of or abutting such building, including but not limited to the intersection quadrants for corner properties, shall have been paved or repaired by the owner, at his or her own cost, in the manner, of the materials, and in accordance with the standard specifications prescribed by the New York city department of transportation pursuant to sections 19-113 and 19-115 of the administrative code.

Exceptions:

- 1. Application for the erection of an accessory building appurtenant to an existing one- or two-family dwelling;*
- 2. Where the commissioner determines that a sidewalk is not required, provided that such determination shall not affect the obligations of the owner under subdivision a of section 19-152 of the administrative code, nor relieve the owner of any such obligations, nor impair or diminish the rights of the city or its agencies to enforce such obligations;*
- 3. Where the extent of the change in use or occupancy or the cost of the alteration does not exceed a threshold established pursuant to rule of the commissioner.*

§28-121.2 Pavement plan required. Construction documents shall include a pavement plan processed and approved under guidelines established by the department. The pavement plan shall include documentation sufficient to show compliance with the standards and specifications of the New York city department of transportation pursuant to sections 19-113 and 19-115 of the administrative code.

Exception: No pavement plan shall be required with respect to an alteration application for a building where the applicant certifies that there is a sidewalk in existence in front of or abutting such building, including but not limited to the intersection quadrants for corner properties, complying with the specifications of the New York city department of transportation, and that the nature of such alteration work will neither remove such existing sidewalk nor cause damage to such existing sidewalk such that the damage could not be corrected as minor repairs prior to issuance of the certificate of occupancy.

§28-121.3 Improvement of streets. The commissioner shall insure that streets are suitably improved in accordance with the standards and specifications of the department of transportation as required by subdivision two of section thirty-six of the general city law and shall otherwise carry out the provisions of such subdivision.

SECTION 122
FIRE PROTECTION PLAN

§28-122.1 Fire protection plan required for covered buildings. New building and alteration applications for covered buildings as set forth in section 28-122.2 shall include a fire protection plan prepared by or under the supervision of an architect or engineer who shall seal and sign such plan.

Exception: No fire protection plan shall be required for an alteration that meets

all three of the following requirements:

1. *The alteration does not involve a change of use; and*
2. *The alteration does not exceed three million dollars; and*
3. *The alteration does not create an inconsistency with a previously approved fire protection plan.*

§28-122.2 Covered buildings. Covered buildings include:

1. *High rise buildings or building sections exceeding 75 feet (22,860 mm) in height.*
2. *Buildings or building sections classified in occupancy group A, B, C, D, E or G that are two or more stories in height with over 20,000 gross square feet per floor or are two or more stories in height with a total building floor area exceeding 50,000 gross square feet.*
3. *Any building containing an assembly occupancy having an occupant load of 300 or more persons.*
4. *Buildings or building sections classified in occupancy group H or J-1 that are two or more stories in height and contain sleeping accommodations for 30 or more persons.*
5. *Buildings or building sections classified in occupancy group J-2 that contain 30 or more dwelling units and over 10,000 gross square feet of floor area used for mercantile, assembly, educational or institutional purposes.*

§28-122.3 Scope. The plan shall include the following information, where applicable:

1. *A description of the building including: address; block and lot numbers; number of stories; height in feet; occupancy group; construction classification; occupancy load and department of buildings application number.*
2. *All floors, exits, doors, corridors, and partitions serving as fire barriers, fire partitions, fire walls; locations and ratings of required enclosures and fire areas; stairs with pressurization; roof access; exit discharges; and locations of any required frontage space.*
3. *In narrative form, a description of safety systems and features, including:*
 - 3.1. *Communications systems;*
 - 3.2. *Alarm systems;*
 - 3.3. *Smoke detection equipment;*
 - 3.4. *Location of fire command station;*
 - 3.5. *Elevator recall;*
 - 3.6. *Emergency lighting and power;*
 - 3.7. *Standpipes;*
 - 3.8. *Sprinklers;*
 - 3.9. *Compartmentation;*
 - 3.10. *Mechanical ventilation and air conditioning;*
 - 3.11. *Smoke control systems and equipment;*
 - 3.12. *Furnishings types and materials;*
 - 3.13. *Places of assembly;*
 - 3.14. *Fire department access;*
 - 3.15. *Photoluminescent pathway marking systems; and*
 - 3.16. *Other systems, required and voluntary, to be installed.*

SECTION 123 SPECIAL FLOOD HAZARD AREAS

§28-123.1 Special flood hazard areas. Applications for work in special flood hazard

areas shall comply with the specific provisions of this code relating to work in such areas.

SECTION 124 SITE SAFETY PLAN

§28-124.1 Site safety plan. Where site safety plans are required by this code, such plans shall include the following:

1. Location of all construction fences around the work site;
2. Location of all gates in construction fences;
3. Location of all guard rails around the excavation, when required;
4. Location of all sidewalk sheds;
5. Location of all temporary walkways;
6. Location of all foot bridges and motor vehicle ramps;
7. Protection of side of excavation;
8. Location of all street and sidewalk closing(s);
9. Approximate location of all material and personnel hoist(s) and loading areas;
10. Approximate location of all crane and derrick loading areas;
11. Location of surrounding all buildings, indicating occupancy, height and type of roof protection, when required;
12. Location of all standpipe system and siamese hose connections;
13. Location of all temporary elevators for Fire Department use when building is above 75 feet (22,860 mm) in height;
14. Location of all exterior contractors sheds;
15. All safety netting and scaffolding when required; and
16. Widths of all sidewalks and roadways and all traffic information and all exits from the work site.

SECTION 125 TEMPORARY STRUCTURES AND USES

§28-125.1 General. The commissioner is authorized to issue a permit for temporary structures and temporary uses. Such permits shall be limited as to time of service, but shall not be permitted for more than 30 days. The commissioner may grant extensions for demonstrated cause. The Fire Department shall be notified when such permits are issued to temporary places of public assembly.

§28-125.2 Conformance. Temporary structures and uses shall conform to the structural strength, fire safety, means of egress, accessibility, light, ventilation and sanitary requirements of this code as necessary to ensure the public health, safety and general welfare.

§28-125.3 Termination of approval. The commissioner is authorized to terminate such permit for a temporary structure or use and to order the temporary structure or use to be discontinued.

§28-125.4 Application processing. Application for such structures and uses shall be submitted to the department no later than fifteen business days prior to the construction of the temporary structure or the commencement of the temporary use.

§28-125.5 Fees. Applications for such permits shall be accompanied by the applicable fees in accordance with section 28-126. Fees for subsequent requests for renewals shall be paid upon approval of such requests.

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SECTION 126
FEES

§28-126.1 Payment of fees. A permit, inspection, or other service or privilege as regulated in this code shall not be valid until the fees prescribed herein or in rules have been paid, nor shall a renewal of a permit or other service or privilege or an amendment to a permit be released until the fee has been paid. In addition, an approval required to be reissued due to a change in product name, company name and/or address, contact information or principals, shall not be reissued until a reissuance fee, if any, has been paid. The department shall adopt such rules and shall prescribe such forms as may be necessary to carry out the provisions of this section.

Exception: A permit, inspection or other service or privilege as regulated in this code shall not be subject to this provision if the owner of the building or property affected is a corporation or association organized and operated exclusively for religious, charitable or educational purposes, or for one or more such purposes, no part of the earnings of which inures to the benefit of any private shareholder or individual, and provided that the property affected is to be used exclusively by such corporation or association for one or more of such purposes.

§28-126.2 Schedule of permit fees. On buildings, structures, gas, mechanical, and plumbing systems or alterations requiring a permit, a fee for each permit shall be paid in accordance with the schedule at the end of this subsection. Such fee is for the filing and processing of applications for the approval of plans or other statement describing building work, the filing and processing of permit applications, the issuance or renewal of work permits, the inspection of building work and the issuance of certificates of occupancy. Fifty percent of the total fee for the work permit, but not less than one hundred dollars, or the total fee for the work permit where such fee is less than one hundred dollars, shall be paid by or on behalf of the owner or lessee of the building premises or property affected and shall accompany the first application for the approval of plans or other statement describing the building work when submitted prior to submission of the permit application; and the whole or remainder of the total fee shall be paid before the work permit may be issued. In addition the commissioner shall, when deemed necessary by him or her, require reasonable substantiation of any statement or other form that may be required by the department.

Permit Type	Initial Fee	Renewal Fee	Comments
New Buildings			
<p><i>New building work permit: One-, two- or three-family dwelling</i></p> <p><i>Subsequent applications related to initial new building work permit application, including but not limited to elevators, filed prior to the first temporary certificate of occupancy (TCO), or the final certificate of occupancy if no TCO is issued</i></p> <p><i>New building work permit: Garage for not more than three cars when accessory to and filed with plans for one-, two- or three-family dwelling to which it is accessory on the same lot</i></p>	<p><i>\$0.12 for each square foot, or fraction thereof, of the total floor area of the new building, but not less than \$100 for each structure</i></p> <p><i>\$100. Each</i></p> <p><i>\$100.</i></p>	<p><i>\$100.</i></p> <p><i>\$100. Each</i></p> <p><i>\$100.</i></p>	
<p><i>New building work permit: All other new buildings</i></p> <p><i>Subsequent applications related to initial new building work permit application, including</i></p>	<p><i>\$0.26 for each square foot, or fraction thereof, of the total floor area of the new building, but not less than \$100 for each structure</i></p> <p><i>\$100. Each</i></p>	<p><i>\$100.</i></p> <p><i>\$100.</i></p>	

<p><i>but not limited to elevators, filed prior to the first temporary certificate of occupancy (TCO), or the final certificate of occupancy if no TCO is issued</i></p>			
Alterations			
<p><i>Alteration work permit:</i></p> <p><i>One-, two or three-family dwelling.</i></p> <p><i>Permit to install and/or alter plumbing, plumbing system and/or fire suppression piping system in existing building: One-, two or three-family dwelling.</i></p>	<p><i>\$100 for the first five thousand dollars, or fraction thereof, of the cost of alteration, excluding the cost for the installation or alteration of any plumbing or plumbing system or fire suppression piping system; plus \$5.15 for each one thousand dollars, or fraction thereof, of cost of alterations in excess of five thousand dollars.</i></p>	<p><i>\$100.</i></p>	
<p><i>Alteration work permit:</i></p> <p><i>Alterations in all other buildings and structures, including but not limited to aerial towers and masts, tank structures, fire escapes, etc., which are unoccupied and not easily valued by area;</i></p> <p><i>Applications related to new building work permit application, filed after the first temporary certificate of occupancy (TCO), or the final certificate of occupancy if no TCO is issued.</i></p>	<p><i>\$100 for the first three thousand dollars, or fraction thereof, of the cost of alteration not including the cost of the installation or alteration of any plumbing or plumbing system or fire suppression piping system; plus \$20 for each one thousand dollars, or fraction thereof, of the next two thousand dollars of such cost; plus \$10.30 for each one thousand dollars, or fraction thereof, of the alteration cost in excess of five</i></p>	<p><i>\$100.</i></p>	

<p><i>Installation or alteration of elevators, escalators, amusement devices and other devices regulated under Subchapter 18. of this code, except those filed under a new building application.</i></p> <p><i>Permit to install and/or alter plumbing, plumbing system and/or fire suppression piping system in existing building: All buildings other than one-, two- or three-family dwelling.</i></p>	<p><i>thousand dollars.</i></p>		
<p><i>Permit to install or alter service equipment except plumbing and fire suppression piping service equipment.</i></p>	<p><i>Fee calculated as for respective building alteration.</i></p>	<p><i>\$100.</i></p>	
<p><i>Permit to install, alter or replace oil-burning equipment:</i></p> <p><i>Where the storage tank exceeds two hundred seventy-five gallon capacity; or where the storage tank is less than two hundred seventy-five gallons and is to be buried, or is to be installed in a multiple dwelling or a place of assembly or in a building along the line of a subway, or is to deliver fuel oil to a burner installed above the lowest floor of a building with a primary Business</i></p>	<p><i>\$100.</i></p> <p><i>\$50.</i></p>	<p><i>\$100.</i></p> <p><i>\$100.</i></p>	

<i>Group E. occupancy.</i>			
<i>In all other conditions.</i>			
Other			
<i>Permit for foundation, earthwork or open space without roof, whether enclosed or unenclosed, on sites such as parking lots, gasoline or oil-selling stations, storage yards, sales or exhibition or show spaces used for generally similar purposes.</i>	<i>\$10 for each two thousand square feet of area or fraction thereof, but not less than \$100.</i>	<i>\$100.</i>	
<i>Permit for golf driving range.</i>	<i>\$7.50 for each twenty thousand square feet of area or fraction thereof, but not less than \$100.</i>	<i>\$100.</i>	
<i>Accessory building to golf driving range, not to exceed one hundred forty-four square feet.</i>	<i>\$100.</i>	<i>\$100</i>	
<i>Permit for demolition and removal.</i>	<i>Multiply street frontage in feet or fraction thereof x number of stories of the building x \$2.60, but not less than \$260. For corner lot, use the longer street frontage.</i>	<i>\$100.</i>	
<i>Asbestos permits:</i> <i>Permit for the performance of an asbestos project for which the filing with the department of an asbestos inspection report, or proof of approval by the commissioner of environmental protection of an</i>			<i>Specific fee to be established by the commissioner of environmental protection.</i> <i>Terms "asbestos project," "asbestos inspection report" and "asbestos removal plan" shall have the meanings ascribed in Section 24-146.1 of</i>

<p><i>asbestos removal plan is required.</i></p> <p><i>Application for plan approval or permit for work for which an asbestos investigator is required to submit an asbestos inspection report certifying that the work to be performed will not constitute an asbestos project.</i></p>			<p><i>subchapter six of chapter one of title twenty-four of the code.</i></p>
Signs			
<p><i>Permit to erect, install or alter sign: Ground sign.</i></p>	<p><i>Basic fee calculated as for building alteration; plus \$5 for each one hundred square feet of surface area, or fraction thereof; but not less than \$135.</i></p>	<p><i>\$100.</i></p>	<p><i>Each face of any sign, when fronting on different streets, shall be treated as a separate sign.</i></p>
<p><i>Permit to erect, install or alter sign: Roof sign having a tight, closed or solid surface.</i></p>	<p><i>Basic fee calculated as for building alteration; plus \$15 for each one hundred square feet of surface area, or fraction thereof; but not less than \$170.</i></p>	<p><i>\$100.</i></p>	<p><i>Each face of any sign, when fronting on different streets, shall be treated as a separate sign.</i></p>
<p><i>Permit to erect, install or alter sign: Roof sign without a tight, closed or solid surface, extending to a height of not more than thirty-one feet above roof level.</i></p>	<p><i>Basic fee calculated as for building alteration; plus \$15 for each one hundred square feet of surface area, or fraction thereof, but not less than \$115.</i></p>	<p><i>\$100.</i></p>	<p><i>Each face of any sign, when fronting on different streets, shall be treated as a separate sign.</i></p>
<p><i>Permit to erect, install or alter sign: Roof sign without a tight, closed or solid surface, extending to a height over thirty-one feet above roof level.</i></p>	<p><i>Basic fee calculated as for building alteration; plus \$25 for each one hundred square feet of area, or fraction thereof, but not less than \$135.</i></p>	<p><i>\$100.</i></p>	<p><i>Each face of any sign, when fronting on different streets, shall be treated as a separate sign.</i></p>

Permit to erect, install or alter sign: Illuminated sign projecting beyond street line having thirty square feet or less on one side.	Basic fee calculated as for building alteration.	\$100.	Illuminated sign is subject to annual use fee: \$45.
Permit to erect, install or alter sign: Illuminated sign projecting beyond street line having more than thirty square feet but no more than fifty square feet on one side.	Basic fee calculated as for building alteration.	\$100.	Illuminated sign is subject to annual use fee: \$70.
Permit to erect, install or alter sign: Illuminated sign projecting beyond street line and having more than fifty square feet on one side	Basic fee calculated as for building alteration.	\$100.	Illuminated sign is subject to annual use fee: \$0.75 for each square foot or part thereof annually, but not less than \$100.
Maintenance permit for outdoor signs.	As provided by rule.		
Temporary Structures			
Permit for temporary shed, fence, railing, footbridge, catch platform, building sidewalk shanty, over-the-sidewalk chute.	\$130 for each permit.	\$100.	
Sidewalk shed.	\$130 for the first twenty-five feet or fraction thereof in the length of the shed; plus \$10 for each additional twenty-five feet or fraction thereof.	\$100.	
Permit for temporary structure other than those listed above, including but not limited to tents, grandstands, stages.	\$100 for the first one thousand square feet or fraction thereof; plus \$0.10 for each square foot or	\$100.	

	<i>fraction thereof in excess of one thousand square feet.</i>		
Permit Reinstatement			
<i>Application/permit reinstatement fees:</i>			
<i>Prior to first permit.</i>	<i>Full fee at the rate in effect on the date of reinstatement.</i>		
<i>Following first permit issuance but prior to commencing work.</i>	<i>Full fee at the rate in effect on the date of reinstatement.</i>		
<i>Following first permit, with work partially complete.</i>	<i>Based upon the full fee at the rate in effect on the date of reinstatement, the percentage of the fee equal to the percentage of work remaining as determined by the department inspector, plus the renewal fee.</i>		

§28-126.3 *Building permit valuations.* Where applicable, the applicant for a permit shall provide an estimated job construction cost at time of application. Cost estimates shall include total value of work, including materials and labor, for which the permit is being issued, such as gas, mechanical, plumbing equipment and permanent systems. If, in the opinion of the department, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the department. Final building permit valuation shall be set by the department.

§28-126.4 *Work commencing before permit issuance.* Any person who commences any work on a building, structure, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a penalty as specified in this code that shall be in addition to the required permit fees.

§28-126.5 *Related fees.* The payment of the fee for the construction, alteration, removal or demolition for work done in connection or concurrently with the work authorized by a building permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.

§28-126.6 *Refunds and rebates.* Upon application to the comptroller of the city of New York, and upon verification of claim by the commissioner, refunds or rebates of partial or full fees shall be provided according to the following:

§28-126.6.1 Withdrawal of work permit applications. In the event that an owner withdraws an application for a permit, the owner may obtain a refund of all or a portion of the fee paid as follows:

- 1. If application is withdrawn prior to the commencement of examination of the application, all but \$40 of the fee paid shall be refunded.*
- 2. If the application is withdrawn during the progress of examination of the application, the comptroller shall retain a percentage of the deposit fee paid, which the department shall certify is the equivalent percentage of the examination completed, but not less than \$100. The remainder of the fee shall be refunded to the owner.*
- 3. If the application is withdrawn after examination of plans and/or plan approval and before issuance of permit, there shall be refunded by the comptroller fifty percent of the total computed fee, except that not less than \$100 shall be retained by the comptroller.*

§28-126.6.2 Withdrawal of cranes and derricks applications. If the applicant withdraws his or her application for a certificate of approval for a power-operated crane, derrick or cableway, such applicant may obtain a refund of a portion of the fees as follows:

- 1. If the application is withdrawn prior to the commencement of examination by the department, the entire fee shall be refunded except \$100.*
- 2. If the application is withdrawn after the examination has commenced, the comptroller shall retain a percentage of the fee paid, which the department shall certify is the equivalent percentage of the examination performed, but not less than \$100. The remainder of the fee shall be refunded to the applicant.*
- 3. If the application is withdrawn after the department has performed its examination, whether or not the application has been approved, or after plan approval by the applicant, no part of the fee shall be returned to the applicant.*

§28-126.6.3 Incentive rebates. With respect to the rebates under this section, the commissioner may, at his or her discretion, issue a rebate of application fees as follows and as established by rule.

§28-126.6.3.1 Renewable energy rebates. Owners who demonstrate the production on a zoning lot of five percent or more of the annual energy consumption on the zoning lot through renewable energy sources may receive a fee rebate as established by rule.

§28-126.6.3.2 Rebate for energy use reduction. Owners who demonstrate a reduction in energy use from that allowed at the time of permit by the New York state energy conservation construction code (NYSECCC) as a result of the permitted work receive a fee rebate as established by rule

§28-126.6.3.3 Rebate for water conservation systems. Owners who demonstrate conservation of water taken from the city supply by providing evidence of achieving the water recycling discount authorized by the New York city water board may receive a fee rebate as established by rule

§28-126.6.3.4 Rebate for redevelopment, remediation and reuse of contaminated properties known as brownfields. Owners who demonstrate that their site was contaminated and has been certified as remediated by the United States environmental protection agency or the New York state department of environmental conservation, or has received a notice of satisfaction from the

New York city department of environmental protection, may receive a fee rebate as established by rule

§28-126.6.3.5 Rebate for recycling construction and demolition waste. Owners who demonstrate the recycling of construction and demolition waste may receive a fee rebate as established by rule

§28-126.6.3.6 Rebate for bicycle storage facilities. Except for J-3 occupancy, owners who demonstrate that they have provided secured indoor bicycling facilities accessible to all building occupants may be rebated their fees as set out in rule. Such facilities shall be identified on approved plans and shall be noted on the certificate of occupancy with a statement that the bicycling accommodations dedicated to such facilities were provided in accordance with this subsection.

§28-126.6.3.7 Rebate for LEED certification. Owners who demonstrate certification of their project, which was signed off following the effective date of this code, by the United States Green Building Council based upon the Council's Leadership in Energy and Environmental Design (LEED) rating system, may be rebated their fees as set out in rule.

§28-126.6.3.8 Other rebates. The commissioner is authorized to promulgate rules to rebate fees following certificate of occupancy or sign-off based upon the installation of energy-conserving systems.

§28-126.7 Inspection fees. Aside from the inspection fees covered under permit fees above, the following inspection fees shall be paid according to requirements of this code and as promulgated in rules.

§28-126.7.1 Fees for the testing, approval, inspection and use of power-operated cranes, derricks and cableways. Note: The owner of any crane or derrick shall renew the certificate of operation each year.

Equipment Type	Initial Fee	Renewal Fee for Certificate of Operation	Comments
Prototype approval of one configuration of a mobile crane. One configuration shall be comprised of the crane with a main boom, one fixed jib and one set of counterweights. Amendment to a configuration.	\$2500 when testing has been monitored and certified by a competent individual or group, other than the manufacturer, acceptable to the commissioner; \$4000 when, in lieu of monitoring and certification of tests, the commissioner shall require design calculations for such items as he or she deems necessary to supplement the tests. One-half the original configuration fee.		Additional configurations shall be subject to the same fees as the original configuration.
Prototype approval of a mobile crane with a hydraulic boom.	\$4000.		
Certificate of approval for mobile crane with a boom less than two hundred feet in length; fee also includes initial certificate of operation.	\$500.	\$250 annually.	The boom length as herein specified shall include the jibs and any other extensions to the boom.
Certificate of approval for mobile crane with a boom two hundred feet or more in length, but less than three hundred feet in length; fee also includes initial certificate of operation.	\$1000.	\$250 annually.	The boom length as herein specified shall include the jibs and any other extensions to the boom.
Certificate of approval for mobile crane with a boom three hundred feet or more in length but less than four hundred feet	\$2000.	\$400 annually.	The boom length as herein specified shall include the jibs and any other extensions to the boom.

<i>in length; fee also includes initial certificate of operation.</i>			
<i>Certificate of approval for mobile crane with a boom four hundred feet or more in length; fee also includes initial certificate of operation.</i>	\$3000.	\$400 annually.	<i>The boom length as herein specified shall include the jibs and any other extensions to the boom.</i>
<i>Certificate of approval for climber and tower cranes and derricks, regardless of length; fee also includes initial certificate of operation.</i>	\$3000.	\$500 annually.	
<i>Certificate of approval for all other cranes; fee also includes initial certificate of operation.</i>	\$1000.	\$250 annually.	
<i>Certificate of approval required for a mobile crane with a boom not exceeding fifty feet in length with a maximum rated capacity not exceeding three tons; fee also includes initial certificate of operation.</i>	\$300.	\$200 annually.	<i>The boom length as herein specified shall include the jibs and any other extensions to the boom.</i>
<i>New certificate of approval, when the boom or extension thereof is replaced or altered.</i>	<i>The fee shall be the full fee required for testing a new crane or derrick, with a boom or extension of the same size and design as the replacement boom or extension thereof.</i>		
<i>Review only of engineering calculations for mobile crane with a boom exceeding 250 feet to be erected by a licensed master or special rigger, for which a certificate of on-site inspection is not required under Subchapter 19 of this code.</i>	\$100.		
<i>On-site inspection of up to three models of mobile cranes with boom, including jibs and other extensions to the boom two hundred fifty feet or more in length, or derrick.</i>	<i>\$250 on normal working days; \$750 on other than normal working days, upon written request of the applicant.</i>		
<i>All other on-site inspections of cranes.</i>	\$150.		
<i>Amendment to an application for certificate of on-site inspection.</i>	\$100.		
<i>Application for waiver of on-site inspection of mobile crane or derrick.</i>	\$100.		

§28-126.7.2 Periodic inspection fees.

Inspection Type	Initial Fee	Renewal Fee	Comments
<i>Filing fee for report of critical examination of exterior walls and appurtenances thereof.</i>	<i>As provided by rule.</i>		
<i>Filing fee for periodic boiler inspection report.</i>	<i>\$30 for each boiler.</i>		
<i>Equipment inspection fee:</i> <i>High-pressure boiler periodically inspected as provided by section 28-116.4.</i> <i>Reinspection fee following a violation.</i>	<i>\$65 for each inspection, for each boiler.</i>		
<i>Filing fee for report of periodic inspection of elevator and other devices.</i>	<i>\$30 for each device.</i>		
<i>Equipment inspection fee: Each elevator or other device regulated in Subchapter 18.</i>	<i>\$65 for each inspection, for each device.</i>		

§28-126.7.3 Other inspection fees.

<i>Inspection Type</i>	<i>Initial Fee</i>	<i>Renewal Fee</i>	<i>Comments</i>
<i>Curb cut, private dwelling.</i>	<i>\$3 for each linear foot including splay.</i>		
<i>Curb cut, other.</i>	<i>\$6 for each linear foot including splay.</i>		
<i>Marquee inspection.</i>	<i>\$15 annually for each one hundred square feet or fraction thereof.</i>		
<i>Place of assembly inspection, including following a violation.</i>	<i>\$100 each inspection, each place of assembly.</i>		
<i>Search inspection of a building with a frontage of twenty-five feet or less and a depth of one hundred feet or less.</i> <i>Additional fee for building with frontage exceeding twenty-five feet.</i> <i>Additional fee for building with depth exceeding one hundred feet.</i>	<i>\$20 for each floor for the first three floors; \$10 for each additional floor; \$100 minimum total.</i> <i>Increase above fee by 40% for each floor for each additional twenty-five feet or fraction thereof.</i> <i>Increase above fee by 25% for each floor for each additional twenty-five feet or fraction thereof.</i>		<i>A basement or a cellar shall count as a floor.</i> <i>Where both a basement and a cellar exist, the cellar shall not count as a floor in computing fee.</i>

§28-126.8 Special fees. The department shall be entitled to charge the following special fees:

<i>Item Description</i>	<i>Fee</i>	<i>Comments</i>
<i>Acknowledgement.</i>	<i>As provided by rule.</i>	
<i>Accelerated plan review.</i>	<i>In accordance with rules promulgated by the commissioner.</i>	
<i>Accelerated inspection.</i>	<i>In accordance with rules promulgated by the commissioner.</i>	
<i>Certificate of occupancy.</i>	<i>As provided by rule.</i>	
<i>Accelerated certificate of occupancy request.</i>	<i>In accordance with rules promulgated by the commissioner.</i>	
<i>Application for temporary certificate of occupancy.</i>	<i>\$100.</i>	<i>\$100 renewal.</i>
<i>Place of assembly certificate of operation.</i>	<i>\$100.</i>	<i>\$100 renewal.</i>
<i>Temporary place of assembly certificate of operation.</i>	<i>\$100.</i>	<i>\$100 renewal.</i>
<i>Temporary use letter for temporary structure.</i>	<i>\$100.</i>	
<i>Temporary use letter for place of assembly.</i>	<i>\$200.</i>	<i>Application shall be submitted at</i>

		<i>least ten work days prior to the event; late fees shall be imposed at \$100 for each day for each day following required submission date that the application is received by the department.</i>
<i>Ordinary plumbing work.</i>	<i>\$100 for each report.</i>	
<i>Limited plumbing alteration.</i>	<i>Same as for alteration.</i>	
<i>Limited sprinkler and/or standpipe alteration.</i>	<i>Same as for alteration.</i>	
<i>Approval or acceptance of materials, assemblies and equipment</i>		
<i>Application for approval or acceptance of materials, assemblies or equipment by code test method.</i>	<i>\$600.</i>	
<i>Application for amendment of prior approval or acceptance of materials, assemblies or equipment by code test method.</i>	<i>\$500.</i>	
<i>Application for change of identification (change of ownership, corporate name or name of product) of prior approval or acceptance of materials, assemblies or equipment by code test method.</i>	<i>\$350.</i>	
<i>Application for approval or acceptance of materials, assemblies or equipment evaluated by another evaluation service approved by the department.</i>	<i>\$200.</i>	
<i>Other fees</i>		
<i>Certificate of pending violation: Multiple and</i>	<i>As provided by rule.</i>	

<i>private dwellings.</i>		
<i>Certificate of pending violation: All other buildings.</i>	<i>As provided by rule.</i>	
<i>Certified copy of license.</i>	<i>As provided by rule.</i>	
<i>Microfilming of applications for new buildings and alterations and associated documentation for certificates of occupancy, temporary certificates of occupancy and/or letters of completion, as required by rule of the commissioner.</i>	<i>As provided by rule.</i>	
<i>Preparing only or preparing and certifying a copy of a record or document filed in the department, other than a plan, certificate of occupancy or certificate of pending violation.</i>	<i>As provided by rule.</i>	
<i>Half-size print from microfilm of a plan thirty-six by forty-eight inches or less.</i>	<i>As provided by rule.</i>	
<i>Additional copies.</i>		
<i>Half-size print from microfilm of a plan exceeding thirty-six by forty-eight inches.</i>	<i>As provided by rule.</i>	
<i>Additional copies.</i>		

**SECTION 127
INSPECTIONS AND SIGN-OFF OF COMPLETED WORK**

§28-127.1 General. Construction or work for which a permit is required shall be subject to inspection by the commissioner and such construction or work shall remain accessible and exposed as required for inspection purposes until approved. Inspections presuming to give authority to violate or cancel the provisions of this code or of other laws or rules shall not be valid. It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes as required. Neither the commissioner nor the city shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

§28-127.2 Preliminary inspection. Before issuing a permit, the commissioner is authorized to examine or cause to be examined structures or premises for which an application has been filed.

§28-127.3 Compliance inspections. In addition to the inspections specified in this code, the commissioner is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other

laws that are enforced by the department.

§28-127.4 *Inspections during progress of work.* After the issuance of a work permit, inspections shall be made during the progress of the work at such times or at such stages of the work and in such manner as the commissioner shall direct; and such inspections shall include inspection of machinery and equipment used for hoisting purposes, cableways and rigging purposes. The commissioner may accept signed statements by architects, engineers, and approved agencies and supporting inspection and test reports covering work subject to special inspections as permitted by this code. Such work may, unless otherwise specifically provided by code provisions or directed by the commissioner, proceed without any verifying inspections or test by the department, provided that the names and business addresses of such architects, or engineers, or approved agencies shall have been set forth in the work permit application or filed in writing with the department not later than ten calendar days prior to issuance of a permit.

§28-127.5 *Inspection of service equipment.* Inspection shall be made for the following types of service equipment to determine that the installation conforms substantially to the approved plans and to the provisions of this code and other applicable laws and rules:

1. Air conditioning and ventilation systems.
2. Elevators, escalators, moving walks and stairways, dumbwaiters.
3. Fuel burning and fuel oil storage equipment.
4. Refrigeration systems.
5. Heating systems.
6. Boilers.

§28-127.5.1 *Certificate of compliance.* A certificate of compliance shall be issued by the department for each equipment, device or system listed in section 28-127.5 upon satisfactory inspection and testing to determine proper functioning and compliance with this code. Such certificate shall contain the permit number, location of premises and equipment, a description of the equipment including but not limited to make, model #, and capacity, and any other information as the commissioner may determine. Certificates of compliance shall be laminated and posted in a conspicuous place in close proximity to the equipment for which the certificate is issued and be ready for public inspection during the entire time of the use and operation of the equipment. Such equipment shall not be used until a certificate of compliance is issued.

Exception: A service equipment certificate of compliance shall not be required in any of the following cases:

1. Air-conditioning and ventilating systems. Where the system is a voluntary system serving only one floor of a building and:
 - 1.1. Does not use lot line windows for the intake or exhaust of air or the mounting of equipment.
 - 1.2. Is not installed in any public hallway, passageway, or stairway.
 - 1.3. Does not in any way reduce the ventilation of any room or space below that required by code provisions.
 - 1.4. Does not penetrate any fire division, roof, floor, or wall (except that a packaged air-conditioning unit not exceeding three tons rated capacity may be used in windows or in

sleeves under windows, provided that health, fire and/or structural safety is not thereby impaired).

2. Elevators, escalators, moving walks and stairways, dumbwaiters. Where the equipment consists of a portable elevating device used only for handling materials and located and operated entirely within one story.
3. Fuel-burning and fuel-oil storage equipment.-Where the equipment consists of any of the following:
 - 3.1. Portable fuel-burning equipment that does not require a chimney or vent connection.
 - 3.2. Portable heaters used in construction work.
 - 3.3. Oil-fired heaters having a fuel-storage capacity of 6 gallons or less (except that internal combustion engines of any size shall require a permit).
4. Refrigerating systems.-Where the system:
 - 4.1. Has a capacity of twenty-five tons or less and uses a Group A1 refrigerant.
 - 4.2. Is to be installed in a vehicle, railroad car, or vessel.
 - 4.3. Uses water or air as the refrigerant.
5. Hot water boilers and steam boilers operating at a gauge pressure of not more than fifteen pounds per square inch located in dwellings occupied by less than six families.
6. Exhaust systems with a capacity of 2,000 cfm or less including fans.

§28-127.5.2 *Temporary certificate of compliance.* The commissioner may, upon request, issue a temporary certificate of compliance authorizing partial use and operation of the equipment prior to completion of the installation or alteration work, provided that such partial use and operation may be made safely and without endangering public health, safety and welfare, and further provided that such temporary certificate shall not be issued for a period of more than thirty calendar days, subject to renewal for additional thirty-day periods at the discretion of the commissioner. All temporary certificates shall be required to be posted in a conspicuous location in or near the equipment covered by the permit, and shall state the nature and extent of the partial use and operation permitted and indicate clearly that full use and operation of the equipment is not permitted.

§28-127.5.3 *Duration and renewal of certificates of compliance for service equipment.* Certificates of compliance for service equipment shall be of indefinite duration, except that certificates issued for the use and operation of elevators and similar equipment and boilers shall be limited to a term of one year from the date of issuance, subject to annual renewal upon application and proof of compliance with the requirements for periodic inspections as prescribed in this code. Applications for renewal of such certificates shall be submitted on forms furnished by the department, not later than thirty calendar days prior to the expiration date of the certificate, accompanied by the required fee as per section 28-126 of this code.

§28-127.6 *Place of Assembly.* Inspection shall be made of every place of assembly space to determine that it conforms substantially to the approved plans and to the provisions of this code.

§28-127.6.1 Place of assembly certificate of operation. It shall be unlawful to operate a place of assembly without a certificate of operation. Such certificate shall be issued for every place of assembly space upon satisfactory inspection and issuance of a certificate of occupancy authorizing such use. Such certificate shall contain the place of assembly application number, the number of persons who may legally occupy the space and any other information that the commissioner may determine. Such certificate of operation shall be framed and mounted in a location that is conspicuously visible to a person entering the space. For the purposes of this section a place of assembly permit issued prior to the effective date of this code shall be valid until its expiration.

§28-127.6.2 Temporary place of assembly certificate of operation. At the commissioner's discretion, a temporary certificate of operation may be issued for a place of assembly space upon request by the applicant in accordance with this code.

§28-127.6.3 Duration and renewal of certificate. Place of assembly certificate of operation shall be renewed annually upon payment of proper fees and proof of satisfactory inspection by the fire department.

§28-127.7 Final inspection. The final inspection shall be made after all work required by the building permit is completed and before the issuance of any certificate of occupancy, letter of completion or service equipment certificate of compliance. Final inspection of the work shall be made in the presence of the architect, engineer, or other person who supervised or superintended the construction, installation or alteration work. All failures to comply with the provisions of this code or approved construction documents shall be noted and the owner or lessee promptly notified thereof in writing. Final inspections may be made on behalf of the commissioner by the department or any other entity as prescribed in this code. However, final inspections made in connection with the issuance of certificates of occupancy shall be made by the department.

§28-127.8 Inspections of completed buildings, structures, signs and service equipment. In addition to other required inspections, the commissioner is authorized to make or require inspections of completed buildings, structures, signs or service equipment installations to ascertain compliance with the provisions of this code and other laws that are enforced by the department.

§28-127.9 Inspection agencies and other authorized inspection entities. All inspections of building work shall be made and conducted under the direction of the commissioner or his or her designee and in accordance with and subject to the provisions of this code. The commissioner may accept inspection and test reports from officers and employees of the department and other city departments and governmental agencies; and he or she may also accept inspection and test reports submitted by architects and engineers, or by other persons or services when the commissioner is satisfied as to their qualifications and reliability. The commissioner is further authorized to accept reports submitted by approved inspection agencies in accordance with this code.

§28-127.10 Inspection requests. It shall be the duty of the holder of the building permit or the holder's duly authorized agent to notify the department when work requiring department inspection is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspection of such work for any inspections that are required by this code.

§28-127.11 Sign-off of completed work. All defects noted in a final inspection report shall be corrected. An architect, engineer or approved inspection agency responsible for

the final inspection shall submit a report, in a form prescribed by the department, certifying that all defects have been corrected and that the work is in substantial compliance with this code and the approved construction documents. Upon submission of such report, the department shall sign off and issue a letter of completion for the work. Where the department is responsible for the final inspection, such report shall be prepared and filed by the department employee performing the inspection and the department shall sign off and issue a certificate of occupancy or a letter of completion for the work.

§28-127.12 Payment of outstanding penalties. The department may refuse to issue a letter of completion for a building pending payment of all outstanding penalties.

§28-127.13 Inspection reports. All inspection reports shall be in writing and signed by the inspector, or the responsible individual, or an officer of the inspection service. A record of all inspections shall be kept by the department.

SECTION 128 CERTIFICATES OF OCCUPANCY

§28-128.1 General Provisions. No building or open lot shall be used or occupied without a certificate of occupancy issued by the commissioner. The provisions of the New York city charter, this code and other applicable laws and rules shall be complied with prior to the issuance of a final certificate of occupancy. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other applicable laws and rules.

§28-128.2 Change of occupancy or use.

- 1. No change in the existing use or occupancy classification of a building or open lot shall be made until the commissioner has issued a certificate of occupancy certifying that such building or open lot conforms to all of the applicable provisions of this code and all other applicable laws and rules for the proposed new occupancy or use.*
- 2. No change shall be made to a building inconsistent with the last issued certificate of occupancy for such building, or which would bring it under some special provision of this code or other applicable laws or rules, unless a new certificate of occupancy is issued by the commissioner.*
- 3. A building, structure or open lot used or occupied prior to the requirement for issuance of a certificate of occupancy may continue to be used or occupied without a certificate of occupancy pursuant to the requirements of section six hundred forty five of the New York city charter, this code and other applicable laws and rules provided there is no change in the existing use or occupancy classification of the building, structure, or portion thereof.*

§28-128.3 New Buildings. Except as permitted under the provisions of 28-128.15, no building hereafter constructed shall be occupied or used, in whole or in part, unless and until a certificate of occupancy shall have been issued certifying that such building conforms substantially to the approved plans and the provisions of this code and other applicable laws and rules.

§28-128.4 Altered buildings. Except as permitted under the provisions of section 28-128.15, no building hereafter altered so as to change from one occupancy group to another or from one zoning use group to another, either in whole or in part, or so as to cause a major alteration to existing means of egress, and no building hereafter altered for which a certificate of occupancy has not theretofore been issued, shall be occupied or

used unless and until a certificate of occupancy shall have been issued certifying that the alteration work for which the permit was issued has been completed substantially in accordance with the approved plans and the provisions of this code and other applicable laws and rules.

§28-128.4.1 Existing buildings. Upon application by the owner of an existing building, and subject to the provisions of section 28-102.5.1, the commissioner shall issue a certificate of occupancy for such building, provided that at the time of issuing such certificate, no notices of violation or other notices or orders affecting the building as they relate to the provisions of this code are pending before the department, and provided further that it is established to the satisfaction of the commissioner, after inspection and investigation, that the alleged use of the building has heretofore legally existed. The issuance of a certificate of occupancy for any existing building on waterfront property not used in conjunction with and in furtherance of waterfront commerce and/or navigation shall be conditioned upon compliance with the provisions of this code regulating means of egress, and upon the issuance of a certificate of completion by the department of small business services, and shall be limited to the uses and purposes certified to therein.

§28-128. 5 Applications for certificates of occupancy. All applications for certificates of occupancy shall be submitted on forms furnished by the department. Applications for new buildings or enlargements shall be accompanied by an accurate and complete lot survey made by a licensed surveyor showing such information as prescribed by the commissioner. The commissioner may waive the requirement of such survey in the case of small sheds, stands, signs, and similar small structures.

§28-128.5.1 Applicant. The application for a certificate of occupancy shall be made by or on behalf of the owner of the building or premises; and if made by a person other than the owner, the application shall be accompanied by a signed statement of the applicant stating that he or she is authorized by the owner to make the application. The full names and addresses of the owner, and applicant, and of the principal officers thereof, if a corporation, shall be stated in the application.

§28-128.5.2 Statement of compliance. When a certificate of occupancy for a new or altered building is applied for, the application shall be accompanied by a signed statement of the architect, engineer or other person who supervised or superintended the construction or alteration work, stating that he or she has examined the approved plans and specifications of the building for which the certificate of occupancy is sought, and that, to the best of his or her knowledge and belief, the building has been erected or altered in accordance with the approved plans and specifications and, as erected or altered, complies with the provisions of this code and all other applicable laws and rules, except insofar as variations or variances therefrom have been legally permitted or authorized, specifying such variations or variances in such required statement.

§28-128.6 Review of applications for certificates of occupancy. All applications for certificates of occupancy and accompanying papers shall be examined promptly after their submission. If the building is entitled to the certificate of occupancy applied for, the application shall be approved and the certificate of occupancy issued by the commissioner within ten calendar days after submission of the application. Otherwise, the application shall be rejected and written notice of rejection, stating the grounds of rejection, shall be given to the applicant within ten calendar days of the submission of the application. Wherever an application has been rejected and proof is thereafter submitted establishing that the grounds of rejection have been met and that the building

is entitled to the certificate of occupancy applied for, the application shall be approved and the certificate of occupancy issued within ten calendar days after submission of such proof.

§28-128.7 *Certificate of occupancy issued.* After the commissioner inspects the building or structure and determines that the building or structure conforms substantially to the approved plans and to the provisions of this code and other applicable laws and rules, the commissioner shall issue a certificate of occupancy that shall contain information including, but not limited to:

1. The building permit number.
2. The address of the structure.
3. Block and lot numbers pertaining to the zoning lot as defined in section 12-10 of the New York city zoning resolution.
4. The description of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code.
6. The name and signature of the commissioner.
7. The code under which the permit was issued.
8. The use and occupancy, in accordance with this code and the zoning resolution.
9. The type of construction as defined in this code.
10. The design occupant load of floors and spaces.
11. Types of major fire suppression or alarm systems.
12. Any special stipulations and conditions of the building permit.
13. The maximum permissible live loads on the several floors of the building

§28-128.8 *Pavement plan.* No certificate of occupancy shall be issued for any building requiring a pavement plan pursuant to section 28-121 unless and until an inspection has been made to show that all work necessary for compliance with the pavement plan has been completed.

§28-128.8.1 *Certification.* No certificate of occupancy shall be issued for any building requiring a certification pursuant to section 28-121 unless and until the applicant, after completion of construction work, inspects the sidewalk and certifies that the sidewalk is free from defects.

Exception: The commissioner may issue a certificate of occupancy without compliance with this section provided the owner furnishes to the department prior to the issuance of the certificate of occupancy security satisfactory to the department that the sidewalk will be installed and paved or repaired within the time specified by the department.

§28-128.9 *Storm water drainage.* No certificate of occupancy shall be issued until the department confirms by inspection that all work relating to the installation of the part of the storm water drainage system which lies outside of such property, if and as required by section 24-526 of the administrative code, has been satisfactorily completed.

§28-128.10 *Fire protection plan.* No certificate of occupancy or temporary certificate of occupancy shall be issued until a fire protection plan, if required under the provisions of this code has been filed and accepted.

§28-128.11 *Electrical work.* No certificate of occupancy shall be issued unless compliance with the New York city electrical code is certified by the commissioner.

§28-128.12 *Certificates of compliance.* No certificate of occupancy shall be issued until certificates of compliance are issued for the following types of service equipment:

1. Air conditioning and ventilation systems.
2. Elevators, escalators, moving walks and stairways, dumbwaiters.

3. Fuel burning and fuel oil storage equipment.
4. Refrigeration systems.
5. Heating systems.
6. Boilers.

§28-128.13 *Place of assembly certificate of operation.* The issuance of a certificate of occupancy shall not authorize the use of any space as a place of assembly unless and until a place of assembly certificate of operation has been issued for such space.

§28-128.14 *Payment of outstanding penalties.* The department may refuse to issue a final certificate of occupancy for a building pending payment of all outstanding penalties.

§28-128.15 *Temporary certificates of occupancy.* The commissioner is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, provided that the subject portion or portions of the building or structure requiring the temporary certificate of occupancy may be occupied in a manner that will not endanger public safety, health, or welfare. The commissioner shall set a time period during which the temporary certificate of occupancy is valid.

§28-128.16 *Amended certificate of occupancy.* Where a building exceeds three stories in height and the change does not exceed twenty per cent of the total floor area, an amendment to the existing certificate of occupancy for such new use shall be issued by the commissioner certifying that the proposed new occupancy and use conforms to the provisions of the laws governing building construction and that the proposed use will not be in conflict with any provisions of the labor law, multiple dwelling law or the zoning resolution.

§28-128.17 *Partial certificate of occupancy.* A partial certificate of occupancy may be issued to a specific floor or floors of an existing building erected prior to January 1, 1938 subject to the following conditions:

1. The building does not have an existing certificate of occupancy.
2. The floor or floors for which a certificate of occupancy is issued may not constitute more than 50% of the gross floor area of the building.
3. The building is of fire-proofed construction and protected with a wet sprinkler system.
4. Adequate means of egress are provided from all floors.
5. Upon inspection, the building is deemed safe for occupancy.

§28-128.18 *Revocation of certificates of occupancy.* The commissioner is authorized to request, in writing, pursuant to section six hundred forty five of the New York city charter that the board of standards and appeals or a court of competent jurisdiction revoke, vacate, or modify a certificate of occupancy issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information provided to the department.

§28-128.19 *Record of certificates.* A record of all certificates of occupancy shall be kept by the department; and copies thereof shall be furnished by the department upon request, and on the payment of the fee prescribed in section 28-126 of this chapter. The certificate of occupancy or a copy thereof shall be available for inspection at the building at all reasonable times.

§28-128.20 *Posting of certificates of occupancy.* All buildings shall be posted by the owner with a copy of the building's certificate of occupancy except buildings classified in occupancy group J3. Buildings that are not required to have a certificate of occupancy shall be posted by the owner with a sign or placard in a form prescribed by the commissioner. The certificate of occupancy or sign, as applicable, shall be permanently

affixed to the structure in a conspicuous location in a public hall, corridor, management office of the building or as otherwise prescribed by the commissioner, and shall state the live loads and the occupant loads in the building and all parts thereof, as provided in this code.

§28-128.20.1 Replacement of posted certificates of occupancy and signs. All posted certificates of occupancy or signs, as applicable, shall be furnished by the owner, shall not be removed or defaced and, if lost, removed or defaced, shall be immediately replaced. The commissioner may inspect or cause to be inspected periodically all buildings for compliance with the provisions of this code in regard to posting; and the inspection reports shall specify any violation thereof.

SECTION 129

SERVICE UTILITIES

§28-129.1 Connection of service utilities. It shall be unlawful for any utility company to supply gas to a building, place or premises in which new meters other than replacement are required until a certificate of approval of gas installation from the department of buildings is filed with such utility company. When new gas service piping has been installed it shall be locked-off by the utility company either by locking the gas service line valve or by installing a locking device on the outside gas service line valve. The lock shall not be removed until the gas meter piping (other than utility owned) and gas distribution piping has been inspected and certified as required by the department of buildings as being ready for service.

§28-129.1.1 Exemptions from permit requirement. Plumbing permits shall not be required for the installation or alteration of gas service piping or gas meter piping including meters, valves, regulators, and related equipment, when such work is to be performed and serviced and maintained by utility corporations subject to the jurisdiction of the public service commission; nor shall plumbing permits be required for the emergency repair of gas distribution piping when such work is performed by licensed master plumbers or by utility corporations subject to the jurisdiction of the public service commission, in order to alleviate hazardous conditions, provided that a written report describing the details of such repairs shall be filed with the commissioner upon completion of the work.

§28-129.1.2 Alterations to gas piping systems. When alterations, extensions or repairs to existing gas meter piping or gas distribution piping requires the shut-off of gas flow to a building, the utility company shall be notified by the owner or his or her authorized representative.

§28-129.2 Temporary connection. The commissioner shall have the authority to authorize the temporary connection of the building or system to the gas service utility.

§28-129.3 Authority to disconnect utility service. The commissioner may authorize disconnection of gas service to the building, structure or system regulated by this code and the codes referenced in case of emergency where necessary to eliminate an immediate hazard to life or property. The department shall notify the local gas utility company, and wherever possible the owner and occupant of the building, structure or service system of the decision to disconnect prior to taking such action.

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SECTION 130

ENFORCEMENT

§28-130.1 Unlawful acts. It shall be unlawful for any person to erect, construct, alter, extend, repair, fail to maintain, move, remove, demolish, occupy, use or operate any building, structure, premises, or equipment, or to conduct any subject matter regulated by this code or by the zoning resolution, or cause same to be done, in conflict with or in violation of any of the provisions of this code, the zoning resolution, or the rules of the department or any other law or rule enforced by the department.

§28-130.2 Notices and orders. The commissioner, or his or her designee, is authorized to issue notices and orders to the persons responsible for the unlawful use or condition cited in section 28-130.1. Each such notice or order shall have the commissioner's signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

§28-130.2.1 Contents of notices and orders. All notices and orders issued by the commissioner shall contain a description of the building, structure, premises, equipment or subject matter affected, and shall be addressed to the owner, lessee, person in charge, or occupant of the building, structure, premises, equipment or to any person responsible for the unlawful use or condition. The premises shall be designated by address, where applicable.

§28-130.2.2 Service of notices and orders. Except as otherwise provided in this code, service of notices and orders issued by the commissioner may be made:

- 1. With respect to notices and orders returnable before administrative tribunals, as provided in any law or rule of the city or state of New York;*
- 2. With respect to other notices and orders, by regular mail.*
- 3. Such notices and orders may be served by any officer or employee of the department, or by any person authorized by the commissioner.*

§28-130.3 Civil judicial enforcement. The owner, lessee, person in charge, or occupant of any building, structure, premises, equipment or part thereof, where a violation of this code, the zoning resolution or any other provision of law or rule enforceable by the department or any order issued by the commissioner shall exist or the agent, architect, builder, contractor, engineer, or any other person who commits or assists in any such violation or who maintains any building, structure, premises, equipment or part thereof where any such violation shall exist shall be subject to an action or proceeding to restrain, correct or abate such violation, or to compel compliance with such order. Upon request of the commissioner, the corporation counsel may institute judicial actions or proceedings seeking such relief. Any person responsible for the violation shall be subject to the payment of a civil penalty of not more than ten thousand dollars for each such violation.

§28-130.3.1 Corporation counsel. Such actions and proceedings may be instituted by the corporation counsel in the name of the city in any court of competent jurisdiction in the city and shall be given preference over pending causes therein. In such actions or proceedings, the city may apply for restraining orders, preliminary injunctions or other provisional remedies, with or without notice; and no undertakings shall be required as a condition to the granting or issuing of any such order, injunction or remedy, or by reason thereof. No court shall lose jurisdiction of any action or proceeding hereunder by reason of a plea that the title

to real estate is involved if the object of the action is to recover a fine for the violation of any of the provisions of this code.

§28-130.3.2 *Presumptive evidence.* In any action or proceeding founded upon a claim by the commissioner that any law or rule enforceable by the department has been violated, or that a lawful order issued by him or her has not been complied with, a certificate in writing by the commissioner, or his or her authorized representative shall be presumptive evidence of any matter stated therein.

§28-130.3.3 *Costs.* In no case shall the department, or any officer or employee thereof, be liable for costs in any such action or proceeding; and officers and employees of the department, acting in good faith and without malice, shall be free from liability for acts done in any such action or proceeding.

§28-130.3.4 *Lien.* Any judgment rendered in any such action or proceeding shall be and become a lien upon the premises named in the complaint in such action or proceeding, if any, the lien to date from the time of filing a notice of pendency in the office of the clerk of the county in which the premises is located, and to have priority before any mortgage or other lien existing prior to such filing, except tax and assessment liens.

§28-130.3.5 *Notice of pendency.* The notice of pendency referred to in this section shall consist of a copy of the notice issued by the commissioner, requiring the removal of the violation, and a notice of the action or proceeding instituted, or to be instituted thereon. Such notice of pendency may be filed at any time after the service of the notice issued by the commissioner as aforesaid; provided he or she may deem such action to be necessary. Any notice of pendency filed pursuant to the provisions of this code may be vacated and cancelled of record upon an order of a justice of the court in which such action or proceeding was instituted or is pending, or upon the consent in writing of the corporation counsel. The clerk of the county where the notice is filed is hereby directed and required to mark any such notice of pendency, and any record or docket thereof, as vacated and cancelled of record upon the presentation and filing of a certified copy of such order or consent.

§28-130.4 *Criminal judicial enforcement.* The owner, lessee, person in charge, or occupant of any building, structure, premises, equipment or part thereof, where a violation of this code, the zoning resolution or any other provision of law or rule enforceable by the department or any order issued by the commissioner shall exist or the agent, architect, builder, contractor, engineer, or any other person who commits or knowingly assists in any such violation or who maintains any building, structure, premises, equipment or part thereof where any such violation shall exist shall be guilty of a criminal offense punishable by a fine or imprisonment or both a fine and imprisonment in accordance with a schedule to be enacted by local law. Such local law shall classify offenses as violations or misdemeanors based on the repetition and/or the seriousness of the offenses.

§28-130.4.1 *Other penalties.* The criminal penalties provided by this code shall be in addition to or alternative to any civil sanctions authorized to be imposed for an unlawful use or condition cited in this code.

SECTION 131 ILLEGAL CONVERSIONS

§28-131.1 *Illegal conversions.* No person, except in accordance with all requirements of this code, shall convert, knowingly take part or assist in the conversion or permit the maintenance of the conversion of a residence that is legally approved for

occupancy as a dwelling for one or more families to a residence for occupancy as a dwelling for more than the legally approved number of families. Any person who shall violate or fail to comply with the provisions of this section shall be punished as provided herein. Upon the finding of such violation and the imposition of such punishment the department or if applicable the environmental control board shall forward to the internal revenue service the New York state department of taxation and finance and the New York city department of finance the name and address of the respondent or defendant, the address of the building or structure with respect to which the violation occurred and the time period during which the violation was found to have existed.

§28-131.1.1 Criminal penalties for illegal conversions. Any person who shall convert, or knowingly take part or assist in the conversion or permit the maintenance of the conversion of a building that is legally approved for occupancy as a one-family or two-family dwelling, to a dwelling for occupancy by four or more families, shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for a period not to exceed one year and by a fine for each dwelling unit added of not less than one thousand dollars nor more than five thousand dollars for the first offense, not less than two thousand five hundred dollars nor more than fifteen thousand dollars for a second offense and not less ten thousand dollars nor more than twenty thousand dollars for a third or subsequent offense. Any person who shall convert, or knowingly take part or assist in the conversion or permit the maintenance of the conversion of a building that is legally approved for occupancy as a one-family dwelling, to a dwelling for occupancy by two or three families, or a residence that is legally approved for occupancy as a two-family dwelling, to a dwelling for occupancy by three families shall be guilty of an offense punishable by a fine of not more than five hundred dollars or imprisonment for not more than sixty days or both.

§28-131.1.2 Civil penalties for illegal conversions. Illegal conversions shall be subject to the following civil penalties:

1. Except as otherwise provided below, any person who shall convert, knowingly take part or assist in the conversion or permit the maintenance of the conversion of a residence that is legally approved for occupancy as a dwelling for one or more families to a residence for occupancy as a dwelling for more than the legally approved number of families shall, in addition to any other punishment, also be liable for the payment of a civil penalty of (i) not less than fifty dollars nor more than one hundred dollars per day, for each dwelling unit in excess of the lawful number, commencing on the date a notice of violation is issued and terminating on the date of the filing of a valid certification that the condition constituting the violation has been corrected or the date of final adjudication of the violation, whichever occurs first, or (ii) for a third or subsequent violation by the same respondent at the same premises within an eighteen month period, a civil penalty of not less than five thousand dollars nor more than fifteen thousand dollars. Such civil penalties may be recovered in a civil action brought in the name of the city in any court of record in the city or before the environmental control board.
2. Any person who shall convert, or knowingly take part or assist in the conversion or permit the maintenance of the conversion of a building that is legally approved for occupancy as a one-family or two-family dwelling, to a dwelling for occupancy by four or more families, shall, in addition to any other punishment, also be liable for the payment of a civil penalty of one

thousand dollars per day for each dwelling unit in excess of the lawful number, commencing on the date a notice of violation is issued and terminating on the date of the filing of a valid certification that the condition constituting the violation has been corrected or the date of final adjudication of the violation, whichever occurs first, to be recovered in a civil action brought in the name of the city in any court of record in the city or before the environmental control board.

3. There shall be a rebuttable presumption that the violation continued to exist from the date of the issuance of a notice of violation until the date of adjudication or proof of correction to the satisfaction of the commissioner.

SECTION 132

FALSE STATEMENTS

§28-132.1 *False statements in certificates, forms, written statements, applications, reports or certificates of correction. Any person who shall knowingly make a false statement or who shall knowingly falsify or allow to be falsified any certificate, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or any rule of any agency promulgated thereunder, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than five thousand dollars nor more than ten thousand dollars, or by imprisonment not to exceed six months, or both. Such person shall also be liable for a civil penalty of not less than five thousand dollars nor more than ten thousand dollars, which may be recovered in a proceeding before the environmental control board. In any such proceeding that relates to a false statement in a certification filed pursuant to this section, if an inspection made within six months after the filing of the certification finds a condition constituting a violation that is the same as the condition described in the notice of violation with respect to which such certification was filed, there shall be a rebuttable presumption that the condition described in such notice of violation continued and is the same condition found in the inspection.*

§28-132.2 *Falsely impersonating an officer. Any person who falsely represents himself or herself as an officer, inspector or employee of the department, or as acting under the authority of the department, or who without authority uses, wears or displays a shield or other insignia or emblem such as is worn by such officer, inspector or employee, shall be guilty of a misdemeanor.*

SECTION 133

FAILURE TO FILE REQUIRED REPORTS

§28-133.1 *Civil penalty for failure to file required reports. The owner, lessee, person in charge, or occupant of any building, structure, premises, equipment or part thereof who fails to file any report required pursuant to the provisions of this code shall be liable for a civil penalty in accordance with a schedule to be enacted by local law. Such local law shall provide for daily, weekly or monthly penalties for failure to file periodic reports in such amounts as shall be necessary to enforce compliance with specified filing requirements. A waiver or reduction of the penalties provided in this section shall be available to a subsequent bona fide purchaser of the premises pursuant to department rule.*

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SECTION 134
ENVIRONMENTAL CONTROL BOARD

§28-134.1 Environmental control board. In addition to or as an alternative to any of the remedies and penalties provided in this code, any person who shall violate or fail to comply with any of the provisions of this code, the zoning resolution or rules of the department shall, except as otherwise specifically provided by local law, be liable for a civil penalty, which may be recovered in a proceeding before the environmental control board. Such proceeding shall be commenced by the service of a notice of violation returnable before the board and the other provisions of this code relating to notification prior to the commencement of judicial proceedings shall not apply to the recovery of civil penalties in proceedings before the environmental control board. Except as otherwise specifically provided, such civil penalty shall be determined in accordance with a schedule of civil penalties to be enacted by local law. Such local law shall classify violations based on the repetition and/or the seriousness of the violations.

§28-134.2 Lessees. Notwithstanding any other provision of this section, for the purpose of any multiple offense schedule adopted by local law in accordance with this section, if the respondent is the owner or agent of the building or structure with respect to which a violation occurred or a lessee of the entire building or structure, a prior violation by the same respondent shall not serve as a predicate for purposes of such multiple offense schedule if the prior violation or the violation for which penalties are to be imposed occurred within an area of the building or structure which, at the time of the violation, was leased to and under the control of a person other than the respondent, except that this provision shall not apply if both the prior violation and the violation for which penalties are to be imposed occurred within areas leased to and under the control of the same lessee. In any proceeding before the board, the burden of proof with respect to this exception shall be upon the respondent.

§28-134.3 Order to certify correction. Except as otherwise provided in this section whenever the commissioner serves a notice of violation returnable before the environmental control board, the commissioner shall also issue and serve with such notice an order requiring the respondent to correct the condition constituting the violation and to file a certification with the department that the condition has been corrected. Such order shall require that the condition be corrected within thirty days from the date that the order is issued or in the case of a hazardous violation within such time as shall be set forth in the order and that certification of the correction of the condition shall be filed with the department in a manner and form and within such further period of time as shall be established by rule of the department.

§28-134.4 Postponement. If the board finds, upon good cause shown, that the respondent cannot correct the violation within the period specified in this section it may, with the concurrence of the commissioner, postpone the period for compliance with such order upon such terms and conditions and for such period of time as shall be appropriate under the circumstances.

§28-134.5 First violation. The board shall not impose any civil penalty for a first violation if the respondent complies with the order issued pursuant to this section to correct and to certify correction of the violation within the time set forth in the order but such violation shall serve as a predicate for purposes of any multiple offense schedule adopted by local law pursuant to this section.

§28-134.6 Failure of proof. In any proceeding before the environmental control board, if the board finds that the commissioner has failed to prove the violation charged,

it shall notify the commissioner and the order requiring the respondent to correct the condition constituting the violation shall be deemed to be revoked.

§28-134.7 Civil penalty for failure to certify the correction of a violation. Any person who shall fail to comply with an order of the commissioner issued pursuant to this section to correct and to certify correction of a violation within the time specified in such order or within such further period of time as may be provided by the environmental control board pursuant to this section, in addition to the penalties that may be or have been imposed for the violation referred to in the order, shall be liable for a civil penalty of not more than five thousand dollars for each violation for which there has been a failure to comply with such order. Such civil penalty may be recovered in a proceeding before the environmental control board.

§28-134.8 False statements in certification of correction. For the purposes of this section, if the environmental control board finds that a respondent has knowingly made false statements relating to the correction of a violation in a certification filed pursuant to this section such certification as to correction shall be null and void and the penalties set forth in this section may be imposed as if such false certification had not been filed with and accepted by the department.

§28-134.9 Enforcement of environmental control board judgments against owners for certain building code violations. Notwithstanding any provision of law to the contrary, an environmental control board judgment against an owner for a building code violation with respect to a private dwelling, a wooden-framed single room occupancy multiple dwelling, or a dwelling with a legal occupancy of three or fewer dwelling units shall constitute a tax lien on the property named in the violation with respect to which such judgment was rendered, as hereinafter provided. Such liens shall be entered and enforced as provided in this section. The procedures provided in this section for the enforcement of environmental control board judgments against owners shall be in addition to any other methods provided under any other provision of law for the enforcement of such judgments.

§28-134.10 Record of unpaid judgments. There shall be filed in the office of the department a record of all such unpaid judgments. Such records shall be kept by tax lot and block number and shall be accessible to the public during business hours. An entry of a judgment on the records of the department shall constitute notice to all parties.

§28-134.11 Lien. All such unpaid judgments shall constitute a lien upon the property named in the violation with respect to which such judgment was rendered when the amount thereof shall have been definitely computed as a statement of account by the department, and the department shall cause to be filed in the office of the city collector an entry of the account stated in the book in which such charges against the property are to be entered. Such lien shall have a priority over all other liens and encumbrances except for the lien of taxes and assessments. However, no lien created pursuant to this section shall be enforced against a subsequent purchaser in good faith or mortgagee in good faith unless the requirements of this section are satisfied.

§28-134.11.1 Notice. A notice thereof, stating the amount due and the nature of the charge, shall be mailed by the city collector within five days after such entry to the last known address of the person whose name appears on the records in the office of the city collector as being the owner or agent of the property or as the person designated by the owner to receive tax bills or , where no name appears, to the property , addressed to either the "owner" or the "agent."

§28-134.11.2 Mailing. Such notice mailed by the city collector pursuant to this section shall have stamped or printed thereon a reference to this section.

§28-134.11.3 *Failure to pay charge.* If such charge is not paid within thirty days from the date of entry, it shall be the duty of the city collector to receive interest thereon at the same rate as unpaid real property taxes, to be calculated to the date of payment from the date of entry.

§28-134.11.4 *Enforcement of lien.* Such charge and the interest thereon shall continue to be, until paid, a lien on the property. Any remedy or procedure available for the enforcement of tax liens against such property, including, but not limited to, any sale of a tax lien or any foreclosure of a tax lien, shall be available with respect to such tax lien. In addition, such tax lien may be satisfied in accordance with the provisions of section 354 of the real property actions and proceedings law.

§28-134.11.5 *Validity of lien.* In any proceeding to enforce or discharge a lien created pursuant to this section, the validity of the lien shall not be subject to challenge based on the lawfulness of the judgment, except as provided in this section.

§28-134.11.6 *Challenge.* No such challenge may be made except by the owner of the property or a mortgagee or lienor whose mortgage or lien would, but for the provisions of this section, have priority over the department's lien.

§28-134.11.7 *Notice to mortgagees and lienors.* Notwithstanding the foregoing provisions, no such judgment shall be entered and enforced as a tax lien against any property unless at the time of the issuance of the notice of violation a copy of such notice was also served on all mortgagees and lienors of record of such property by mail addressed to the recorded addresses of such mortgagees and lienors.

SECTION 135 ABATEMENT OF PUBLIC NUISANCE CAUSED BY CERTAIN ILLEGAL OCCUPANCIES

§28-135.1 *Abatement of public nuisances caused by illegal commercial or manufacturing occupancy in certain zoning districts.* Any building or part thereof that is located in a residence district and that is occupied for a use not permitted in such district in violation of the zoning resolution, without a valid certificate of occupancy, is hereby declared to be a public nuisance.

§28-135.2 *Order of closure.* If a building or part thereof in which such a nuisance occurs is not occupied primarily as a residence, the commissioner may, in addition to or as an alternative to any other remedy under any other provision of law, after notice and the opportunity for a hearing in accordance with this section, order the closing of such building or part thereof to the extent necessary to abate the nuisance.

§28-135.3 *Notice of hearing.* A notice of hearing with respect to an order of closure shall be served on the owner and mortgagee of record of such building or part thereof and on any person alleged to be occupying such building or part thereof at which the nuisance is located in the following manner.

§28-135.4 *Service of notice of hearing.* Service may be made on the owner by delivering such notice to the owner or to an agent of the owner or to a person of suitable age and discretion at the residence or place of business of the owner or, if upon reasonable application such delivery cannot be completed, by affixing such notice in a conspicuous place at the owner's place of business or residence or by placing it under the entrance door at either of such locations or by delivering such notice to a person

employed by the owner to work at or to manage or maintain the premises at which the nuisance is located and, in all instances except personal delivery upon such owner by mailing the notice of hearing as follows.

§28-135.4.1 Mailing to owner's registered address. To the person registered with the department of housing preservation and development as the owner or agent of the premises, at the address filed with such department in compliance with article two of subchapter four of chapter two of title twenty-seven of the administrative code; or

§28-135.4.2 Mailing to billing address. To the person designated as owner of the building or designated to receive real property tax or water bills for the building at the address for such person contained in one of the files compiled by the department of finance for the purpose of the assessment or collection of real property taxes and water charges or in the file compiled by the department of finance from real property transfer forms filed with the city register upon the sale or transfer of real property; or

§28-135.4.3 Mailing to recorded address. To the person in whose name the real estate affected by the order of the commissioner is recorded in the office of the city register or the county clerk as the case may be at the address set forth on the recorded instrument.

§28-135.4.4 Service on corporate owner. Service may be made on an owner that is a corporation pursuant to section 306 of the business corporation law; however, service upon a corporation shall be deemed to have been completed forty-five days following service upon the secretary of state;

§28-135.4.5 Service on mortgagees. Service may be made upon mortgagees of record by mailing such notice to the mortgagees at the address set forth on the recorded instrument.

§28-135.4.6 Service on occupants. Service may be made upon an occupant by delivering such notice to the occupant or to a person employed by the occupant to work at or to manage or maintain the premises at which the nuisance is located; or by affixing such notice to the premises at which the nuisance is located in a conspicuous place or by placing a copy under the entrance door of such premises and mailing a copy of such notice to the occupant at such premises; and in all instances except personal delivery upon such occupant, by mailing the notice of hearing to the occupant at the premises at which the nuisance is located.

§28-135.4.7 Proof of service. Proof of service shall be filed with the commissioner.

§28-135.5 Conduct of hearing by office of administrative trials and hearings. The hearing shall be conducted by the office of administrative trials and hearings. The administrative law judge assigned to hear the matter shall submit his or her proposed findings of fact and recommended decision to the commissioner. If based on such recommended decision, proposed findings of fact, and the record of the hearing the commissioner determines that the building or part thereof is a public nuisance, pursuant to this section, he or she may issue an order of closure. Such order shall not bar legally required ingress or egress for residential occupancy of parts of the building that are not subject to the order of closure.

§28-135.6 Lack of knowledge not a defense. At such hearing it shall not be a defense that the owner, occupant, lessor, lessee, mortgagee, or other person having an interest in the property lacked knowledge of or did not acquiesce or participate in the creation or continuation of the public nuisance.

§28-135.7 Closure not an act of possession. A closure ordered by the commissioner pursuant to this section shall not constitute an act of possession, ownership, or control by the city over the closed premises.

§28-135.8 Posting of order of closure. An order of closure shall be posted at the building or part thereof that is the subject of such order, and shall be mailed to the record owner of such premises, and any record mortgagee at the address for such person set forth in the recorded instrument, and to the person designated as owner or agent of the building or designated to receive real property tax or water bills for the building at the address for such person contained in one of the files compiled by the department of finance for the purpose of the assessment or collection of real property taxes and water charges or in the file compiled by the department of finance from real property transfer forms filed with the city register upon the sale or transfer of real property. A copy shall also be filed with county clerk or register of the county in which such premises are located. Such filing shall be notice of the order to any subsequent owner and such owner shall be subject to such order.

§28-135.9 Enforcement of order of closure. On the tenth business day after the posting of such order and upon the written directive of the commissioner, police officers and authorized employees of the department shall act upon and enforce such order by sealing, padlocking, or otherwise preventing access to the premises in a manner that will not bar legally required ingress or egress for residential occupancy of parts of the building that are not subject to the closure order.

§28-135.10 Rescission of order of closure. If at any time after the issuance of such order, the owner, mortgagee, or other person having an interest in the property provides assurance, in a form satisfactory to the commissioner, that the use of the premises upon which the public nuisance determination was based has been discontinued and will not reoccur, or such owner, mortgagee, or other person establishes that the premises may be lawfully occupied for such use, the commissioner shall rescind the closure order. If such order is rescinded, the commissioner shall, upon request of such owner, mortgagee, or other person, provide a copy of such rescission, which may be filed with the county clerk or register of the county in which such premises are located.

§28-135.11 Violation of closure order. It shall be a misdemeanor for any person to use or occupy or to permit any other person to use or occupy any building or part thereof that has been sealed, padlocked, or otherwise closed pursuant to an order of the commissioner. Mutilation or removal of a posted order of the commissioner shall be punishable by a fine of not more than two hundred fifty dollars or by imprisonment not exceeding fifteen days, or both, provided such order contains therein a notice of penalty. Intentional disobedience or resistance to any provision of an order issued by the commissioner pursuant to this section, in addition to any other punishment prescribed by law, shall be punished by a fine of not more than one thousand dollars, or by imprisonment not exceeding six months, or both.

§28-135.12 Review of order of closure. Notwithstanding paragraph (a) of subdivision six of section six hundred sixty-six of the New York city charter, the board of standards and appeals shall not hear and decide appeals from or review any order, requirement, decision or determination of the commissioner or designee of the commissioner that is issued pursuant to this section.

SECTION 136
PENALTY FOR WORK WITHOUT A PERMIT

§28-136.1 Department penalty for work without a permit. Whenever any work for which a permit is required pursuant to this code has been performed without a permit, a penalty shall be imposed by the department as provided in this section.

§28-136.1.1 Penalty for work without permit on one or two-family dwelling. Where work has been performed without a permit on a one-family or two-family dwelling the penalty shall equal two times the amount of the fee payable for the permit. Where only part of the work has been performed without a permit, the penalty shall be reduced proportionately according to the amount of work still to be performed at the time a permit is issued. Notwithstanding the foregoing, no such penalty shall be less than one hundred dollars.

§28-136.1.2 Penalty for work without permit on other than one or two-family dwelling. The penalty for work without a permit on buildings other than one or two-family dwellings shall be ten times the amount of the fee payable for such permit. Where only part of the work has been performed without a permit, the penalty shall be reduced proportionately according to the amount of work still to be performed at the time a permit is issued. Notwithstanding the foregoing, no such penalty shall be less than five hundred dollars.

§28-136.3 Waiver. Such penalty and the permit fee shall be payable by the owner of the building on which the unpermitted work was performed. A waiver or reduction of such penalty shall be available to a subsequent bona fide purchaser of the premises pursuant to department rules.

§28-136.4 Payment of penalty required before issuance of permit. No permit shall be issued for work in violation of this section until the penalty assessed by the department pursuant to this section has been paid.

§28-136.5 Procedure. The department shall adopt a rule setting forth a procedure for assessment of penalties pursuant to this section.

SECTION 137
PEREMPTORY ORDERS

§28-137.1 Stop work orders. Whenever the commissioner finds that any building work is being executed in violation of the provisions of this code or any law or rule enforceable by the department, or in a dangerous or unsafe manner, the commissioner or his or her authorized representative may issue a stop work order.

§28-137.1.1 Issuance. Upon issuance of a stop work order by the commissioner, all work shall immediately stop unless otherwise specified. Such order may require all persons to forthwith vacate the premises and also require such work to be done as, in the opinion of the commissioner, may be necessary to remove any danger therefrom. The police department shall, upon the request of the commissioner, assist the department in the enforcement of this section. The stop work order may be given verbally or in writing to the owner, lessee or occupant of the property involved, or to the agent of any of them, or to the person or persons executing the work. A verbal order shall be followed within a reasonable time by a written order and shall include the reason for the issuance of the stop work order.

§28-137.1.2 Unlawful continuance. No person shall with knowledge or notice of a stop work order allow, authorize, promote, continue or cause to be continued any work covered by the stop work order, except such work that may be required under

sections 28-140.2 or 28-140.3.

§28-137.1.3 Penalties for failure to comply with stop work order. Any person who fails to comply with a stop work order shall be guilty of a misdemeanor and, upon conviction, shall be punished by a fine of not more than five thousand dollars or by imprisonment for not more than ninety days, or by both such fine and imprisonment. Such person shall also be liable for a civil penalty of not less than five hundred dollars nor more than five thousand dollars for each day there is non-compliance with such order. Such civil penalties may be recovered in a civil action brought in the name of the commissioner or in an administrative proceeding before the environmental control board. It shall be an affirmative defense that the work was performed to remedy an unsafe or hazardous condition.

§28-137.2 Public nuisance. Whenever any building, structure, place or premises is perilous to life or property by reason of the nature or condition of its contents, its use, the overcrowding of persons therein, defects in its construction, or deficiencies in fire alarm, fire extinguishing equipment or fire escape equipment, or by reason of any condition in violation of law or order of the commissioner, the commissioner may declare that the same, to the extent that he or she may specify, is a public nuisance and may order the same to be removed, sealed, abated, repaired, altered or otherwise improved.

§28-137.3 Vacate order. In case any order to remedy a condition imminently perilous, dangerous or detrimental to life, public safety or property, issued by the commissioner is not complied with, or the commissioner determines that an emergency exists requiring such action, he or she may order and immediately cause any building, structure, place or premises to be vacated.

§28-137.3.1 Basis for vacate. The commissioner may order the vacate of any building, structure, place or premises based on one or more of the following conditions:

- 1. Danger of structural failure, creating a hazard to life, public safety or property;*
- 2. Danger of façade failure that may compromise one or more exits or entrances, creating a hazard to life, public safety or property;*
- 3. Inadequate fire protection, detection, or suppression, creating a hazard to life, public safety or property;*
- 4. Inadequate egress, creating a hazard to life, public safety or property;*
- 5. Improper storage of hazardous materials, combustible or toxic, creating a hazard to life, public safety or property;*
- 6. Other conditions that may, in the judgment of the commissioner, pose a threat to life, public safety or property.*

§28-137.3.2 Enforcement of vacate order. All orders issued pursuant to this section shall be posted upon the premises. Immediately upon the posting of an order upon the premises, officers and employees of the police department, the department, and other authorized officers and employees of the city shall immediately act upon and enforce such order. The police department shall provide all reasonable assistance to the department and other authorized officers and employees necessary to carry out the provisions of this section.

SECTION 138
ORDER TO SEAL, SECURE AND CLOSE

§28-138.1 Order to seal, secure and close. If the commissioner determines such

action is necessary to the preservation of life and safety the commissioner may order a building subject to a vacate order to be sealed, secured and closed except that the commissioner shall not order sealed secured and closed any dwelling unit or other space lawfully used for residential purposes unless such dwelling unit or other space is sealed pursuant to article eight of subchapter three of chapter one of title twenty-six of the administrative code.

§28-138.1.1 *Definition.* For the purpose of this section, “sealed” and “sealed, secured and closed” shall mean the use of any means available to render the building, structure or part thereof inaccessible, including but not limited to the use of a padlock or cinder blocks.

§28-138.1.2 *Hearing.* Such order to seal, secure and close shall contain notice of the opportunity for a hearing with respect to such order to determine if the order was properly issued in accordance with the provisions of this section. Such hearing shall be conducted by the commissioner, or in the commissioner’s discretion, by the office of administrative trials and hearings or the environmental control board. If the matter is referred to such office or board, the hearing officer shall submit his or her findings of fact and a recommended decision to the commissioner. The hearing shall be held within three business days after the receipt of the written request of an owner, lessor, lessee, or mortgagee for such hearing. The commissioner shall render a decision within three business days after such hearing is concluded or findings of fact and a recommendation are submitted.

§28-138.1.3 *Service of seal, secure and close order.* Such order issued pursuant to this section shall be served as follows: It shall be mailed to the record owner of such premises; any record mortgagee of such premises at the address for such person as set forth in the recorded instrument; and if reasonably ascertainable, the person designated as owner’s agent of the building or designated to receive real property tax or water bills for the building at the address for such person contained in one of the files compiled by the department of finance for the purpose of the assessment or collection of real property taxes and water charges or in the file compiled by the department of finance from real property transfer forms filed with the city register upon the sale or transfer of real property. A copy shall also be filed with the county clerk of the county in which such premises are located. Such filing shall be notice of the order to any subsequent owner and such owner shall be subject to such order.

§28-138.1.4 *Rescission of seal, secure and close order.* An order issued pursuant to this section shall not be rescinded unless the owner, lessor, lessee or mortgagee seeking such rescission provides assurance, in a form satisfactory to the commissioner, that the conditions which caused the issuance of such order have been corrected and will not reoccur. If such order is rescinded, upon the request of the owner, lessor, lessee or mortgagee, the commissioner shall provide a certified copy of such rescission, which may be filed with the county clerk of the county in which such premises are located.

§28-138.1.5 *Expenses of enforcing seal, secure and close orders.* The expenses attending the execution of any and all orders duly made by the department shall respectively be a several and joint personal charge against each of the owners or part owners, and each of the lessees and occupants of the building, structure, enclosure, place or premises to which such order relates, and in respect to which such expenses were incurred; and also against every person or body who was by law or contract bound to do that in regard to such building, structure, enclosure, place

or premises which such order requires. Such expenses shall also be a lien on all rent and compensation due, or to become due, for the use of any building, structure, place or premises, or any part thereof, to which such order relates, and in respect to which such expenses were incurred.

§28-138.1.6 Notice of seal, secure and close order to community. The commissioner shall give written notice of the closing of any building, structure, enclosure, place or premises pursuant to this section, and any subsequent actions taken with respect thereto, as soon as practicable, to the borough president of the borough within which the closing has occurred; the council member representing the district within which the closing has occurred; and the local community board. On January first of each year, the commissioner shall submit a report to the council, setting forth the number of closings made in the previous year, the locations of such closings, and the nature and use of the premises closed. The commissioner shall, in addition, as soon as practicable after a building, structure, enclosure, place or premises has been closed, make and publish a report of said closing in a manner calculated to quickly notify the local community in which such closing occurred. The commissioner shall also make and publish a report of any premises reopened pursuant to his or her permission under this section. Failure to comply with this subdivision shall not invalidate any action taken by the commissioner pursuant to this section.

SECTION 139 PENALTIES FOR VIOLATION OF VACATE ORDERS

§28-139.1 Penalties and punishment for violation of order to vacate and order to seal, secure and close. Any person who violates the provisions of a vacate order or order to seal, secure and close issued pursuant to this section shall be liable for a civil penalty of not more than twenty-five thousand dollars and an additional civil penalty of not more than one thousand dollars for each day the violation continues.

§28-139.1.1 Penalties and punishment for removal of seal. Except as authorized by the commissioner, any person who removes or causes to be removed the seal from any premises sealed in accordance with an order of the commissioner or his or her designee shall be guilty of a misdemeanor punishable by imprisonment for no more than one year or a fine not to exceed fifty thousand dollars, or both such fine and imprisonment. Such person shall also be subject to a civil penalty not to exceed fifty thousand dollars.

§28-139.2 Access to vacated premises. The commissioner shall allow access to the premises vacated pursuant to this section to an owner, or a lessor, lessee or mortgagee upon the following conditions:

1. The submission of a written affirmation, satisfactory to the commissioner, that such person or persons will commence or cause to be commenced without delay all work necessary to correct the conditions stated in the vacate order or otherwise to make the premises meet all applicable laws and rules and will complete such work within a period of time and in a manner to be approved by the commissioner;
2. The submission of a written affirmation or other proof satisfactory to the commissioner describing the steps that have been taken and will be taken in the future to ensure that the premises will be used or operated in a lawful manner and specifying such lawful use;
3. If a license, permit or certificate of occupancy is necessary for such lawful use,

the submission of a written affirmation or other proof, satisfactory to the commissioner, describing the steps that have been taken and will be taken in the future to ensure that such premises will be used or operated in compliance with any law requiring such license, permit or certificate of occupancy; and

4. *If the premises are leased and the person making the affirmations described above in items 1, 2 and 3 is not such lessee, the commissioner may also require any authorized person seeking access pursuant to this subdivision to submit a written affirmation or other proof that proceedings to enable such person to take actions necessary to ensure compliance with the affirmations submitted by such authorized person pursuant to items 1, 2 and 3 have been commenced.*

§28-139.3 Civil penalty for false statement. Any person who makes a material false statement in any document submitted to the department which statement he or she knows or has reason to know will be relied upon by the commissioner in determining whether he or she will allow access to the premises shall be liable for a civil penalty of not more than fifty thousand dollars.

§28-139.4 Additional penalties for harm or injury from violation of vacate order or order to seal, secure and close. Notwithstanding any other law, rule, or regulation, any person, corporation, partnership, association or any other legal entity who permits a building, structure, enclosure, place or premises, or any part thereof, to be unlawfully occupied or used in contravention of an order of the commissioner pursuant to section 28-137.3 or section 28-138.1 of this code, or who negligently fails to prevent or prohibit such unlawful occupancy or use, shall be liable for a civil penalty of not more than one million dollars, if any other person suffers serious physical injury, as defined in section ten of the penal law, or death in the building, structure, place or premises or any part thereof subject to such order as a result of such unlawful occupancy or use. If more than one person suffers serious physical injury or death, such penalty shall be recoverable for each person suffering serious physical injury or death. Such penalty shall be recovered in a civil action brought by the corporation counsel in the name of the city in any court of competent jurisdiction. In determining the amount of the civil penalty to be imposed the court shall consider:

1. *The extent and severity of injury to persons and property caused by the violation;*
2. *The history of violations by the defendant at such premises, or any other premises, of laws or rules enforced by the department;*
3. *The degree of willfulness, recklessness, or negligence displayed by the defendant in committing the subject violation;*
4. *The defendant's financial resources; and*
5. *The defendant's good faith efforts to cure the subject violation, including efforts to obtain entry to or possession of the premises in order to do so.*

§28-139.4.1 In the event that the family of any person seriously injured or who has died as the result of any unlawful occupancy or use described in this section is unable to collect a judgment recovered in a civil action for personal injury or wrongful death against a defendant who has violated this section because of the insolvency of such defendant, the city may, in its discretion, pay to such injured person or the family of such deceased person an amount, as hereinafter provided, collected from such defendant in an action relating to the same injury or death commenced by the corporation counsel against such defendant pursuant to this section.

§28-139.4.2 Payments pursuant to this section shall be made as a matter of grace

and shall be in such amounts and in accordance with such standards and procedures as shall be established by the mayor, provided, however, that any payment made pursuant to this section shall be in an amount not exceeding out-of-pocket expenses, including indebtedness reasonably incurred for medical or other services necessary as a result of the injury upon which such action is based; loss of earnings or support resulting from such injury; burial expenses not exceeding two thousand five hundred dollars of a person who died as a result of such unlawful occupancy or use described in this section; and the unreimbursed cost of repair or replacement of articles of essential personal property lost, damaged or destroyed as a direct result of such unlawful occupancy or use. In no event shall the payment made to any person exceed the amount of such person's uncollected judgment for personal injury or wrongful death and in no event shall the total amount paid to any number of persons with such uncollected judgments against a single defendant exceed the actual amount collected by the city from such defendant in an action under this subdivision.

**SECTION 140
EMERGENCY POWERS OF THE COMMISSIONER**

§28-140.1 Temporary safeguards for dangerous structures. In case there shall be, in the opinion of the commissioner, actual and immediate danger that any structure or part thereof will fall, so as to endanger life or property, he or she may cause the necessary work to be done to render such structure temporarily safe. The commissioner may request the commissioner of citywide administrative services, the commissioner of housing preservation and development, or other city agencies to perform or cause the necessary work to be done to render such structure or part thereof temporarily safe.

§28-140.2 Emergency demolition or other work. Notwithstanding any other provisions of law, if the commissioner determines that a structure or any part thereof is in imminent danger of collapse and the exigency of the situation is such that any delay may cause further danger to the public safety, then the commissioner may direct the commissioner of housing preservation and development or the department of citywide administrative services, or other authorized agency to perform or arrange the performance of the emergency demolition of such structure or part thereof or such other work as deemed by the commissioner to make it safe.

§28-140.3 Emergency measures. The commissioner shall have the following additional powers in an emergency:

§28-140.3.1 Vacating structures. Notwithstanding any other provisions of law, where in the opinion of the commissioner, there shall be actual and immediate danger that any structure or part thereof will fall so as to endanger life or property, or where any structure or part thereof has fallen and life is endangered by the occupation thereof, the commissioner is hereby authorized and empowered to order and require the occupants of such structure or part thereof to vacate the structure forthwith.

§28-140.3.2 Stopping work and securing structures. Where in the opinion of the commissioner, any defective or illegal work in violation of or not in compliance with any of the provisions or requirements of this code, shall endanger life or property, the commissioner shall have the right and is hereby authorized and empowered to: order all further work to be stopped in and about such structure or premises; to require all persons in and about such structure or premises forthwith to vacate it; and to cause such work to be done in and about the structure as in his or her

judgment may be necessary to remove any danger therefrom.

§28-140.3.2.1 Notice. A verbal notice or order shall be followed within a reasonable time by written notice or order and shall include the reason for the issuance of such order.

§28-140.3.2.2 Police. The police commissioner shall enforce such orders or requirements when so requested by the commissioner or designee.

§28-140.3.3 Violations of protective measures during construction or demolition. During the construction or demolition of a structure, the commissioner shall notify the owner of the structure affected of any failure to comply with any of the provisions of this code that concern the protection of the public and workers during construction or demolition. Unless the owner so notified proceeds within twenty-four hours to comply with the orders of the commissioner, the commissioner shall have full power to correct the violation. All expenses incurred therefore shall become a lien on the property.

§28-140.3.4 Closing streets temporarily. The commissioner may, when necessary for the public safety, temporarily close the sidewalks, streets, structures or places adjacent to a structure or part thereof, and the police commissioner, or any of his or her subordinates shall enforce all orders or requirements made by the commissioner, when so requested by the commissioner.

§28-140.4 Report and inspection of unsafe buildings and property. Whenever persons engaged in building operations have reason to believe in the course of such operations that any building or property is dangerous or unsafe, such person shall forthwith report his or her belief in writing to the commissioner of buildings, who shall thereupon cause an inspection to be made of such building or property; and if such building or property is found to be dangerous or unsafe, the commissioner shall cause such action to be taken as he or she may deem necessary.

§28-140.5 Lien for emergency demolition. The expenses of the city in performing an emergency demolition of any structure or part of such structure or other work pursuant to this section shall constitute a debt recoverable from the owner and a lien upon the land and any part of such structure that was not demolished. Every such lien shall have priority over all other liens and encumbrances on the premises except for the lien of taxes and assessments. Except as otherwise provided by rule of the affected agency, the agency incurring such expense shall be governed by the procedures set forth in article eight of subchapter five of the housing maintenance code with respect to the enforcement of such debt and lien.

§28-140.6 Recovery of bodies from wrecked structures. Where any persons are known or believed to be buried under the ruins of any fallen structure or part thereof in the city, the commissioner shall cause an examination of the premises to be made for the recovery of the injured and bodies of the dead. Whenever, in making such examination, it shall be necessary to remove any debris from the premises, other city agencies shall cooperate with the commissioner in carrying out the purposes of this section, and shall provide suitable and convenient places for the deposit of such debris.

SECTION 141 UNSAFE BUILDINGS

§28-141.1 Conditions. Any structure or premises or part of a structure or premises that from any cause may at any time become dangerous or unsafe, structurally or as a fire hazard, or dangerous or detrimental to human life, health or safety, shall be demolished and removed or made safe and secure.

§28-141.1.1 Vacant buildings. Any vacant building not continuously guarded or not sealed and kept secure against unauthorized entry as herein before provided shall be deemed dangerous and unsafe as a fire hazard and dangerous and detrimental to human life, health and safety within the meaning of this section. A vacant building that is not continuously guarded shall have all openings sealed in a manner approved by the commissioner, and it shall be the duty of the owner thereof promptly to make any repairs that may be necessary for the purpose of keeping such building sealed and secure.

§28-141.1.2 Unsafe building. Any building, structure or part thereof described in this section shall be deemed an unsafe building, structure or premises.

§28-141.2 Record and notice of unsafe building, structure or premises. The department official or employee shall cause a report to be filed on an unsafe building, structure or premises. The report shall state the occupancy of the structure and the nature of the unsafe condition and be made a record of the department.

§28-141.3 Notice and order. The owner(s), executor(s), administrator(s), mortgagee(s), lessee(s) or any other person who may have a recorded vested or recorded contingent interest in the unsafe building, structure or premises, shall be served with a notice containing a description of the unsafe building, structure or premises and an order requiring such building be vacated, if necessary, and sealed, secured, repaired, shored, or demolished and removed as may be deemed necessary by the department.

§28-141.3.1 Content. Such notice shall require the person thus served immediately to certify to the department his or her acceptance or rejection of the order. The notice shall further notify said person(s) that upon his or her refusal or neglect to comply with any of the requirements of this provision, a survey of the building or premises named in such notice will be made at a time and place therein named. The notice shall also state that if, pursuant to the survey, it is found that the building, structure, or premises referred to therein is unsafe or dangerous by the surveyors, their report of survey will be placed before the supreme court for trial at a time and place named in such notice.

§28-141.4 Method of service. The notice and order shall be served in accordance with the civil practice law and rules of the state of New York.

§28-141.5 Owner abatement of unsafe or dangerous conditions. If the person served with a notice and order pursuant to this section shall immediately certify his or her assent to the securing or removal of such unsafe building, structure or premises condition, he or she shall be allowed a period of time as determined by the commissioner, or his or her designee, within which to commence and complete the abatement of the unsafe or dangerous condition. Such person shall employ sufficient labor and assistance to secure or remove such conditions as expeditiously as possible.

§28-141.6 Survey. A survey of the building or premises shall be conducted as follows:

§28-141.6.1 Identity of surveyors. The survey shall be made by three competent persons, of whom one shall be the commissioner or his or her designee; another shall be an architect licensed to practice in the State of New York appointed by a recognized professional organization or a professional engineer licensed to practice in the State of New York appointed by a recognized professional organization; and the third shall be an architect or engineer appointed by the person served with a notice pursuant to subsection 28-141.3 of this section. If the person served with such notice shall neglect or refuse to appoint such surveyor, the other two surveyors shall make the survey. In case they disagree, they shall appoint a third person to

take part in such survey, who shall be an architect or engineer of at least ten years' practice, whose decision shall be final.

§28-141.6.2 *Posting report of survey.* A copy of the report of the survey shall be posted on the structure that is the subject thereof by the persons holding the survey, immediately on their issuing such report.

§28-141.6.3 *Compensation of surveyors.* The architect or engineer appointed by the respective professional organization, as hereinbefore provided, who may act on any survey called in accordance with the provisions of this section, and the third surveyor who may have been called in the case of disagreement provided for in this section, shall each be paid a sum to be determined by rule to be promulgated by the department.

§28-141.6.4 *Cost of survey.* Any costs incurred by the city in connection with the survey shall become money due and owing to the city as part of the return of precept and judgment provided for in section 28-141.9 and section 28-141.10 of this code or pursuant to lien provided for in section 28-141.11 of this code

§28-141.7 *Court Proceeding.* Whenever the report of survey shall recite that the building, structure or premises surveyed is unsafe or dangerous, the corporation counsel or his or her designee shall, at the time specified in the notice, place such notice and report before a justice of the court named in the notice. The report of survey shall be in writing and constitute the issues to be placed before the court for trial. The purpose of the trial shall be to determine whether the unsafe building, structure, or premises shall be vacated and sealed, secured, shored, or demolished and removed.

§28-141.7.1 *Precedence of proceeding.* The unsafe building proceeding shall have precedence over every other business of such supreme court. The trial on the issues in the unsafe building proceeding shall be held without delay, at the time specified in the notice, and shall be held by a justice of the court or by a referee, whose decision or report in the matter shall be final.

§28-141.7.2 *Precept to abate.* If the justice or referee determines the building, structure or premises that is the subject of the report of survey is unsafe or dangerous, such justice or referee trying the case shall immediately issue a precept directed to the commissioner authorizing him or her forthwith to vacate, if necessary, seal, secure, shore, or demolish and remove said unsafe building, structure or premises that shall have been named in such report. The precept shall be effective for a period of three years from the date of issuance.

§28-141.7.3 *Notice of pendency.* A notice of pendency shall be filed in accordance with the following procedures:

1. The notice of pendency shall consist of a copy of the notice described in 28-141.3 and shall be filed in the office of the clerk of the county where the property affected by such action, suit or proceeding is located. Such notice of pendency may be filed at any time after the service of the notice described in 28-141.3.
2. Any notice of pendency filed pursuant to the provisions of this section that has not expired may be vacated and cancelled of record upon an order of a justice of the court in which such suit or proceeding was instituted or is pending, or upon the consent in writing of the corporation counsel. The clerk of the county where the notice is filed is hereby directed and required to mark any such notice of pendency, and any record or docket thereof, as vacated and cancelled of record upon the presentation and filing of a certified copy of such order or consent.

§28-141.8 Execution of precept. A precept issued pursuant to section 28-141.7.2 shall be executed in accordance with the following procedures:

§28-141.8.1 Work by the department. Upon receiving a precept under the provisions of section 28-141.7, the commissioner shall execute such precept, as therein directed, and may employ such labor and assistance and furnish such materials as may be necessary for that purpose. The commissioner or his or her designee shall direct the commissioner of citywide administrative services or the department of housing preservation and development or other authorized agency to perform work in accordance with the precept. Such work shall be performed by or under the direction of citywide administrative services in accordance with the provisions of section 4-204 of the administrative code, or the department of housing preservation and development, or such other authorized agency.

§28-141.8.2 Owner Application to perform work. The owner of such unsafe building, structure, or premises, or any party interested therein, if he or she applies to the commissioner immediately upon the issuing of such precept, shall be allowed to perform the requirements of such precept at his or her own cost and expense, if the performance shall be done immediately and in accordance with the requirements of such precept and other applicable laws and rules and such other requirements as the commissioner shall impose.

§28-141.8.3 Modification of precept. The commissioner or his or her designee shall have authority to modify the requirements of any precept when such commissioner or designee shall be satisfied that such change will secure the safety of such structure or premises equally well.

§28-141.8.3.1 Upon application. The commissioner or his or her designee shall also have authority to modify the requirements of any precept upon application to him or her in writing by the owner of the unsafe building, structure, or premises, or his or her authorized representative. In addition, upon application to modify the requirements of any precept to seal or shore the structure by the commissioner of housing preservation and development, citywide administrative services or such other authorized agency, the commissioner or designee shall have authority to modify such precept accordingly when he or she shall be satisfied that such change will secure the safety of such structure or premises equally well.

§28-141.8.3.2 Notice. After a determination to modify the precept is made by the commissioner, written notice of such determination shall be sent by regular mail to the owner and applicant for the modification if other than the owner, at his or her last known address.

§28-141.8.3.3 Failure of owner to perform work. If no action in accordance with the modified precept is undertaken by the owner or applicant for modification within the time period provided in the modification following the granting of such application, the commissioner may direct the department of housing preservation and development or the department of citywide administrative services or such other authorized agency to execute the original precept, provided however that prior to such execution, notice shall be provided by regular mail to the owner of the unsafe building, structure or premises and applicant for the modification if other than the owner, at his or her last known address. The owner shall continue to have the right to request the commissioner to modify the requirements of the precept prior to the execution thereof.

§28-141.8.4 Interference prohibited. It shall be unlawful for any person to

interfere, obstruct or hinder the commissioner or the commissioner of citywide administrative services, housing preservation and development, or other authorized agency, or any person who, acting under the authority conferred on him or her by such commissioner, in performing the work authorized by a precept issued out of any court or modified in accordance with this section, or the work ordered by the commissioner in accordance with such precept under the provisions of this section.

§28-141.8.5 Enforcement. The police commissioner shall enforce such orders or requirements when requested by the commissioner and shall likewise enforce same at the request of the commissioner of citywide administrative services, housing preservation and development, or other authorized agency, with respect to work performed by or under the direction of such commissioner pursuant to the provisions of this section.

§28-141.8.6 Demolition. If the original precept authorized demolition, the time for such demolition shall not extend beyond three years from the date of issuance from the original precept without further application to the court.

§28-141.9 Return of Precept; reimbursement of city. Upon compliance with any precept issued to him or her in a proceeding under this section, the commissioner may make return thereof, with an endorsement of the action thereunder and the costs and expenses thereby incurred, to the justice of the court from which such precept issued. Such justice shall then tax and adjust the amount endorsed upon such precept, and shall adjust and allow the disbursements of the proceeding, including but not limited to the preliminary expenses of searches, service of the notice of survey and summons on interested parties, surveys thereof, and costs of executing the precept, which shall be inserted in the judgment in such proceeding. Such justice shall then render judgment for such amount and for the sale of the premises named in such notice, together with all the right, title and interest that the person named in such notice had in the lot, ground or land upon which such structure was placed, at the time of the filing of a notice of pendency in such proceedings, or at the time of the entry of judgment therein, to satisfy such judgment in foreclosure of mortgages. Nothing in this section shall preclude the city from recovering such costs and expenses in any other lawful manner, including pursuant to section 141.11 of this code.

§28-141.10 Judgment lien. Any judgment rendered in an action or proceeding instituted under this section shall be and become a lien upon the premises named in such action or proceeding, such lien to date from the time of filing a notice of pendency in the office of the clerk of the county wherein the property affected by such action or proceeding, is located. Every such lien shall have priority before any mortgage or other lien as may exist prior to such filing except tax and assessment liens.

§28-141.11 Tax lien. Any costs and expenses incurred by any agency of the city pursuant to this section, including but not limited to the preliminary expenses of searches, service of the notice of survey and summons on interested parties, surveys thereof, and costs of executing the precept, shall be a debt recoverable from the owner of the premises and a lien upon the land and buildings upon or in respect to which such costs and expenses were incurred. Every such lien shall have priority over all other liens and encumbrances on the premises except for the lien of taxes and assessments. Except as otherwise provided by rule of the affected agency, the agency incurring such expense shall be governed by the procedures set forth in article eight of subchapter five of the housing maintenance code with respect to the enforcement of such debt and lien.

SECTION 142

MAINTENANCE OF BUILDINGS AND OWNER'S RESPONSIBILITIES

§28-142.1 *Maintenance requirements.* All buildings and all parts thereof and all other structures regulated by this code shall be maintained in a safe condition. All service equipment, means of egress, devices, and safeguards that are required in a building by the provisions of this code or other applicable laws or rules, or that were required by law when the building was erected, altered, or repaired, shall be maintained in good working condition. Whenever persons engaged in building operations have reason to believe in the course of such operations that any building or other structure is dangerous or unsafe, such person shall forthwith report his or her belief in writing to the commissioner, who shall thereupon cause an inspection to be made of such building or other structure; and if such building or other structure is found to be dangerous or unsafe, the commissioner shall cause such action to be taken as he or she may deem necessary.

§28-142.2 *Owner responsibility.* The owner shall be responsible at all times for the safe maintenance of the building and its facilities and all other structures regulated by this code.

§28-142.3 *Exterior walls and appurtenances thereof.* In order to maintain a building's exterior walls and appurtenances thereof in a safe condition, the following additional requirements shall apply to all existing buildings or buildings hereafter erected that are greater than six stories in height:

Exception: The requirements imposed by this section shall not be applied to any part of an exterior wall that is less than twelve inches (305 mm) from the exterior wall of an adjacent building.

§28-142.3.1 *Inspection requirements.* A critical examination of a building's exterior walls and appurtenances thereof shall be conducted at periodic intervals as set forth by rule of the commissioner, but such examination shall be conducted at least once every five years. The initial examination for any building hereafter constructed shall be conducted in the fifth year following the erection or installation of any exterior wall and/or appurtenances.

1. Such examination shall be conducted by, or witnessed by and under the direct supervision of, an architect or engineer on behalf of the building owner.
2. Such examination shall include a complete review of the most recently prepared report and an inspection.
3. Such examination shall be conducted in accordance with rules promulgated by the commissioner.

§28-142.3.2 *Immediate notice of unsafe condition.* Whenever an architect or engineer learns of an unsafe condition through a critical examination of a building's exterior walls and appurtenances thereof, he or she shall notify the owner and the department immediately in writing of such condition.

§28-142.3.3 *Report of critical examination.* Such architect or engineer shall submit a written report to the commissioner within sixty days of completing the critical examination, but not more than five years following submission of the preceding report of critical examination, certifying the results of such critical examination as either safe, unsafe or safe with a repair and maintenance program. The report shall clearly document the condition of the exterior walls and appurtenances thereof and shall include a record of all significant deterioration,

unsafe conditions and movement observed as well as a statement concerning the watertightness of the exterior surfaces. Such report must be signed by and bear the professional seal of such architect or engineer.

§28-142.3.4 Repair of exterior walls, unsafe condition. Upon the notification to the department of an unsafe condition, the owner, his or her agent or the person in charge shall immediately commence such repairs, reinforcements or other measures as may be required to secure public safety and to make the building's exterior walls or appurtenances thereof conform to the provisions of this code.

- 1. All unsafe conditions shall be corrected within thirty days of filing the critical examination report.*
- 2. The architect or engineer shall reinspect the premises and file an amended report within two weeks after the repairs have been completed certifying that the unsafe conditions of the building have been corrected.*
- 3. The commissioner may grant an extension of time of up to ninety days to complete the repairs required to correct an unsafe condition upon receipt and review of an initial extension application submitted by the architect or engineer together with such additional documentation as may be prescribed by rule.*
- 4. The commissioner may grant further extensions of time to complete the repairs required to remove an unsafe condition upon receipt and review of an application for a further extension submitted by the architect or engineer together with such further documentation as may be prescribed by rule.*

§28-142.3.5 Safe condition with a repair and maintenance program. An architect or engineer shall not file a report of a safe condition with a repair and maintenance program for the same building for two consecutive filing periods unless the second such report is accompanied by his or her certification attesting to the correction of all conditions identified in the prior report as requiring repair.

§28-142.4 Periodic boiler inspections. Periodic boiler inspections shall be required to be performed in accordance with the following schedule:

- 1. Except as provided below, all boilers as defined in section 204 of the New York state labor law, excepting those boilers listed in subdivision five of such section of such labor law, shall be inspected at least once a year by a qualified boiler inspector in the employ of a duly authorized insurance company or other qualified inspectors as defined by the New York state department of labor, and as set forth herein and in the rules promulgated by the commissioner of labor. Such inspections shall also include the chimney connectors. All boiler inspectors who perform periodic inspections pursuant to this section shall be qualified under section 204 of the New York state labor law and the rules promulgated by the commissioner of labor or the commissioner of the department.*
- 2. When the construction of the boiler allows, an internal inspection shall also be performed.*
- 3. Each owner of a high-pressure boiler, as defined in this code, may choose to have the annual boiler inspection conducted by the department or by a qualified boiler inspector in the employ of a duly authorized insurance company.*

§28-142.4.1 Owner's annual statement. The owner of each boiler that is subject to periodic inspection shall file an annual written statement with the commissioner, specifying:

1. *The location of each boiler.*
2. *Whether the owner, agent, or lessee has had the boiler inspected by a qualified boiler inspector in the employ of a duly authorized insurance company or other qualified inspector in accordance with the requirements of this section, setting forth the name and address of the insurance company or other qualified inspector, the date of inspection, and the policy number covering the boiler.*
3. *A signed copy of the report of each boiler inspection, on such forms and in such manner as required by the commissioner.*
4. *The statement shall be filed within thirty days after installation of a boiler. Thereafter, it shall be filed as set forth in this section and in rules.*

§28-142.4.2 Removal or discontinuance notice. The owner of a boiler that is removed or discontinued from use shall file a written notice of such removal or discontinuance with the commissioner within thirty days of the date of removal or discontinuance.

§28-142.4.3 Additional inspections. In addition to the inspections required by this section, the commissioner may make such additional inspections as required to enforce the provisions of this code. No fee shall be charged for such additional inspections.

§28-142.4.4 Fees. Every owner of a boiler in use and inspected by a qualified boiler inspector in the employ of a duly authorized insurance company shall pay to the department an annual fee for each boiler in the amount prescribed by this code to cover the city's administrative and supervisory costs. The fee shall be payable at the time of the filing of the owner's annual statement.

§28-142.5 Periodic inspection and test of elevators and conveying systems. Every new and existing device regulated by this code shall be inspected and tested according to the requirements of this code.

Exception: Elevators located (i) in owner-occupied one-family, two-family or multiple-family dwellings, provided that the elevator services only the owner-occupied dwelling unit and that such dwelling unit is not occupied by boarders, roomers or lodgers, or (ii) within convents or rectories that are not open to non-occupants on a regular basis, are not subject to the provisions of this subsection.

§28-142.5.1 Periodic inspection and test schedule. Every new and existing device shall be inspected and tested according to the following schedule:

§28-142.5.1.1 Elevators, escalators, moving walks and dumbwaiters. Elevators, escalators, moving walks and dumbwaiters shall be inspected at intervals not exceeding six months, with one inspection annually combined with testing, or as otherwise provided by the commissioner.

§28-142.5.1.2 Chair lifts and stairway chair lifts. Chair lifts and stairway chair lifts shall be inspected and tested at intervals not exceeding one year.

Exceptions:

1. *Car safeties and counterweight safeties, where provided, shall be inspected and tested at intervals not exceeding one year.*
2. *Oil buffers and governors shall be periodically inspected and shall be tested at intervals not exceeding one year.*
3. *Hydraulic elevator pressure tanks and the piston rods of roped hydraulic elevators shall be inspected and tested at intervals not exceeding three years.*

§28-142.5.1.3 Amusement devices. Shall be inspected and tested at

intervals not exceeding six months except that for seasonal amusement devices, the commissioner may extend the periodic inspection and test for an additional two months.

§28-142.5.1.4 Personnel hoists. Shall be inspected and tested after installation and at intervals not exceeding ninety days thereafter, and immediately following each increase in travel height. The department shall be notified at least 72 hours before the required inspection and test.

§28-142.5.1.5 All other devices. All other devices including but not limited to industrial lifts and loading ramps, mechanical parking garage equipment, console or stage lifts, power-operated scaffolds and special hoisting and conveying equipment, at such intervals as the commissioner may require.

§28-142.5.1.6 Building inspection and test cycle. Each building containing devices regulated by this code shall have an inspection and test cycle approved by the department. A request to change the cycle shall be submitted in writing to the department and is subject to department approval.

§28-142.5.2 Inspection and testing process. All devices shall be tested in accordance with the following procedures:

§28-142.5.2.1 Inspection and testing entities. The required periodic inspections shall be made by the department except that one inspection and test each year for elevators and escalators shall be made on behalf of the owner by an insurance company or other private elevator inspection agency certified by the department in accordance with this code and in rules promulgated by the commissioner. Required inspections and tests performed on behalf of the owner shall be witnessed by an elevator inspector from the department.

§28-142.5.2.2 Inspection and test reports submission. Inspection and test reports shall be submitted on such forms and in such manner as required by the commissioner. Copies of each report, each copy originally signed by the inspector, listing all violations of any of the provisions of this code for each device inspected and/or tested, shall be delivered to the owner and filed with the department within five days of the inspection or test.

§28-142.5.2.3 Repair. All defects as found and reported in such inspection and test reports shall be corrected within two weeks of the filing of the report.

§28-142.5.3 Maintenance contracts. In multiple dwellings (either J-1 or J-2 occupancy groups), the owner shall be required to have a contract with an elevator repair person or company authorizing the performance of emergency elevator repair work. Such repair person or company shall be acceptable to the commissioner. The name, address and telephone number of such elevator repair person or company shall be maintained on each premises, in a location readily accessible to employees of this department, and maintenance or custodial staff at the premises.

§28-142.5.4 Fees. Every owner of elevators and other devices shall pay to the department an inspection fee and a report filing fee for each elevator or device in the amount prescribed by section 28-126 of this chapter.

§28-142.5.5 Additional inspections. The commissioner may make such additional inspections as required to enforce the provisions of this code. No fee shall be charged for such additional inspections.

§28-142.6 Existing retaining walls, partition fences and other site structures. Unless otherwise provided by special agreement between owners of adjacent properties, the responsibility for maintaining and repairing existing retaining walls, partition fences and other site structures shall be as follows:

§28-142.6.1 Located on the lot line, partially on both properties. The owners of such adjacent properties shall be responsible jointly for the proper maintenance and repair of retaining walls, partition fences and other site structures, or portions thereof, that are located along the common lot line and on both their properties; and each such owner shall be responsible for one-half of the costs of maintaining and repairing such fences, retaining walls and other site structures, or such portions thereof. Where an owner elects to remove temporarily a retaining wall or partition fence that is required to support a grade differential between the two properties, or for any other reason is required by this code, such owner shall protect the adjacent property and replace the retaining wall or partition fence at his or her own cost.

§28-142.6.2 Located wholly on one property. Where such retaining walls, partition fences or other site structures, or portions thereof, are located entirely on one property, the owner of such property shall be wholly responsible for the proper maintenance and repair of the retaining wall, partition fence or other site structure. If, however, the proper maintenance and/or repair of such retaining wall, partition fence or other site structures requires access to the adjoining property, the owner of such adjoining property shall allow such access.

§28-142.7 New retaining walls. Where an owner elects to set his or her grade either higher or lower than the grade of an adjoining property at the property line, such owner shall erect, maintain and repair a retaining wall of sufficient height, structure and foundation to support such grade differential, and with proper drainage, in accordance with this code, such that the adjacent property is not impacted, and shall do so at the sole expense of such owner and entirely on the property of such owner without access to the adjoining property unless otherwise provided by special agreement between such owner and the owner of the adjoining property.

§28-142.8 Party walls. Repair and maintenance of the construction, design and fire-resistance rating of party walls shall be the joint responsibility of the owners of the adjoining properties, and any change by either owner must maintain the weather protection, structural, vertical fire division and other requirements of this code for party walls.

CHAPTER 2

LICENSING AND REGISTRATION OF BUSINESSES, TRADES AND OCCUPATIONS ENGAGED IN BUILDING WORK

SECTION 201

GENERAL

§28-201.1 Application. This chapter shall apply to the licensing and registration of businesses, trades and occupations engaged in building work regulated by this code.

§28-201.2 General requirements for all licenses. The provisions of this section shall apply to all licenses issued by the department pursuant to this chapter. All applicants and licensees shall comply with the provisions of this section as well as the specific requirements applicable to the particular license as set forth in other sections of this chapter.

§28-201.3 Definitions. As used in this chapter the following terms shall have the following meanings unless the context or subject matter requires otherwise.

CERTIFICATE OF COMPETENCE. *A certificate issued by the department to an individual representing that such individual has completed all requirements for the master plumber or master fire suppression piping contractor license but has not obtained*

a seal or plate; and that such certificate of competence has been renewed as required and is currently in effect. The certificate of competence shall bear the name of the holder and the certificate number. The holder of a certificate of competence is not a licensed master plumber or licensed master fire suppression piping contractor and may practice the trade for which the certificate is issued only under the direct and continuing supervision of a licensed master plumber or licensed master fire suppression piping contractor or, with respect to a city employee under the direct and continuing supervision of a supervising licensed master plumber or licensed master fire suppression piping contractor.

CITY AGENCY. A city, county, borough, or other office, position, administration, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid, in whole or in part, from the city treasury.

COMBINED STANDPIPE SYSTEM. A standpipe to which a sprinkler system is connected or is being connected.

DIRECT AND CONTINUING SUPERVISION. Responsible control exercised by a licensed individual, either personally or through one or more, but no more than three, levels of competent supervision over individuals (i) in the direct employ of the licensee, or (ii) in the direct employ of the city agency employing the licensee or (iii) in the direct employ of the business performing the actual work of the licensee's trade or the actual work permitted by the class of license held by the licensee, for which work such licensee assumes full responsibility. Such control shall be evidenced by such licensee's signature, and seal where applicable, upon any required statements, applications and/or permits and by demonstrating involvement of the licensee in the operations of the business, including hiring of employees, responsibility for financial matters, and oversight of work performance. Direct and continuing supervision includes field inspection, supervision of job sites, and the maintenance of records of such supervision and such other requirements as the commissioner may prescribe by rule for a particular license type.

DIRECT EMPLOY. An individual is in the direct employ of a licensee or business or a city agency when he or she is on the payroll of such licensee or business or city agency and under the usual common law rules applicable in determining the employer-employee relationship has the status of an employee. The work performed by such employee shall not exceed the class of license held by the licensee. Direct employment shall be evidenced by payroll records, such as social security payments, income tax withholding or the disbursement of other funds as required by law for the benefit of such employee, timekeeping records, such as time cards and sign-in sheets, work orders, and assignment or route logs.

FIRE SUPPRESSION PIPING WORK. The installation, maintenance, repair, modification, extension, or alteration or testing of a fire suppression piping system in any building in the city of New York.

FIRE SUPPRESSION PIPING SYSTEM. Any system including any and all equipment and materials in connection therewith, with the exception of any electrical components that must be installed by a licensed electrician pursuant to the New York city electrical code, the purpose of which is to control, contain, suppress or extinguish fire and shall include:

- 1. The systems, materials and equipment described or referred to in this code (with the exception of any electrical components that must be installed by a licensed electrician pursuant to the New York city electrical code) which systems, materials or equipment shall include any standpipe system to which a sprinkler*

system is or is now being connected; provided, however, that such systems, materials or equipment shall not include any systems, materials or equipment constituting plumbing work, with the exception of up to thirty sprinkler heads off the domestic water in any one building; or

2. Any dry, liquid or gaseous chemical fire containment, suppression, control or extinguishing system or any other device or means of control, suppression, containment or extinguishing of fire (with the exception of any electrical components that must be installed by a licensed electrician pursuant to the New York city electrical code) but not including portable fire extinguishers.

HIGH-PRESSURE BOILER. A boiler that carries a pressure of more than fifteen pounds of steam per square inch and is rated in excess of ten horsepower, or that produces hot water at a pressure of one hundred sixty pounds per square inch or at a temperature over 250°F (121°C).

LICENSE. A license, registration, certification or other evidence, issued by the department pursuant to this chapter, representing that an individual, a sole proprietorship, partnership, corporation, business association or other person meets the qualifications and requirements as set out in this chapter and in the rules of the department and is authorized to engage in the particular trade, occupation or business as indicated on the license and representing that such license, with associated plate and/or seal, where applicable, has been renewed as required and is currently in effect. The license shall bear the holder's full name, the type of license, the license class, where applicable, the license number and any restrictions relating to the use of such license. Such term shall not include a certificate of competence.

LICENSE BOARD OR BOARD. A panel of trade practitioners and others appointed by the commissioner as provided herein and in rules promulgated by the commissioner with the purpose of advising the commissioner regarding the character and fitness of applicants for a license or certificate of competence, allegations of illegal practices by persons licensed, or other matters as the commissioner may see fit.

LICENSED MASTER FIRE SUPPRESSION PIPING CONTRACTOR, MASTER FIRE SUPPRESSION PIPING CONTRACTOR. An individual who has satisfied the requirements of this chapter for the master fire suppression piping contractor license, who has been issued a license, plate and/or seal, and who is authorized under the provisions of this chapter to perform fire suppression piping work in the city of New York, according to the classification of license held. A master fire suppression piping contractor licensee shall practice his or her trade in association with a master fire suppression piping contractor business or as an employee of a city agency.

LICENSED MASTER PLUMBER, MASTER PLUMBER. An individual who has satisfied the requirements of this chapter for the master plumber license, who has been issued a license, plate and/or seal, and who is authorized under the provisions of this chapter to perform plumbing work in the city of New York. A master plumber licensee shall practice his or her trade in association with a master plumber business or as an employee of a city agency.

PLATE. A plaque issued by the department to a master plumber or a master fire suppression piping contractor setting forth the licensee's name and number, the class of license and the master plumber business or master fire suppression piping contractor business operating pursuant to the plate, and displayed prominently and conspicuously on view to the public at the place of business registered with the department. The plate is the property of the department and is not transferable by the licensee.

PLUMBING WORK. The installation, maintenance, repair, modification, extension

or alteration of plumbing, standpipe where a sprinkler is not connected or is not now being connected, domestic water, connections to the domestic water, combination domestic water and reserve standpipe supply tank up to and including the roof tank check valve, gas piping or any piping system referred to in the New York city plumbing code, and/or up to thirty sprinkler heads off the domestic water in any building in the city of New York.

PRIVATE ELEVATOR INSPECTION AGENCY. A person or business authorized by the commissioner to operate as an independent contractor for the purpose of inspecting and testing elevators, escalators and other equipment regulated by this code and shall include but shall not be limited to an insurance company, elevator maintenance company, elevator manufacturer or elevator inspection company.

SEAL. Emblem issued by the department to an applicant for some license types, that allows the licensee to stamp documents required by this code to be signed and sealed. The seal shall bear the full name of the licensee, the license type, the license class, where applicable, and the license number. The seal is the property of the department and is not transferable by the licensee.

SIGN. A sign as defined in section 12-10 of the zoning resolution.

SINGLE CONTROL STATION. A crane that is driven and operated from one seat in its cab.

TOTAL BOOM. A boom including jibs and other extensions.

§28-201.4 *Requirement of license.* It shall be unlawful for any person to engage in or carry on in the city any business, trade or occupation regulated by this chapter, without having first obtained a license from the commissioner in accordance with and subject to the provisions of this chapter and the rules of the department. A license issued by the department for any such business, trade or occupation prior to the effective date of this code, shall remain in full force and effect until the expiration or termination thereof in accordance with the terms thereof, unless sooner revoked or suspended for cause as hereinafter provided. Any renewal of such license shall be in accordance with the provisions of this code.

§28-201.5 *Application and conditions.* Every application for a license or certificate of competence shall be made in such form and shall be accompanied by such information as the commissioner may prescribe, and by the required fee. It is a condition of the license or certificate of competence that information in the application be kept correct and current. Any change in required information shall be reported to the department within fourteen days after any change prior to issuance of the license or certificate of competence or within thirty days after any change following issuance.

§28-201.6 *Qualifications of applicant.* All applicants for a license or certificate of competence shall be at least eighteen years of age, shall be able to read and write the English language, shall be of good moral character, and shall meet additional qualifications that may be prescribed for the particular license or certificate of competence.

§28-201.7 *Examination of applicant.* Except as otherwise specified for the particular license type, applicants for a license shall be required to take an examination in accordance with the rules of the department.

§28-201.8 *Investigation of applicant.* Every applicant for a license or certificate of competence, shall submit to investigation by a governmental entity in order to determine the applicant's character and fitness. Failure to provide all requested and completed documents in a timely fashion will constitute an incomplete application and will result in a denial of the license or certificate of competence.

§28-201.9 Insurance. Except as noted otherwise for a particular license, or exempted by the commissioner pursuant to rule, prior to the issuance of a license, or during the renewal thereof, the applicant shall file with the department (i) satisfactory evidence of a general liability insurance policy in the amount of one million dollars, listing the New York city department of buildings as the certificate holder; and (ii) satisfactory evidence of an insurance policy for property damage in an amount set forth in rules and conditioned upon the observance of all applicable laws and rules governing the licensed activities and upon the payment of any applicable judgment awarded for damage to or destruction of property occurring in the performance of any regulated work by or under the supervision of the license holder. Each policy of insurance shall contain a provision for continuing liability notwithstanding any recovery under such policy. In addition, prior to the issuance of any license or seal and plate, if applicable, or during any renewal thereof, the applicant shall file with the department satisfactory evidence of compliance with the workers' compensation law and the disability benefits law.

§28-201.10 Issuance of license, plate and/or seal, where applicable, or certificate of competence. The commissioner shall issue a license or certificate of competence to each applicant who shall have submitted satisfactory evidence of his or her qualifications, and shall have satisfactorily passed all required examinations and investigations, provided that no license or certificate of competence shall be issued unless and until the applicant shall have paid the required fee and complied with such other and further requirements for the particular license or certificate of competence as may be set forth in this chapter and in rules promulgated by the department. All licenses or certificates of competence issued by the commissioner shall have his or her signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature. For licenses that require a plate and/or the application of a seal, the plate and/or seal shall be issued with the license except as provided otherwise in this chapter. The license, plate and seal are the property of the department and are not transferable by the licensee. No licensee shall make or cause to be made duplicates of a department-issued license, plate or seal. The loss or theft of a license, plate or seal must be reported to the department within five calendar days.

§28-201.11 Term of license or certificate of competence. All licenses and certificates of competence issued by the commissioner for which an examination is required under the provisions of this section shall expire three years from the date of issuance thereof, and may be renewed every three years thereafter without examination. All licenses not requiring examination shall expire one year from the date of issuance thereof, and may be renewed each year thereafter except as otherwise noted for a specific license.

§28-201.12 Renewal of license or certificate of competence. Applications for renewal of a license or certificate of competence shall be accompanied by the renewal fee and such additional information as the commissioner may require, and shall be made at least thirty calendar days but not more than sixty calendar days prior to the expiration date of same. The failure of an individual to renew his or her license or certificate of competence shall have the effect of cancellation of the license or certificate of competence upon expiration, and the holder of a plate and/or seal issued by the department shall immediately surrender such plate and/or seal to the department.

§28-201.13 Reinstatement. If a license or certificate of competence is cancelled, the individual may apply for reinstatement of the license or certificate of competence, within one year of the date of its expiration without examination but subject to applicable late

and reinstatement fees. Thereafter, and up to five years after the date of expiration, the commissioner may reinstate the license or certificate of competence without examination upon the applicant's demonstration to the commissioner's satisfaction of continued competence in the respective trade. A license or certificate of competence shall not be reinstated after five years from date of expiration except that a registration shall not be reinstated after one year from date of expiration.

§28-201.14 Continuing education. The commissioner may promulgate rules to require applicants for the renewal of licenses or certificates of competence to complete a prescribed number of hours of continuing education courses approved by the department within the term preceding the application for renewal and to provide proof of same in a form acceptable to the department. Such proof, when required, shall be submitted with the application for renewal.

§28-201.15 Schedule of license and certificate of competence fees.

License Type	Initial Fee	Renewal Fee	Additional Fees
Master rigger license.	\$200.	\$150 triennially.	Late-renewal fee: \$50. Reissuance fee: \$50.
Special rigger license.	\$100.	\$75 triennially.	Late-renewal fee \$50. Reissuance fee: \$50.
Basic hoisting machine operator license (Class A).	\$150.	\$150 triennially.	Late-renewal fee \$50. Reissuance fee: \$50.
Basic hoisting machine operator license with endorsement to operate hoisting machinery without limitation or restriction (Class B).	\$200.	\$150 triennially.	Late-renewal fee \$50. Reissuance fee: \$50.
Special hoisting machine operator license (Class C).	\$100.	\$75 triennially.	Late-renewal fee \$50. Reissuance fee: \$50.
Concrete testing laboratory license.	\$100.	\$75 annually.	Late-renewal fee: \$50. Reissuance fee: \$50.
Welder license.	\$50.	\$45 triennially.	Late-renewal fee: \$50. Reissuance fee: \$50.
Private elevator inspector certification.	\$50	\$75 triennially.	Late-renewal fee \$50. Reissuance fee: \$50.
Private elevator inspection agency certification.	\$100	\$150 triennially.	Late-renewal fee: \$100. Reissuance fee: \$50.
Master plumber license (certificate of competence).	\$200.	\$150 triennially.	Late-renewal fees: Up to 30 days late, \$50; From 31 days to five years late, \$100 for each year or part thereof. Reissuance fee: \$50.
Master plumber license plate.	\$75.	\$100 triennially.	Replacement fee upon loss of plate, w/affidavit: \$100.
Master plumber license seal.	\$50.	\$75 triennially.	Replacement fee upon loss of seal, w/affidavit: \$75.
Journeyman plumber registration.	\$50		No renewal, no reissuance.
Master fire suppression piping contractor (class A, B or C) license (certificate of competence).	\$200.	\$150 triennially.	Late-renewal fees: Up to 30 days late, \$50; From 31 days to five years late, \$100 for each year or part thereof. Reissuance fee: \$50.
Master fire suppression piping contractor (class A, B or C) license plate.	\$75.	\$100 triennially.	Replacement fee upon loss of plate, w/affidavit: \$100.

<i>Master fire suppression piping contractor (class A, B or C) license seal.</i>	\$50.	\$75 triennially.	<i>Replacement fee upon loss of seal, w/affidavit: \$75.</i>
<i>Journeyman fire suppression piping contractor registration.</i>	\$50		<i>No renewal, no reissuance.</i>
<i>Oil-burning equipment installer license (class A or B).</i>	\$100.	\$75 triennially.	<i>Late-renewal fee \$50. Reissuance fee: \$50.</i>
<i>High-pressure boiler operating engineer license.</i>	\$50.	\$45 triennially.	<i>Late-renewal fee \$50. Reissuance fee: \$50.</i>
<i>Portable high-pressure boiler operating engineer license.</i>	\$50.	\$45 triennially.	<i>Renewal fee includes renewal fee for a hoisting machine operator license. Late-renewal fee \$50. Reissuance fee: \$50.</i>
<i>Master sign hanger license.</i>	\$100	\$75 triennially.	<i>Late-renewal fee \$50. Reissuance fee: \$50.</i>
<i>Special sign hanger license.</i>	\$100	\$75 triennially.	<i>Late-renewal fee \$50. Reissuance fee: \$50.</i>
<i>Outdoor advertising company registration.</i>	<i>As provided by dept rules</i>	<i>As provided by dept rules.</i>	<i>As provided by dept rules.</i>
<i>Filing representative registration.</i>	\$50	\$25 annually.	<i>Late-renewal fee \$50. Reissuance fee: \$50.</i>
<i>Reinstatement of expired license, certificate of competence or certification without examination, if approved by commissioner, in addition to applicable renewal fees.</i>	<i>Same as initial license</i>		<i>\$100 for each year or part thereof from date of expiration.</i>

§28-201.16 Restrictions on use of license. No holder of a license issued under this chapter shall authorize, consent to or permit the use of his or her license by or on behalf of any other person, and no person who has not qualified and obtained or renewed a license under this chapter shall hold himself or herself out to the public as licensed, certified, registered or as the holder of a license issued under this section, either directly or indirectly, by means of signs, sign cards, plates, stationery, or in any other manner whatsoever.

§28-201.17 Use on behalf of a business. Except for such additional requirements as may be set forth for a particular license, nothing in this chapter shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that:

- 1. At least one member of the partnership or at least one officer of the corporation is licensed for the same business, trade or occupation, and that all work performed by such partnership or corporation is performed by or under the direct and continuing supervision of such license holder or holders; or*
- 2. Such partnership, corporation or other business association is itself authorized to engage in such business as prescribed herein.*

§28-201.17.1 Use on behalf of a city agency. Nothing in this chapter shall be construed to prohibit the holder of a license who is an employee of a city agency from using such license to practice the trade for which such license is issued for or on behalf of such city agency in the course of such employment except as otherwise limited pursuant to sections 209 and 211 of this chapter for licensed master plumber

and licensed master fire suppression piping contractor licensees.

§28-201.18 New York city location required. Except as otherwise noted for a particular license, the holder of a license, other than an employee of a city agency, shall have or be employed by a business entity that has an established place of business with an address within the city of New York at which such person can be contacted by the public and the department by mail, telephone or other modes of communication. A post office box is not an acceptable address.

§28-201.19 Suspension or revocation of license or certificate of competence. The commissioner shall have the power to suspend or revoke a license or certificate of competence and/or to impose a fine not to exceed twenty-five thousand dollars for each finding of violation, and/or to order any holder thereof to repair damage resulting from any act or omission as set forth in this chapter or in rules, for any of the following, provided that the commissioner shall not revoke or suspend any license or certificate of competence for any cause unless and until the holder shall have been given at least five calendar days prior written notice and an opportunity to be heard:

- 1. Fraud or deceit in obtaining a license, plate and/or seal, certificate of competence, certification, registration, or permit; or*
- 2. Gross negligence, incompetence or misconduct relating to the holder's business; or*
- 3. Fraudulent dealings; or*
- 4. Failure to comply with the code or any order, rule, regulation or requirement lawfully made by the commissioner including failure to cooperate with investigations conducted by the commissioner; or*
- 5. Failure to comply with any order, rule, regulation or requirement lawfully made by the commissioner of environmental protection or commissioner of transportation pertaining to water services, house connections or street openings which relate to requirements of this section; or*
- 6. A practice or pattern of failing timely to perform or complete contracts relating to home improvements as defined by section 20-386 of the administrative code or a practice of abandoning contracts on residential buildings containing four dwelling units or less; or*
- 7. Failure to provide documents, including payroll records, workers compensation or other insurance documents, employee timekeeping records and corporate tax returns, required by the commissioner; or*
- 8. Poor moral character that adversely reflects on his or her fitness to conduct work regulated by this code.*

However, notwithstanding the foregoing, when the public safety may be imminently jeopardized the commissioner shall have the power, pending a hearing and determination of charges, to forthwith suspend any license for a period not exceeding five working days.

§28-201.19.1 Surrender of plate and/or seal. Upon surrender, suspension or revocation of a license for which the department has also issued a plate and/or seal, the license and such plate and/or seal shall be immediately surrendered to the department.

§28-201.19.2 Reinstatement fees. The fees required for the reinstatement of a certificate of competence or license, plate and/or seal after suspension shall be the same as those required to obtain an original document. If reinstatement of the certificate of competence, license, plate and/or seal is not requested within thirty days of the lifting of the suspension, then late fees shall be imposed in accordance

with section 28-126 of chapter 1 of this title.

§28-201.20 *Cooperation required.* Any person, including any corporation, partnership, business or other entity, issued a license or certificate of competence by the department shall, pursuant to a request or order of the commissioner or any other city agency or office, cooperate fully and completely with respect to any department or city agency or office investigation. Evidence of cooperation shall include, but is not limited to, appearing before the department or other city agency or office, answering questions completely and accurately, and providing any and all requested documents. Failure to comply with such request or order may subject such person to disciplinary measures authorized by law, including but not limited to suspension or revocation of the license or certificate of competence.

§28-201.20.1 *Service of request or order.* Such request or order by the commissioner or other city agency or office shall be mailed by regular mail to the person named therein to his or her last known business or home address at least ten days before such appearance and shall contain the name of the person, date, time and place of such appearance and, if known or applicable, a description of any requested documents. If the appearance or information is required immediately, the request or order may be transmitted via facsimile or delivered to the person's last known business or home address prior to the date and time specified therein.

SECTION 203 RIGGER LICENSE

§28-203.1 *Rigger license required.* It shall be unlawful to hoist or lower any article on the outside of any building in the city unless such work is performed by or under the direct and continuing supervision of a person licensed as a rigger under the provisions of this section. The provisions of this section shall apply to the erection or dismantling of a tower crane or a climber crane on a building and to the use of a derrick in their removal, except that such erection or dismantling may be performed by or under the direct and continuing supervision of a licensed climber or tower crane rigger in accordance with rules promulgated by the department.

Exception: The provisions of this section shall not apply to the hoisting or lowering of signs if the person so doing possesses a license as a sign hanger, as provided in this section, or to the hoisting or lowering of any building materials or equipment, other than boilers and tanks, in the course of the construction or alteration of any building or structure.

§28-203.2 *Classification.* Such licenses shall be classified as follows:

1. *Master rigger license.* Authorizes the holder thereof to hoist or lower any article, irrespective of weight, on the outside of any building.
2. *Special rigger license.* Authorizes the holder thereof to hoist or lower any article not exceeding one thousand two hundred pounds in weight on the outside of any building.
3. *Climber or tower crane rigger license.* Authorizes the holder thereof to erect or dismantle a tower crane or a climber crane on a building and to use a derrick in their removal.

§28-203.3 *Additional qualifications.* Applicants for a rigger license shall have the following additional qualifications: §28-203.3.1 *Master rigger qualifications.* All applicants for a master rigger license shall submit satisfactory proof establishing that the applicant:

1. *Has had at least five years of practical experience in the hoisting and rigging*

business within the seven years prior to application; and

2. *Has knowledge of and is able to explain the risks incident to such business and precautions to be taken in connection therewith, safe loads and computation thereof, types of rigging, size and strength of ropes, cables, blocks, poles, derricks, sheerlegs and other tools used in connection with such business.*

§28-203.3.2 Special rigger qualifications. All applicants for a special rigger license shall submit satisfactory proof establishing that the applicant:

1. *Has had at least one year of practical experience in the hoisting and rigging business within the three years prior to application; and*

2. *Has knowledge of and is able to explain the risks incident to such business and precautions to be taken in connection therewith.*

§28-203.3.3 Climber or tower crane rigger qualifications. All applicants for a climber or tower crane rigger license shall submit satisfactory proof establishing that the applicant:

1. *Has had at least five years of practical experience in the climber or tower crane rigging business within the seven years prior to application; and*

2. *Has knowledge of and is able to explain the risks incident to such business and precautions to be taken in connection therewith, including connecting pins, cables, anchorage, platform or pad, plumb of mast, torque of bolts, supervision of rigging and hoisting of loads, placement of components, and coordination of sequencing.*

§28-203.4 Additional requirements. The following additional requirements shall apply to riggers:

§28-203.4.1 Danger warning. Every licensed master or special rigger shall, while rigging operations are in progress at a job site, place, conspicuously, at such job site two plates or signs not less than 18 inches (457 mm) by 24 inches (610 mm) in size (i) displaying the word "danger" in letters not less than 6 inches (152 mm) high, and (ii) disclosing the rigger's name, business address, type of rigger license and license number.

§28-203.4.2 Master rigger place of business. Every licensed master rigger shall have a place of business within the city and shall display prominently at such place of business a plate or sign marked with the words "master rigger" and his or her license number immediately thereunder.

§28-203.4.3. Fitness to perform work. As a condition of license renewal, a licensed master or special rigger shall provide evidence satisfactory to the department that he or she is fit to perform the work.

SECTION 204

HOISTING MACHINE OPERATOR LICENSE

§28-204.1 Hoisting machine operator license required. It shall be unlawful for any persons to take charge of or operate any power-operated hoisting machine used for hoisting purposes or cableways under the jurisdiction of the department, except power-operated scaffolds and window-washing machines, unless such person is licensed under the provisions of this section or is a holder of a certificate of qualification as a hoisting machine operator issued prior to December 6, 1968 and not allowed to lapse. The commissioner may, by rule, exempt operators of mobile cranes of limited size and capacity from the requirements of this section.

§28-204.2 Classification. Hoisting machine operator licenses shall be classified as follows:

1. *Class A license: Basic license to operate cranes with total boom less than 200 feet (60,960 mm) in length, derricks and cableways, excluding truck-mounted tower cranes that exceed 200 feet (60,960 mm) in height.*
2. *Class B license: Endorsement on basic license to include the operation of hoisting machinery without limitation or restriction.*
3. *Class C license: Special hoisting machine operator license to operate a specified class of hoisting machine of limited size and capacity as follows:*
Class C1: License to operate wheel mounted cranes (single control station) with telescoping, hydraulic or folding booms, including jibs and any other extensions to the boom, not exceeding 200 feet in length (60,960 mm) with a manufacturer's rated capacity of 50 tons or less;
Class C2: License to operate boom trucks with telescoping, hydraulic or folding booms, including jibs and any other extensions to the boom, not exceeding 200 feet (60,960 mm) in length with a manufacturer's rated capacity of 50 tons or less;
Class C3: License to operate boom trucks with telescoping, hydraulic or folding booms, including jibs and any other extensions to the boom, not exceeding 135 feet (41,148 mm) in length with a manufacturer's rated capacity of three tons or less, used exclusively for the erection, maintenance or removal of signs.

§28-204.3 Additional qualifications. Applicants for a hoisting machine operator license shall have the following additional qualifications.

§28-204.3.1 Class A license. All applicants for a class A basic hoisting machine operator license shall have had at least three years experience within the five years prior to application under the direct and continuing supervision of a licensed hoisting machine operator.

§28-204.3.2 Class B license. All applicants for a class B hoisting machine operator license shall hold a class A basic hoisting machine operator license, and shall have had at least two years experience prior to application under the direct and continuing supervision of a Class B licensed hoisting machine operator operating the equipment for which they are applying for endorsement and shall satisfactorily demonstrate by operation that they are competent to operate a crane with a boom, including jibs and other extensions, exceeding 200 feet (60,960 mm) in length or truck-mounted tower crane exceeding 200 feet (60,960 mm) in height, or as otherwise provided in rules of the department.

§28-204.3.3 Class C license. All applicants for a class C special hoisting machine operator license shall have had at least two years experience within the three years prior to application under the direct and continuing supervision of a licensed hoisting machine operator and have satisfactorily passed a practical examination in the operation of equipment for which such license is to be issued.

§28-204.4 Fitness to perform work. As a condition of license renewal, a licensed hoisting machine operator shall provide evidence satisfactory to the department that he or she is fit to perform the work.

§28-204.5 Insurance exemption: Unless otherwise required by rule, licensed hoisting machine operators are exempt from the insurance requirements of section 28-201.9.

SECTION 205 CONCRETE TESTING LABORATORY LICENSE

§28-205.1 Concrete testing laboratory license required. Testing of concrete

required by this code or other applicable laws or rules shall be conducted by a concrete testing laboratory licensed in accordance with this section.

§28-205.2 *Qualifications.* All applicants for a concrete testing laboratory license shall maintain a laboratory within fifty miles of the city and shall submit satisfactory proof establishing that the business is conducted by qualified personnel in accordance with procedures, safety requirements and professional standards as set forth in rules of the department. The department shall inspect an applicant's place of business and equipment and conduct an investigation of applicant's personnel in a manner to be set forth in department rules prior to the issuance or renewal of a license.

§28-205.3 *Additional requirements.* The following additional requirements shall apply to concrete testing laboratories:

§28-205.3.1 *Director.* Each laboratory shall have in responsible charge a director who shall be an architect or engineer and who shall personally supervise all technical functions of the laboratory relating to testing of concrete and concrete materials as required in this code and in rules of the department.

§28-205.3.2 *Certification of reports by director.* The director shall certify the truth and accuracy of all reports filed by the laboratory under the provisions of this code or other applicable laws and rules.

§28-205.4 *No examination required.* An examination shall not be required for a concrete testing laboratory license.

SECTION 206 WELDER LICENSE

§28-206.1 *Welder license required.* It shall be unlawful to perform manual welding work on any structural member of any building in the city unless such work is performed by a person licensed as a welder under the provisions of this section.

§28-206.2 *Qualifications.* All applicants for a welder license shall submit satisfactory proof of the applicant's fitness to make structural welds, including his or her ability to pass operator qualification tests as determined by the commissioner.

§28-206.3 *Fitness to perform work.* As a condition of license renewal, a licensed welder shall provide evidence satisfactory to the department that he or she is fit to perform the work.

§28-206.4 *Insurance exemption.* Unless otherwise required by rule, licensed welders are exempt from the insurance requirements of section 28-201.9.

SECTION 207 PRIVATE ELEVATOR INSPECTOR CERTIFICATION

§28-207.1 *Private elevator inspector certification required.* It shall be unlawful for any individual to inspect or test elevators in order to satisfy requirements set forth in this code without having obtained certification from the department as a private elevator inspector. Such inspector shall be employed and supervised by a certified private elevator inspection agency.

§28-207.2 *Qualifications.* Applicants for private elevator inspector certification shall:

1. Submit satisfactory proof that the applicant has had a minimum of five years of satisfactory experience within the seven years preceding the date of application in the assembly, installation, repair, design, or inspection of elevators, or as an elevator mechanic; and
2. Demonstrate to the commissioner's satisfaction that the applicant is sufficiently

familiar with the construction and maintenance of elevators, escalators and related equipment regulated by the provisions of this code; and

§28-207.3 Issuance; separate certification for each agency required. Upon satisfaction of the requirements for certification and employment by a private elevator inspection agency, the department shall issue to the applicant a certificate as a private elevator inspector in the city. Private elevator inspectors who are employed by more than one private elevator inspection agency shall apply for a certification for each agency by which they are employed.

SECTION 208

PRIVATE ELEVATOR INSPECTION AGENCY CERTIFICATION

§28-208.1 Private elevator inspection agency certification required. It shall be unlawful for any business to perform the required inspections or tests of elevators as set forth in this code without first having been certified as a private elevator inspection agency by the commissioner.

§28-208.2 Directors. A private elevator inspection agency shall have one or more directors, (hereinafter "agency director"), who shall supervise the field and office operations of the agency and shall act as the responsible representative for the agency. Each individual agency director shall have been approved by the department in accordance with the provisions of this code.

§28-208.2.1 Qualifications. Applicants for agency director approval shall have the following qualifications:

- 1. Have had a minimum of ten years experience supervising the assembly, installation, maintenance, repair, design and/or inspection of elevators within the fifteen years preceding the date of the application, or, if the applicant is an architect or engineer, a minimum of five years of applicable experience within the seven years preceding the date of the application;*
- 2. Demonstrate to the commissioner's satisfaction that the agency director applicant is familiar with the construction and maintenance of elevators, escalators and related equipment regulated by the provisions of this code; and*

§28-208.2.2 Conditions of agency certification. Certification of the private elevator inspection agency is conditioned upon approval of the agency director or directors as provided herein section 28-208. The private elevator inspection agency shall notify the department of any change in its directors at least thirty days prior to such change, and the department shall make a determination regarding the agency's certification status based on the qualifications of the remaining directors. Failure to notify the department accordingly shall render the agency certification void. Should the agency director leave the private elevator inspection agency, his or her agency director approval shall be deemed to be revoked.

§28-208.2.3 Limitations. Each agency director shall supervise the operations of only one private elevator inspection agency.

§28-208.2.4 Expiration of agency director approval. An agency director approval shall expire in three years and shall be renewable in three-year intervals.

SECTION 209

MASTER PLUMBER LICENSE

§28-209.1 Master plumber license required. It shall be unlawful for any person:

1. *To perform plumbing work unless such person is a licensed master plumber or working under the direct and continuing supervision of a licensed master plumber except that a city employee who holds a master plumber license may only perform replacement, maintenance and repair plumbing work on existing buildings in the course of his or her employment.*
2. *To use the title licensed master plumber, master plumber or any other title in such manner as to convey the impression that such person is a licensed master plumber unless such person is licensed as such in accordance with the provisions of section 28-209.*

§28-209.2 Seal. All documents that are required to be filed with any department or agency of the city of New York shall bear the stamp of the seal as well as the signature of the licensee. The licensed master plumber performing the work and services shall personally sign and seal all applications and other documents required to be filed pursuant to the code.

§28-209.3 Additional qualifications. Applicants for a master plumber license shall have the following additional qualifications:

§28-209.3.1 Experience. All applicants for a master plumber license shall submit satisfactory proof establishing that the applicant:

1. *Has had at least seven years total experience within the ten years prior to application in the design and installation of plumbing systems under the direct and continuing supervision of a licensed master plumber in the United States, with at least two years of such experience as a registered journeyman plumber in accordance with the provisions of section 28-210, except that during the three years immediately following the effective date of this code there shall be no requirement for such registered journeyman plumber experience; or*
2. *Has received a bachelor's degree in engineering or appropriate engineering technology from an accredited college or university and has had at least five years total experience within the seven years prior to application in the design and installation of plumbing systems in the United States, where at least two years of such experience were in New York city; or*
3. *Is an architect or engineer with at least three years of experience within the five years prior to application in the design and installation of plumbing systems in the United States, where at least one year of such experience was in New York city; or*
4. *Has had at least seven years total experience within the ten years prior to application, with at least two years of such experience working in the design and installation of plumbing systems under the direct and continuing supervision of a licensed master plumber in the United States. The balance of such required experience may be obtained by performing maintenance, replacement and repair plumbing work on existing buildings while in the employ of a city agency under the direct and continuing supervision of a licensed master plumber supervisor employed by the city agency. Three years after the effective date of this code the two years experience in the design and installation of plumbing systems set forth above may only be satisfied by working as a registered journeyman plumber.*

§28-209.3.2 Armed services. Applicants who were engaged in plumbing work as above provided prior to entering the armed services of the United States shall be permitted to credit their time in the service as experience in the plumbing business,

as above provided; but such service credit shall not exceed one-third of the time required for experience.

§28-209.4 *Certificate of competence and license, plate and/or seal.* The commissioner shall issue a certificate of competence, license, plate, and/or seal, in accordance with the following:

§28-209.4.1 *Certificate of competence.* A certificate of competence shall be issued by the commissioner to an applicant who satisfactorily complies with the experience and examination requirements of this chapter for a license, upon payment of the fee. Such certificate shall contain the full name of the individual and a certificate number, the date of issuance, and shall be signed by the commissioner.

§28-209.4.2 *Effect of issuance.* The issuance of a certificate of competence shall constitute evidence that the person named therein is qualified upon payment of applicable fees to obtain a plate and seal while the certificate is valid except that a city employee while in the employ of the city shall only be entitled to obtain a seal.

§28-209.4.3 *Plate and/or seal required.* The holder of a certificate shall not be entitled to perform work or hold himself or herself out to perform work as a licensed master plumber until such plate and/or seal have been obtained. Further, no holder of a certificate of competence shall enter into any contractual agreement to install or alter any plumbing, gas piping, or any piping system, other than an employment agreement with a master plumber business or a city agency.

§28-209.4.4 *Effect of failure to obtain plate and/or seal.* If a holder of a certificate of competence has held the certificate for five years without a plate and/or seal, then the commissioner may require said person to submit an affidavit and supporting documentation satisfactory to the department stating that over the five-year period the individual has been engaged in the design and installation of plumbing systems in the United States under the direct and continuing supervision of a licensed master plumber. If the holder's qualifications are not satisfactory to the commissioner, the commissioner may require such person to submit to reexamination or to provide evidence of retained proficiency. In addition, additional fees will be due as set forth in this chapter.

§28-209.4.5 *Requirement for obtaining plate and /or seal.* A holder of a certificate of competence shall obtain:

1. A license, plate and seal upon establishing a master plumbing business conforming to the requirements of this section and rules promulgated by the department; or
2. A license and seal upon demonstrating employment with a city agency. The license shall clearly state: "The bearer of this master plumber license is a government employee and as such is not authorized to engage in plumbing contract work outside of his/her government employment and within such government employment shall only engage in maintenance, replacement and repair plumbing work on existing buildings." No plate shall be issued to a licensed master plumber employed by a city agency.

§28-209.4.6 *Issuance.* A certificate of competence or a license, plate, and/or seal as a master plumber shall be issued only to an individual.

§28-209.4.7 *Duplication prohibited.* Not more than one license, plate and/or seal shall be issued to an individual and no individual shall make or cause to be made a duplicate of such license, plate or seal.

§28-209.5 *Surrender of license, plate or seal.* Upon the death or the retirement of a licensed master plumber, or upon the surrender, revocation or suspension of his or her

license, his or her license, plate and/or seal shall immediately be surrendered to the commissioner. Nothing contained herein shall be construed to prevent the legal representative of a deceased licensee, with the consent of the commissioner, from retaining such plate and seal for the purpose of completing all unfinished work of the deceased licensee for which plans have been approved and a permit issued, provided such work is performed by or under the direct and continuing supervision of a licensed master plumber and is completed within one year from the date of the death of the original licensee.

§28-209.6 *Master plumber business.* No individual, corporation, partnership or other business association shall conduct a plumbing contracting business in the city of New York, or employ the name "plumber" or "plumbing" in its business name unless such business is a master plumber business as follows:

1. No less than fifty-one percent of the control or voting capital stock of such entity is owned by one or more individuals who are licensed master plumbers, except as otherwise provided; and
2. All plumbing or gas piping work performed by such entity is performed by or under the direct and continuing supervision of such licensed master plumber; and
3. The person in charge of such work is such licensed master plumber; and
4. The persons actually performing such work are in the direct employ of such master plumber business as authorized by the code.

Exception: A company, corporation, partnership or other business association or its predecessor that was engaged in plumbing work prior to January 25, 1990 may continue to do so in any one or more of such business forms without complying with the foregoing, if (i) application was made to the department prior to July 25, 1990, and (ii) necessary evidence was furnished on or prior to January 25, 1991, that such company, corporation, partnership or other business association or its predecessor had employed an average of ten or more journeymen plumbers doing plumbing work for at least five days a week for a period of ten years or more out of the twenty years preceding July 25, 1990, provided, that such plumbing business continues to have all plumbing work conducted under the management and direct and continuing supervision of a licensed master plumber in the direct employ of such plumbing business and that such licensed master plumber is not otherwise interested in, associated with or employed by any other plumbing business operating in this city except as a joint venture in which such master plumber's employer is one of the joint venturers.

§28-209.6.2 *Use.* Nothing herein contained shall be construed to prohibit the use of a master plumber license by the holder thereof for or on behalf of a partnership, corporation or other business association provided that such partnership, corporation or other business is a master plumber business.

§28-209.6.3 *Identification.* All business vehicles, advertising, websites and stationery used in connection with a master plumber business shall display prominently the full name of the licensee, the words "N.Y.C. licensed plumber," the licensee's number and the licensee's business address. If the business is conducted under a trade name, or by a partnership or corporation, the trade name, partnership or corporate name shall be placed immediately above the full name or names of the licensed master plumber or licensed master plumbers to whom the plates were issued.

§28-209.6.4 *Withdrawal of license.* If a licensed master plumber withdraws

from a master plumbing business operating pursuant to such individual's license, the right of the business to perform plumbing work shall lapse if the provisions of this section are no longer satisfied. If a licensed master plumber's license is revoked or suspended, he or she will be deemed withdrawn from such business.

§28-209.6.5 Ownership limitations. An individual who is a licensed master plumber whose interest or ownership in a master plumber business constitutes any portion of the fifty-one per cent interest or control required by this section shall be prohibited from possessing an interest or ownership in more than one other master plumber business at his or her established place of business, where such interest or ownership would constitute any portion of the fifty-one per cent interest or control required by this section. Both master plumber businesses in which the individual who is a licensed master plumber has an interest shall be located at the same place of business. For the purposes of this section, where two or more individuals who are licensed master plumbers possess an interest or ownership in any master plumber business which together represents more than fifty-one per cent of the interest or control of such entity, all of such licensees shall be deemed to possess a portion of the fifty-one percent interest or control required by this section 28-209.6..

§28-209.6.6 Joint ventures. Nothing contained in this section shall be construed to prevent a master plumber business from entering into a joint venture of limited duration for a particular project with another master plumber business. The terms of a joint venture must be in writing, and documentation of the joint venture must be submitted to the department for approval prior to the initiation of work under such venture.

§28-209.6.7 Supervision. The master plumber shall conduct his or her business to provide direct and continuing supervision in accordance with the provisions of section 28-209.

Exception: The provisions of this section shall not apply to minor alterations or ordinary repairs, as defined in this code, or to the installation or alteration of gas service piping and gas meter piping, including meters, valves, regulators or related equipment, when such work is to be performed, serviced and maintained by utility corporations subject to the jurisdiction of the public service commission.

SECTION 210 JOURNEYMAN PLUMBER REGISTRATION

§28-210.1 Journeyman plumber registration; additional qualifications. Upon satisfactory completion of a New York State-recognized training program or affirmation of his or her qualifications by an employer licensed master plumber or, in the case of a city agency, a supervising licensed master plumber and upon written stipulation of same by the applicant, the commissioner shall register an applicant as journeyman plumber. Such qualifications shall reflect a progressive understanding, proficiency and competence in the plumbing trade, including:

- 1. A working familiarity with the plumbing code and technical standards and the ability to apply the code requirements correctly;*
- 2. The application of basic plumbing theory and the utilization of trade skills on the job site;*
- 3. A working knowledge of the tools of the trade and the ability to utilize them properly; and*

4. *An ability to draft simple diagrams and interpret from drawings for the purpose of the plumbing work in which he or she is engaged.*

§28-210.2 *Experience.* *The applicant for journeyman plumber registration shall have a minimum of five years of full-time experience in the performance of plumbing work under the direct and continuing supervision of a licensed master plumber or equivalent, where at least one year of such experience shall have been in New York city.*

§28-210.3 *Registration need not be renewed.* *The registration for journeyman plumber shall have no expiration and shall not require renewal or re-issuance.*

§28-210.4 *Registration card.* *The registration card shall clearly state: "This registration is NOT A LICENSE, and the holder is NOT AUTHORIZED TO PERFORM PLUMBING WORK in New York city except under the direct and continuing supervision of a licensed master plumber."*

SECTION 211

MASTER FIRE SUPPRESSION PIPING CONTRACTOR LICENSE

§28-211.1 *Master fire suppression piping contractor license required.* *It shall be unlawful for any person:*

1. *To perform fire suppression piping work unless such person is a licensed master fire suppression piping contractor or working under the direct and continuing supervision of a licensed master fire suppression piping contractor except that a city employee who holds a license may only perform replacement, maintenance and repair fire suppression piping work on existing buildings in the course of his or her employment.*
2. *To use the title licensed master fire suppression piping contractor, master fire suppression piping contractor or any other title in such manner as to convey the impression that such person is a licensed master fire suppression piping contractor unless such person is licensed as such in accordance with the provisions of this section 211.*

§28-211.2 *Seal.* *All documents that are required to be filed with any department or agency of the city of New York shall bear the stamp of the seal as well as the signature of the licensee. The licensed master fire suppression piping contractor performing the work and services shall personally sign and seal all applications and other documents required to be filed pursuant to the code.*

§28-211.3 *Classification.* *There shall be three classes of licenses for master fire suppression piping contractor:*

1. *Class A.* *The holder of a class A master fire suppression piping contractor license is authorized to perform any work in connection with any and all fire suppression piping systems as set forth in paragraphs 1 and 2 of the definition of fire suppression piping system in section 28-201.3*
2. *Class B.* *The holder of a class B master fire suppression piping contractor license is authorized to perform any work in connection with any and all fire suppression piping systems as set forth in paragraph 1 of the definition of fire suppression piping system in section 28-201.3*
3. *Class C.* *The holder of a class C master fire suppression piping contractor license is authorized to perform any work in connection with any and all fire suppression piping systems as set forth in paragraph 2 of the definition of fire suppression piping system in section 28-201.3*

§28-211.4 *Additional qualifications.* *Applicants for a master fire suppression piping contractor license shall have the following additional qualifications:*

§28-211.4.1 Experience. All applicants for a master fire suppression piping contractor license shall submit satisfactory proof establishing that the applicant:

- 1. Has had at least seven years total experience within the ten years prior to application in the design and installation of fire suppression piping systems under the direct and continuing supervision of a licensed master fire suppression piping contractor in the United States with the class of license for which application is made, with at least two years of such experience as a registered journeyman fire suppression piping installer in accordance with the provisions of section 212, except that during the three years immediately following the effective date of this code there shall be no requirement for such registered journeyman fire suppression piping installer experience; or*
- 2. Has received a bachelor's degree in engineering or appropriate engineering technology from an accredited college or university and has had at least five years total experience within the seven years prior to application in the design and installation of fire suppression piping systems in the United States for the class of license for which application is made, at least two of which were in New York city; or*
- 3. Is an architect or engineer with at least three years of experience within the five years prior to application in the design and installation of fire suppression piping systems in the United States for the class of license for which application is made, where at least one year of such experience was in New York city; or*
- 4. Has had at least seven years total experience within the ten years prior to application, with at least two years of such experience working in the design and installation of fire suppression piping systems under the direct and continuing supervision of a licensed master fire suppression piping contractor in the United States with the class of license for which application is made. The balance of such required experience may be obtained by performing maintenance, replacement and repair fire suppression piping work on existing buildings while in the employ of a city agency under the direct and continuing supervision of a licensed master fire suppression piping contractor supervisor employed by the city agency with the class of license for which application is made. Three years after the effective date of this section the two years of experience in the design and installation of fire suppression piping systems set forth above may only be satisfied by working as a registered journeyman fire suppression piping installer.*

§28-211.4.2 Armed services. Applicants who were engaged in fire suppression piping work prior to entering the armed services of the United States shall be permitted to credit their time in the service as experience in the fire suppression piping business, as above provided; but such service credit shall not exceed one-third of the time required for experience.

§28-211.5 Certificate of competence and license, plate and/or seal. The commissioner shall issue a certificate of competence, license, plate and/or seal in accordance with the following:

§28-211.5.1 Certificate of competence. A certificate of competence shall be issued by the commissioner to an applicant who satisfactorily complies with the experience and examination requirements of this section for a license, upon payment

of the fee. Such certificate shall contain the full name of the individual and a certificate number, and shall be signed by the commissioner.

§28-211.5.2 *Effect of issuance.* The issuance of a certificate of competence shall constitute evidence that the person named therein is qualified upon payment of applicable fees to obtain a plate and seal while the certificate is valid except that a city employee while in the employ of the city shall only be entitled to obtain a seal.

§28-211.5.3 *Plate and /or seal required.* The holder of a certificate of competence shall not be entitled to perform work or hold himself or herself out to perform work as a licensed master fire suppression piping contractor until such plate and/or seal have been obtained. Further, no holder of a certificate of competence shall enter into any contractual agreement to install or alter any fire suppression piping system other than an employment agreement with a master fire suppression piping business or a city agency.

§28-211.5.4 *Failure to obtain plate and/or seal.* If a holder of a certificate of competence has held the certificate for five years without a plate and/or seal, then the commissioner may require said person to submit an affidavit and supporting documentation satisfactory to the department stating that over the five-year period the individual has been engaged in the design and installation of fire suppression piping systems in the United States under the direct and continuing supervision of a licensed master fire suppression piping contractor. If the holder's qualifications are not satisfactory to the commissioner, the commissioner may require such person to submit to reexamination or to provide evidence of retained proficiency. In addition, additional fees will be due as set forth in this chapter.

§28-211.5.5 *License plate and/or seal.* A holder of a certificate of competence or an applicant who has satisfied all requirements for a master fire suppression piping contractor license shall obtain:

1. A license, plate and seal upon establishing a fire suppression piping contracting business conforming to the requirements of this section and any rules promulgated by the department; or
2. A license and seal upon demonstrating employment with a city agency. The license shall clearly state: "The bearer of this master fire suppression piping contractor license is a government employee and as such is not authorized to engage in fire suppression piping contract work outside of his/her government employment and within such government employment shall only engage in maintenance, replacement and repair fire suppression piping work on existing buildings." No plate shall be issued to a licensed master fire suppression piping contractor employed by a city agency.

§28-211.5.6 *Issuance.* A certificate of competence or a license, plate and/or seal as a master fire suppression piping contractor shall be issued only to an individual.

§28-211.5.7 *Duplication prohibited.* Not more than one license, plate and/or seal shall be issued to an individual, and no individual shall make or cause to be made a duplicate of such license, plate or seal.

§28-211.6 *Waiver of examinations.* Any license issued without examination pursuant to an application filed prior to July 25, 1990 pursuant to the provisions of law in effect prior to the effective date of this code that has not lapsed as of the effective date of this code, shall be renewable pursuant to the provisions of this code.

§28-211.7 *Surrender of license, plate and/or seal.* Upon the death or the retirement of a licensed master fire suppression piping contractor, or upon the surrender, revocation or suspension of his or her license, his or her license, plate and seal shall

immediately be surrendered to the commissioner. Nothing contained herein shall be construed to prevent the legal representative of a deceased licensee, with the consent of the commissioner, from retaining such plate and seal for the purpose of completing all unfinished work of such deceased licensee for which plans have been approved and a permit issued, provided such work is performed by or under the direct and continuing supervision of a licensed master fire suppression piping contractor and is completed within one year from the date of the death of the original licensee.

§28-211.8 Master fire suppression piping contractor business required. No individual, corporation, partnership or other business association shall conduct a fire suppression piping contracting business in the city of New York, or employ the name "fire suppression piping" in its business name, unless the business is a master fire suppression business as follows:

1. No less than fifty-one percent of the control or voting capital stock of such entity is owned by one or more individuals who are licensed master fire suppression piping contractors, except as otherwise provided; and
2. All fire suppression piping work performed by such entity is performed by or under the direct and continuing supervision of such licensed master fire suppression piping contractor; and
3. The person in charge of such work is such licensed master fire suppression piping contractor; and
4. The persons actually performing such work are in the direct employ of such master fire suppression piping contractor business as authorized by the code.

Exception: A company, corporation, partnership or other business association or its predecessor that was engaged in fire suppression piping contractor work prior to January 25, 1990 may continue to do so in any one or more of such business forms without complying with the foregoing, if (i) application was made to the department prior to July 25, 1990, and (ii) necessary evidence was furnished on or prior to January 25, 1991, that such company, corporation, partnership or other business association or its predecessor had employed an average of ten or more journeymen doing fire suppression piping contractor work for at least five days a week for a period of ten years or more out of the twenty years preceding July 25, 1990, provided, that such business continues to have all fire suppression piping contractor work conducted under the management and direct and continuing supervision of a licensed master fire suppression contractor in the direct employ of such business and that such licensed master fire suppression contractor is not otherwise interested in, associated with or employed by any other licensed master fire suppression contracting business operating in this city except as a joint venture in which such licensed master fire suppression contractor's employer is one of the joint venturers.

§28-211.8.2 Use. Nothing herein contained shall be construed to prohibit the use of a master fire suppression piping contractor license by the holder thereof for or on behalf of a partnership, corporation or other business association provided that such partnership, corporation or other business is a master fire suppression piping contractor business.

§28-211.8.3 Identification. All business vehicles, advertising, websites and stationery used in connection with a master fire suppression piping contractor business shall display prominently the full name of the licensee, the words "N.Y.C. licensed fire suppression piping contractor – class A, B or C," the licensee's number and the licensee's business address. If the business is conducted under a trade name,

or by a partnership or corporation, the trade name, partnership or corporate name shall be placed immediately above the full name or names of the licensed master fire suppression piping contractor or licensed master fire suppression piping contractors to whom the plates were issued.

§28-211.8.4 *Withdrawal of licensee.* If a licensed master fire suppression piping contractor withdraws from a master fire suppression piping contractor business operating pursuant to such individual's license, the right of the business to perform fire suppression piping work shall lapse if the provisions of this section are no longer satisfied. If a licensed master fire suppression piping contractor's license is revoked or suspended, he or she will be deemed withdrawn from such business.

§28-211.8.5 *Ownership limitations.* An individual who is a licensed master fire suppression piping contractor whose interest or ownership in a master fire suppression piping contractor business constitutes any portion of the fifty-one percent interest or control required by this section shall be prohibited from possessing an interest or ownership in more than one other fire suppression piping contractor business at his or her established place of business where such interest or ownership would constitute any portion of the fifty-one per cent interest or control required by this section. Both fire suppression piping contractor businesses in which the individual who is a licensed master fire suppression piping contractor has an interest shall be located at the same place of business. For the purposes of this section, where two or more individuals who are licensed master fire suppression piping contractors possess an interest or ownership in any master fire suppression piping contractor business which together represents more than fifty-one percent of the interest or control of such entity, all of such licensees shall be deemed to possess a portion of the fifty-one percent interest or control required by this section 28-211.8..

§28-211.8.6 *Joint ventures.* Nothing contained in this section shall be construed to prevent a master fire suppression piping contractor business from entering into a joint venture of limited duration for a particular project with another master fire suppression piping contractor business. The terms of a joint venture must be in writing, and documentation of the joint venture must be submitted to the department for approval prior to the initiation of work under such venture.

§28-211.8.7 *Supervision.* The master fire suppression piping contractor shall conduct his or her business to provide direct and continuing supervision in accordance with the provisions of this section 28-211.

Exception: The provisions of this section shall not apply to minor alterations or ordinary repairs, as defined in this code, and/or to maintenance of a fire suppression piping system.

SECTION 212

JOURNEYMAN FIRE SUPPRESSION PIPING INSTALLER REGISTRATION

§28-212.1 *Journeyman fire suppression piping installer registration; additional qualifications.* Upon satisfactory completion of a New York State-recognized training program or affirmation of his or her qualifications by an employer licensed master fire suppression piping contractor or, in the case of a city agency, a supervising licensed master fire suppression piping contractor and upon written stipulation of same by the applicant, the commissioner shall register an applicant as journeyman fire suppression piping installer. Such qualifications shall reflect a progressive understanding, proficiency and competence in the fire suppression piping trade, including:

1. *A working familiarity with the code and technical standards with regard to fire suppression piping, and the ability to apply the code requirements correctly;*
2. *The application of basic fire suppression theory and the utilization of trade skills on the job site;*
3. *A working knowledge of the tools of the trade and the ability to utilize them properly; and*
4. *An ability to draft simple diagrams and interpret from drawings for the purpose of the fire suppression piping work in which he or she is engaged.*

§28-212.2 *Experience.* *The applicant for journeyman fire suppression piping installer registration shall have a minimum of five years of full-time experience in the performance of fire suppression piping work under the direct and continuing supervision of a licensed master fire suppression piping contractor or equivalent, where at least one year of such experience shall have been in New York city.*

§28-212.3 *The registration for journeyman fire suppression piping installer shall have no expiration and shall not require renewal or reissuance.*

§28-212.4 *The registration shall clearly state: "This registration is NOT A LICENSE, and the holder is NOT AUTHORIZED TO PERFORM FIRE SUPPRESSION PIPING WORK in New York City except under the direct and continuing supervision of a Licensed Master Fire Suppression Piping Contractor."*

SECTION 213

OIL-BURNING EQUIPMENT INSTALLER LICENSE

§28-213.1 *Oil-burning equipment installer license required. It shall be unlawful to install oil-burning equipment in the city unless such work is performed by or under the direct and continuing supervision of a person licensed as an oil-burning equipment installer under the provisions of this section.*

§28-213.2 *Classifications.* *Oil-burning equipment installer licenses shall be classified as follows:*

1. *Class A oil-burning equipment installer license. Licenses the holder thereof to install any type of oil-burning equipment, as an independent contractor with full responsibility for the manner in which the work is done, and for the material and equipment used, and for the control and direct and continuing supervision of the persons employed on the work. Such equipment shall include but not be limited to burners, boilers and generators.*
2. *Class B oil-burning equipment installer license. Licenses the holder thereof to install oil-burning equipment for the use of domestic fuel oils from number one fuel oil to and including number four fuel oil, as an independent contractor with full responsibility for the manner in which the work is done, for the materials and equipment used, and for the control and direct and continuing supervision of the persons employed on the work.*

§28-213.3 *Qualifications.* *Applicants for an oil-burning equipment installer license shall have the following qualifications:*

§28-213.3.1 *Experience for Class A license.* *All applicants for a class A oil-burning equipment installer license shall submit satisfactory proof establishing that the applicant has had at least four years practical experience within the seven years prior to application in the installation of oil-burning equipment under the direct and continuing supervision of a Class A-licensed oil-burning equipment installer in the city, including at least one year experience in the installation of oil-burning equipment for the use of number five and number six fuel oils.*

§28-213.3.2 *Experience for class B license. All applicants for a class B oil-burning equipment installer license shall submit satisfactory proof establishing that the applicant has had at least three years practical experience within the five years prior to application in the installation of oil-burning equipment under the direct and continuing supervision of a licensed oil-burning equipment installer in the city.*

§28-213.4 *Fitness to perform work. As a condition of license renewal, a licensed oil burning equipment installer shall provide evidence satisfactory to the department that he or she is fit to perform the work.*

SECTION 214

HIGH-PRESSURE BOILER OPERATING ENGINEER LICENSE

§28-214.1 *High-pressure boiler operating engineer license required. It shall be unlawful to operate any high-pressure steam boiler for any purpose whatsoever, in the city of New York or in connection with any vessel on the waters in and around the city not subject to the jurisdiction of the United States, unless such boiler is operated by or under the direct and continuing supervision and in the presence of a person having a high-pressure boiler operating engineer license under the provisions of this section 28-214.*

§28-214.2 *Qualifications. Applicants for a high-pressure boiler operating engineer license shall present satisfactory proof that:*

1. *Applicant was employed as a fireman, oiler, general assistant, journeyman, boiler-maker or machinist under the direct and continuing supervision of a licensed high-pressure boiler operating engineer in the city for a period of not less than five years within the seven year period preceding the date of his or her application; however, in lieu of the experience requirement contained in this paragraph, an applicant for a high-pressure boiler operating engineer license who is employed in a fossil fuel production plant located in the Rockaway Peninsula area of Queens county may submit satisfactory proof establishing that he or she has obtained at least five years experience within the seven years preceding the date of his or her application which shall include at least two years of experience obtained during employment under the direct and continuing supervision of a licensed high-pressure boiler operating engineer in a steam generating plant located outside of the city of New York but within the state of New York that is owned and operated by a licensed public utility company, and shall also include a separate period of at least three years of experience obtained during employment as a fireman, oiler, general assistant, journeyman, boiler-maker or any comparable position as approved by the commissioner, in such steam generating plant; or*
2. *Applicant received a degree in mechanical engineering from an accredited school or college and had one year experience in the operation and maintenance of high-pressure boilers under the direct and continuing supervision of a licensed high-pressure boiler operating engineer in the city within the two year period preceding the date of his or her application; or*
3. *Applicant has held, for a minimum of four years, a certificate as an engineer issued by a board of examining engineers duly established and qualified pursuant to the laws of the United States or any state or territory thereof, or a certificate as a marine engineer issued by the United States Coast Guard, and a minimum of one year experience in the city in the operation and maintenance of stationary high-pressure boiler plants under the direct and continuing*

supervision of a licensed high-pressure boiler operating engineer within the seven years preceding the date of his or her application, provided that the applicant shall have filed with his or her application his or her own signed statement that he or she is the person named in said certificate together with the supporting signed statements by three licensed high-pressure boiler operating engineers employed in the city of New York at the time of making of such signed statements; or

4. Applicant exercised direct and continuing supervision, care, operation and maintenance over a steam generating plant of a governmental building, having boilers of 150 or more horsepower, for a minimum of five years and had a minimum of one year of experience on high-pressure boilers under the direct and continuing supervision of a licensed high-pressure boiler operating engineer in the city within the seven year period preceding the date of his or her application; or
5. Applicant successfully completed a New York state approved apprenticeship training program of at least two years and had at least three years experience within the seven years preceding the date of his or her application in the operation and maintenance of high-pressure boilers in the city under the direct and continuing supervision of a licensed high-pressure boiler operating engineer.

§28-214.3 *Fitness to perform work.* As a condition of license renewal, a licensed high-pressure boiler operating engineer shall provide evidence satisfactory to the department that he or she is fit to perform the work.

SECTION 215

PORTABLE HIGH-PRESSURE BOILER OPERATING ENGINEER LICENSE

§28-215.1 *Portable high-pressure boiler operating engineer license required.* It shall be unlawful to operate a portable high-pressure steam boiler for any purpose whatsoever in the city of New York unless such boiler is operated by or under the direct and continuing supervision and in the presence of a person licensed as a portable high-pressure boiler operating engineer.

§28-215.2 *Qualifications.* Applicants for a portable high-pressure boiler operating engineer license shall present satisfactory proof that applicant held a basic license as a hoisting machine operator as provided in this chapter for a minimum of three years within the five year period preceding the date of his or her application; and served as a fireman, oiler, assistant engineer or engineer on portable high-pressure boilers for a minimum of three years within the seven year period preceding the date of his or her application at least one year on portable high pressure boilers within the city under the direct and continuing supervision of a licensed portable high-pressure boiler operating engineer.

§28-215.3 *Fitness to perform work.* As a condition of license renewal, a licensed portable high-pressure boiler operating engineer shall provide evidence satisfactory to the department that he or she is fit to perform the work.

SECTION 216

SIGN HANGER LICENSE

§28-216.1 *Sign hanger license required.* It shall be unlawful to hoist or lower or to hang or attach any sign upon or on the outside of any building in the city unless such work is performed by or under the direct and continuing supervision of a person licensed

as a sign hanger under the provisions of this section.

§28-216.2 Exemptions. The provisions of this section shall not apply to the following:

1. Signs not exceeding seventy-five square feet in area, measured on one face only, nor exceeding twenty-five pounds in weight; or
2. Signs supported directly on the ground; or
3. Directional signs; or
4. Temporary signs erected during the construction or alteration of a building and related to such work; or
5. The erection or placing of any signs by employees of the city, any city department or other city agency.

§28-216.3 Classification. Such licenses shall be classified as follows:

1. Master sign hanger license. Authorizes the holder thereof to hoist or lower or to hang or attach any sign, irrespective of weight, upon or on the outside of any building.
2. Special sign hanger license. Authorizes the holder thereof to hoist or lower or to hang or attach any sign not exceeding one hundred fifty square feet in area, measured on one face only, nor exceeding one thousand two hundred pounds in weight, upon or on the outside of any building.

§28-216.4 Additional qualifications. Applicants for a sign hanger license shall have the following additional qualifications:

§28-216.4.1 Master sign hanger qualifications. All applicants for a master sign hanger license shall submit satisfactory proof establishing that the applicant has had at least five years practical experience in sign hanging within the seven years preceding the date of his or her license application under the direct and continuing supervision of a licensed master sign hanger; and the applicant shall also have a knowledge of and ability to read plans and specifications relating to sign construction and erection, including supporting framework and other supports, and a knowledge of the problems and practices of sign construction and hanging and be familiar with the equipment and tools used in sign hanging.

§28-216.4.2 Special sign hanger qualifications. All applicants for a special sign hanger license shall submit satisfactory proof establishing that the applicant has had at least three years practical experience in sign hanging within the five years preceding the date of the license application under the direct and continuing supervision of a licensed sign hanger; and the applicant shall also have a knowledge and ability to read plans and specifications relating to sign construction and erection, including supporting framework and other supports, and a knowledge of the problems and practices of sign construction and hanging and be familiar with the equipment and tools used in sign hanging.

§28-216.5 Additional requirements. The following additional requirements shall apply to sign hangers:

§28-216.5.1 Danger warning. Every licensed sign hanger shall, while sign hanging operations are in progress at a job site, place, conspicuously, at such job site two plates or signs not less than 18 inches (457 mm) by 24 inches (610 mm) in size (i) displaying the word "danger" in letters not less than 6 inches (152 mm) high, and (ii) disclosing the sign hanger's name, business address, type of license and license number.

§28-216.5.2 Sign hanger place of business. Every licensed sign hanger shall have a place of business within the city and shall display prominently at such place

of business a plate or sign marked with the words "sign hanger" and his or her license number immediately thereunder.

§28-216.6 *Fitness to perform work.* As a condition of license renewal, a licensed sign hanger shall provide evidence satisfactory to the department that he or she is fit to perform the work.

SECTION 217 FILING REPRESENTATIVE REGISTRATION

§28-217.1 *Filing representative registration required.* No person shall use the term "registered filing representative" or "filing representative" or any similar representation in such manner as to convey the impression that such person is a registered filing representative in accordance with the provisions of this section; nor shall any person present, submit, furnish or seek approval of applications or construction documents, or remove any documents from the possession of the department, without first having registered with the department his or her name, address and company affiliation on a form to be furnished by the department.

§28-217.2 *Exemptions.* The following persons are exempt from the provisions of this section:

1. The owners of the premises for which the building applications are filed including, in the case of partnerships or corporations, the general partners or the principal officers of the corporation, where the principal officers of a corporation shall include the president, vice presidents, secretary and treasurer;
2. The lessees of such premises authorized by the owner to file building applications;
3. Condominium unit owners authorized by the condominium board of managers to file building applications;
4. Cooperative shareholders authorized by the cooperative board of directors to file building applications;
5. Architects;
6. Engineers;
7. Attorneys admitted to practice in New York state;
8. Master plumbers licensed pursuant to this chapter;
9. Master fire suppression piping contractors licensed pursuant to this chapter; and
10. Master electricians licensed pursuant to subchapter one of chapter three of title twenty-seven of the administrative code.

§28-217.3 *Rules.* The commissioner shall promulgate rules for the proper and efficient administration and enforcement of this section. Unless required by rule, a registered filing representative shall not be required to take an examination or to complete continuing education courses as a condition for renewal of the registration.

SECTION 218 BOARDS

§28-218.1 *Plumbing and fire suppression piping contractor license board.* The commissioner shall appoint annually and may remove in his or her discretion each member of a plumbing and fire suppression piping contractor license board that shall have as its purpose the following:

1. To advise the commissioner regarding the character and fitness of applicants for

certificates of competence and licenses who have passed the required examination.

2. *To advise the commissioner regarding allegations of illegal practices on the part of licensed master plumbers, licensed master fire suppression piping contractors, master plumber businesses or master fire suppression piping businesses.*
3. *To advise the commissioner regarding plumbing and fire suppression piping practices, code applications, regulations and legislation;*
4. *To perform such other responsibilities as may be requested by the commissioner and as set forth in rules promulgated by the department.*

§28-218.1.1 Removal. The commissioner may remove any member of the license board and shall fill any vacancy therein.

§28-218.1.2 Membership. Membership of the board shall consist of :

1. *Two officers or employees of the department;*
2. *Five licensed master plumbers, three of whom shall be selected from nominees of the New York City contracting plumbing association whose members perform the largest dollar value of work within the city and one of whom shall be the holder of a class A or class B master fire suppression piping contractor license. The two remaining licensed master plumber board member positions should be from the next largest plumbing association in the City of New York.*
3. *Two licensed master fire suppression piping contractors, both of whom shall hold a class A license;*
4. *A registered journeyman plumber from the organization representing the largest number of registered journeyman plumbers;*
5. *A registered journeyman fire suppression piping installer from the organization representing the largest number of registered journeyman fire suppression piping installers;*
6. *An engineer having at least five years experience in the design of plumbing systems;*
7. *An architect;*
8. *An engineer who is a full member of the society of fire protection engineers;*
9. *Two officers or employees of the fire department representing the fire commissioner; and*
10. *A real estate owner or manager or representative thereof.*

§28-218.1.3 Organization of the board. A member of the board who is an officer or employee of the department representing the commissioner shall serve as chairperson and all members shall serve without compensation. Nine members including the chairperson, who shall be entitled to vote, shall constitute a quorum of the board for the transaction of business. All actions shall be conducted by majority vote except as otherwise provided, and the board shall keep minutes of its proceedings and records of its investigations. The board shall meet at least once a month except during the months of July and August, and at such other times upon call of the chairperson.

§28-218.1.4 Advisory and support personnel. The board may request the commissioner to appoint duly authorized representatives to conduct investigations and other activities incidental to the functions of the license board. Such appointees shall be non-voting members of the committee to which they are appointed, and may include personnel who are not department employees who shall serve without

compensation. In addition the commissioner may designate such employees of the department as he or she deems necessary to the service and support of the license board.

SECTION 219
PENALTIES

§28-219.1 Penalties for unlicensed work. Any person who engages in or carries on in the city any business, trade or occupation regulated by this chapter or holds himself or herself out as licensed pursuant to this chapter, without having first obtained a license from the commissioner in accordance with and subject to the provisions of this chapter and the rules of the department or who permits such unlicensed work to be performed shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not more than ten thousand dollars or by imprisonment not exceeding six months or by both such fine and imprisonment for each such violation. Such person shall also be liable for a civil penalty of not more than ten thousand dollars for each violation which may be recovered in a proceeding before a court of competent jurisdiction or in a proceeding before the environmental control board.

§28-219.2 Other penalties. Except as otherwise provided in section 28-219.1 a person who shall violate any of the provisions of this chapter shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not more than five thousand dollars or by imprisonment not exceeding three months or by both such fine and imprisonment for each such violation. Such person shall also be liable for a civil penalty of not more than five thousand dollars for each violation which may be recovered in a proceeding before a court of competent jurisdiction or in a proceeding before the environmental control board.

CHAPTER 3
SPECIAL PROVISIONS RELATING TO REGULATION OF OUTDOOR SIGNS

SECTION 301
MAINTENANCE PERMIT FOR OUTDOOR SIGNS

§28-301.1 Permit required. The commissioner may, in his or her discretion, when necessary in the public interest, establish a permit requirement for signs maintained in the areas described in this section in accordance with the provisions of this chapter and the rules of the department. On and after a date to be provided by the rules establishing such a permit requirement, and subject to the provisions of section 28-301.6 of this code, it shall be unlawful to place or maintain a sign, as defined in section 12-10 of the zoning resolution, on any building or premises unless a permit for the maintenance of such sign has been issued by the department pursuant to this article if such sign is within a distance of nine hundred linear feet from and within view of an arterial highway or within a distance of two hundred linear feet from and within view of a public park with an area of one half acre or more.

§28-301.1.1 Other permits irrelevant. Where a sign maintenance permit has been established by the commissioner pursuant to section 28-301.1 such permit shall be required for all signs maintained in the areas described in such section and not otherwise excluded under section 28-301.6, whether or not a permit is required and/or has been issued for the installation, alteration or erection of such sign pursuant to this code.

§28-301.1.2 Arterial highway. For the purposes of this section the term arterial highway shall include all highways that are shown on the master plan of arterial highways and major streets as principal routes parkways or toll crossings and that have been designated by the city planning commission as arterial highways to which the provisions of sections 42-55 and 32-66 of the zoning resolution shall apply as shown in appendix C of the zoning resolution.

§28-301.2 Application. Application for a permit or for the renewal of a permit shall be made on forms to be furnished by the department and shall contain such information as the department shall prescribe. Except as otherwise provided in section 28-301.3, a permit shall remain in effect for a period to be determined by rule and may be renewed. The fee for a permit or for its renewal shall be established by rule. The identification number of the permit shall be displayed on the sign or on the building or premises on which the sign is located or both, in a manner to be provided by rule.

§28-301.3 Permit expiration. A permit issued pursuant to section 28-301.1 of this code shall expire and be of no further force or effect where:

- 1. In the case of a sign which is accessory to a principal use within the meaning of section 12-10 of the zoning resolution, there has been a discontinuance of the operation of the principal use to which such sign is accessory, or in the event the sign is no longer in the same ownership as such principal use or is no longer operated and maintained substantially for the benefit or convenience of the owners, occupants, employees, customers or visitors of the principal use;*
- 2. In the case of any sign for which a permit has been issued pursuant to section 28-301.1 of this code, whether or not accessory to a principal use within the meaning of section 12-10 of the zoning resolution, there has been a change in copy which the commissioner has determined renders such sign no longer in compliance with the zoning resolution. The commissioner shall prescribe by rule procedures for the notification to the department concerning changes in copy which have been made on signs for which permits have been issued under section 28-301.1 of this code. Nothing herein shall be construed as limiting the ability of any person to apply for a new permit pursuant to this code.*

§28-301.4 Civil penalties. Any person who places or maintains a sign on a building or premises without an appropriate permit in violation of section 28-301.1 of this code shall be liable for a civil penalty of, for a first violation, not more than fifteen thousand dollars and, for a second or subsequent violation, not more than twenty-five thousand dollars. Each day's continuance shall be a separate and distinct violation. Such civil penalties may be recovered in an action in any court of appropriate jurisdiction or in a proceeding before the environmental control board. Such board shall have the power to impose the civil penalties provided for in this section. Notwithstanding the provisions of section six hundred sixty-six of the charter, a notice of violation issued by the department pursuant to this section shall not be subject to review by the board of standards and appeals.

§28-301.5 Construction. This chapter shall not be construed to grant the right to place or maintain a sign on any building or premises where the placement or maintenance of such sign would otherwise be prohibited pursuant to the zoning resolution, the administrative code or any other provision of law. No permit for a sign issued hereunder shall be deemed to constitute permission or authorization to maintain a sign which is unlawful pursuant to any other provisions of law nor shall any permit issued hereunder constitute a defense in an action or proceeding with respect to such an unlawful sign.

§28-301.6 Exemption. The provisions of section 28-301.1 shall not apply to:

1. Signs with a surface area of 200 square feet or less that are located no higher than 3 feet (914 mm) above the floor of the second story of the building on which the sign is located; and
2. Signs under the control of an outdoor advertising company and included on a certified list of signs, sign structures, and sign locations under the control of such company required to be filed with the department pursuant to this chapter.

SECTION 302

OUTDOOR ADVERTISING COMPANIES

§28-302.1 Definitions. As used in this chapter, the following terms shall have the following meanings:

AFFILIATE. An outdoor advertising company having a controlling interest in another outdoor advertising company or in which such other outdoor advertising company has a controlling interest. In addition, where a person or entity has controlling interests in two or more outdoor advertising companies, such outdoor advertising companies shall be considered affiliates of each other. A “controlling interest” means actual working control, in whatever manner exercised, including without limitation, control through ownership, management, debt instruments or negative control, as the case may be, as defined in rules of the department.

OUTDOOR ADVERTISING COMPANY. A person, corporation, partnership or other business entity that as a part of the regular conduct of its business engages in or, by way of advertising, promotions or other methods, holds itself out as engaging in the outdoor advertising business..

OUTDOOR ADVERTISING BUSINESS. The business of selling, leasing, marketing, managing, or otherwise either directly or indirectly making space on signs situated on buildings and premises within the city of New York available to others for advertising purposes, whether such advertising directs attention to a business, profession, commodity, service or entertainment conducted, sold, or offered on the same or a different zoning lot and whether such sign is classified as an advertising sign pursuant to section 12-10 of the zoning resolution.

SIGN. A sign as defined in section 12-10 of the zoning resolution except that such term shall not include any sign subject to regulation by the department of transportation.

SIGN LOCATION. A building or premises on which an outdoor advertising company is entitled to sell, lease, market, manage or otherwise either directly or indirectly make space on signs available to customers, irrespective of whether a sign exists on such building or premises.

UNDER THE CONTROL OF AN OUTDOOR ADVERTISING COMPANY in reference to a sign, sign structure, or sign location. That space on such sign, sign structure, or at such sign location that is sold, leased, marketed, managed or otherwise either directly or indirectly made available to others for any purposes by such outdoor advertising company.

§28-302.2 Registration of outdoor advertising companies. On and after a date to be provided by rule, it shall be unlawful for an outdoor advertising company to engage in the outdoor advertising business or, by way of advertising, promotions or other methods, hold itself out as engaging in the outdoor advertising business unless such company is registered in accordance with this code and the rules of the department. Such rules shall establish a procedure pursuant to which the department may require the single registration of an outdoor advertising company and its affiliates. An outdoor advertising

company and its affiliates made subject to single registration shall be considered a single outdoor advertising company for purposes of this code.

§28-302.2.1 *Application.* Application for registration or the renewal of registration shall be made on forms to be furnished by the department, may be made through electronic means, and shall contain such information as the department shall prescribe. Registration shall remain in force for two years and may be renewed. The fee for such registration and for the renewal of such registration shall be established by rule and may be based on the number of signs in the registered inventory.

§28-302.2.2 *Security.* Each outdoor advertising company shall post a bond or provide another form of security to the city in an amount to be determined by the department by rule to cover:

1. All costs incurred by the city pursuant to this code for painting over, covering, rendering ineffective or for the removal and storage of an illegal sign or sign structure under the control of such outdoor advertising company; and
2. All fines or civil penalties imposed against such company pursuant to this chapter.

§28-302.2.3 *Revocation or suspension or registration.* The department may revoke, suspend or refuse to renew the registration of an outdoor advertising company or impose fines or other penalties where it is determined by the commissioner, after notice and the opportunity to be heard, that (i) such company has made statements that it knew or should have known are false in any application or certification filed with the department, (ii) such company has failed to comply with section 28-302.3 of this code or the rules adopted pursuant to its provisions by failing to file a listing of signs, sign structures and sign locations under its control as specified in such section within the time and in the manner required by department rules or by filing an incomplete listing of signs, sign structures and sign locations under its control as specified in such section, (iii) such company has been found liable for or has admitted to violations of the zoning resolution under section 28-302.5 of this code committed on three or more occasions within a thirty-six month period, where such violations relate to the erection, maintenance, attachment, affixing, painting or representation in any other manner on a building or premises of advertising signs, as defined in section 12-10 of the zoning resolution, at locations where the display of such advertising signs is not permitted under the zoning resolution or at locations where the display of such advertising signs violates the size, height, or illumination provisions of the zoning resolution, and such signs are located within a distance of nine hundred linear feet from and within view of an arterial highway or within two hundred linear feet from and within view of a public park with an area of one half acre or more, (iv) such company has failed to pay any civil penalties imposed or amounts owed to the city pursuant to section 28-302.5 of this code or, (v) such company has violated the department's rules pertaining to outdoor advertising companies. No application for registration by an outdoor advertising company or any affiliate thereof shall be accepted for filing by the department for a period of five years after revocation of or the refusal to renew the registration of such outdoor advertising company pursuant to this code. The department shall not accept or process any applications for permits to install, erect or alter signs pursuant to this code or for the maintenance of signs pursuant to section 28-301.1 of this code where such applications are filed by or where such

signs are under the control of an outdoor advertising company or any affiliate thereof after the registration of such outdoor advertising company has been revoked or not renewed or during the term of any period of suspension of such registration. The commissioner may settle any proceeding in which the revocation, suspension or renewal of an outdoor advertising company's registration is at issue upon such terms and conditions as he or she may deem appropriate including but not limited to the agreement of an outdoor advertising company to remove signs along with supporting sign structures as a condition for the dismissal of such proceeding.

§28-302.3 *Location of signs.* An outdoor advertising company shall provide the department with a listing with the location of signs, sign structures and sign locations under the control of such outdoor advertising company in accordance with the following provisions:

§28-302.3.1 *Listing.* The listing shall include all signs, sign structures and sign locations located (i) within a distance of nine hundred linear feet from and within view of an arterial highway; or (ii) within a distance of two hundred linear feet from and within view of a public park with an area of one half acre or more.

§28-302.3.2 *Rulemaking.* In addition to the signs, sign structures and sign locations required to be reported pursuant to section 28-302.3.1, the commissioner may, by rule, expand the scope of such listing to include the reporting of other signs, sign structures and sign locations, as specified in such rule.

§28-302.3.3 *Form of listing.* The listing shall be in such form, containing such information and filed at such periodic intervals or upon such other conditions, as the department shall prescribe by rule.

§28-302.3.4 *Other information.* Such listing shall also indicate the permit identification numbers for the erection, alteration or installation of such signs pursuant to this code and for the maintenance of such signs pursuant to section 28-301.1, unless a permit is not required pursuant to such provisions, as well as the name and license number of the master or special sign hanger who hung or erected each such sign.

§28-302.3.5 *Certification.* Such listing shall be accompanied by (i) a certification by an architect or engineer, co-signed by a responsible officer of the outdoor advertising company, that all signs reported on such listing are in compliance with the zoning resolution; (ii) copies of proof that the sign complies with the zoning resolution and a certification by the sign's owner that to the best of the certifier's knowledge and belief the information provided is accurate, or (iii) a written opinion by the department, stating that the sign to which the opinion refers complies with the zoning resolution. Notwithstanding any inconsistent provision of this code, where, in accordance with the department's rules, the department renders an opinion, determination or decision relating to whether a sign is non-conforming or whether it is located in proximity to an arterial highway as defined by the zoning resolution, such decision, determination or opinion will be appealable to the board of standards and appeals in accordance with applicable law. If a timely appeal to such board is taken, the department shall not issue a notice of violation with respect to such sign pending a determination of such appeal by such board.

§28-302.3.6 *Public information.* The commissioner shall make all listings filed pursuant to this subdivision accessible to the public.

§28-302.4 *Display of name and registration number of outdoor advertising company.* On and after a date to be prescribed by rule, the commissioner shall require that each outdoor advertising company display, in a manner to be provided by rule, on

each sign under its control or on the building or premises where each sign under its control is located or both, (i) the name and registration number of such company and, (ii) unless a permit is not required, the permit identification number for the installation, alteration or erection of the sign pursuant to this code and, if applicable, for the maintenance of the sign pursuant to section 28-301.1.

§28-302.5 *Criminal and civil penalties for violations by outdoor advertising companies; other enforcement.* Outdoor advertising companies that violate the zoning resolution, administrative code or rules of the department shall be subject to the following provisions:

§28-302.5.1 *General.* Notwithstanding any other provision of law, an outdoor advertising company shall be liable for a civil penalty if a sign under its control has been erected, maintained, attached, affixed, painted on, or in any other manner represented on a building or premises in violation of any provision of the zoning resolution, administrative code or rules adopted pursuant thereto relating to signs.

§28-302.5.2 *Making space available.* It shall be unlawful for an outdoor advertising company to sell, lease, market, manage or otherwise make available to others for advertising purposes space on a sign that has been erected, maintained, attached, affixed, painted on or in any other manner represented on a building or premises in violation of any provision of the zoning resolution, administrative code or rules adopted pursuant thereto or to enter into any agreement for such purpose.

§28-302.5.3 *Transfer of control.* On and after a date to be provided by rule, it shall be unlawful for an outdoor advertising company to sell or otherwise transfer control of a sign or sign location or of any right of such company to sell, lease, market, manage or otherwise make space on a sign or at a sign location available to others for advertising purposes to an outdoor advertising company that is not registered in accordance with this article and the rules of the department.

§28-302.5.4 *Civil penalty.* An outdoor advertising company that violates any of the provisions of this section shall be subject to a civil penalty of, for a first violation, not more than fifteen thousand dollars and, for a second or subsequent violation, not more than twenty-five thousand dollars. Each day's continuance shall be a separate and distinct violation.

§28-302.5.5 *Criminal penalty.* Notwithstanding any inconsistent provision of law, an outdoor advertising company shall, upon being found guilty, be subject to fines or imprisonment or both pursuant to this code if a sign under its control has been erected, maintained, attached, affixed, painted on, or in any other manner represented on a building or premises in violation of any provision of the zoning resolution, administrative code or rules adopted pursuant thereto relating to signs.

§28-302.5.6 *Activity by unregistered company.* On and after a date to be provided by rule, an outdoor advertising company that engages in the outdoor advertising business or, by way of advertisement, promotion or other methods holds itself out as engaging in the outdoor advertising business without registering with the department pursuant to this chapter, or, after such registration has been revoked or not renewed pursuant to this code continues to engage in such business beyond a date specified by the commissioner in his or her determination to revoke or not renew, shall be guilty of a misdemeanor subject to a fine not to exceed five thousand dollars or a sentence of imprisonment of not more than one year or both such fine and imprisonment for each offense. In the case of a continuing violation each day's continuance shall be a separate and distinct violation. Such company shall also be liable for a civil penalty of, for a first violation, not more than fifteen thousand

dollars and, for a second or subsequent violation, not more than twenty-five thousand dollars. Each day's continuance shall be a separate and distinct violation.

§28-302.5.7 *Venue.* Civil penalties may be recovered in an action in any court of appropriate jurisdiction or in a proceeding before the environmental control board. Such board shall have the power to impose the civil penalties provided for in this section. Notwithstanding the provisions of section six hundred sixty-six of the charter, a notice of violation issued by the department pursuant to this article shall not be subject to review by the board of standards and appeals.

§28-302.5.8 *Nuisance abatement for signs under control of unregistered company.* On and after a date to be provided by rule, it shall be unlawful to erect, maintain, attach, affix, paint on, or in any other manner represent on a building or premises any sign that is under the control of an unregistered outdoor advertising company. In addition to or as an alternative to any other remedies or penalties provided under any other provision of law, the commissioner may commence a proceeding for the removal of such sign or its sign structure or both in accordance with the procedures set forth in this code for the abatement of a nuisance and any such sign and its sign structure is hereby declared to be a public nuisance pursuant thereto. All of the provisions of section 28-302.5.9 shall apply to the removal of a sign pursuant to this section except that a sign under the control of an unregistered outdoor advertising company may be removed whether or not it is in compliance with the zoning resolution, the administrative code or rules adopted pursuant thereto, and irrespective of whether it has a surface area greater than two hundred square feet.

§28-302.5.9 *Nuisance abatement for other illegal signs; procedure.* A sign with a surface area greater than two hundred square feet that is erected, maintained, attached, affixed, painted on, or in any other manner represented on a building or premises in violation of the zoning resolution, the administrative code or rules adopted pursuant thereto is hereby declared to be a public nuisance. The commissioner may, after notice and hearing, order the removal of such illegal sign or its sign structure or both, as hereinafter provided.

§28-302.5.9.1 *Notice.* The commissioner shall serve a notice of hearing with regard to the proposed nuisance abatement on the owner and mortgagee of record of the building or premises and other persons having a recorded interest in the property in the manner provided in section 28-113 of this code for the service of an order of closure. If the sign is under the control of an outdoor advertising company, as defined in section 28-302.1 of the code, and an address for such company is reasonably ascertainable, the notice shall also be served on such outdoor advertising company by mail to the last known address for such company or, if such company is registered in accordance with section 28-302.2 of the code, at the address provided to the department by the registrant.

§28-302.5.9.2 *Hearing.* The office of administrative trials and hearings shall conduct the hearing. The administrative law judge assigned to hear the matter shall submit his or her proposed findings of fact and recommended disposition to the commissioner. If based on such recommended disposition, proposed findings of fact and the record of the hearing the commissioner determines (i) that the sign has a surface area greater than two hundred square feet and, (ii) that the sign has been erected, maintained, attached, affixed, painted on, or in

any other manner represented on the building or premises in violation of the zoning resolution, the administrative code or rules adopted pursuant thereto, he or she may order the removal of the illegal sign or its sign structure or both.

§28-302.5.9.3 *Lack of knowledge no defense.* At such hearing it shall not be a defense that an owner or other person having an interest in the property lacked knowledge of or did not participate in the erection or maintenance of the illegal sign.

§28-302.5.9.4 *Posting of order.* The commissioner's order of removal shall be posted, mailed and filed in the manner provided in this code for an order of closure.

§28-302.5.9.5 *Enforcement of order.* On or after the tenth business day after the posting of such order and upon the written directive of the commissioner, police officers and authorized representatives of the department shall act upon and enforce such order by removing, covering, painting over or otherwise rendering ineffective the illegal sign or its sign structure or both. Such work shall at all times be performed by a licensed sign hanger where required by law. Nothing in this section shall be construed to prohibit an owner or other person having an interest in the property from removing or causing the removal of an illegal sign or its sign structure prior to the arrival of such enforcement officers. On and after the posting of such removal order, no further permits for signs shall be issued for such building or premises pursuant to this code and, if the sign structure is not removed, no further display shall be exhibited on such sign structure unless and until the commissioner rescinds such order. The commissioner may rescind the order if the owner or other person having an interest in the building or premises provides assurance in a form satisfactory to the commissioner that all signs erected or maintained at such building or premises will be in compliance with the zoning resolution, the administrative code or rules adopted pursuant to such provisions. If such order is rescinded, the commissioner shall, upon request of such owner, mortgagee or other person, provide a certified copy of such rescission which may be filed with the county clerk or register of the county in which such building or premises is located.

§28-302.5.9.6 *Costs.* The costs and expenses for painting over, covering, rendering ineffective or for the removal and storage of such sign and its sign structure may be recovered from the owner of the premises or, if the illegal sign is under the control of an outdoor advertising company and notice was served on such company in accordance with this section, from such outdoor advertising company. Such amounts may be recovered by the city in an action or proceeding in any court of appropriate jurisdiction and, with respect to amounts owed by an outdoor advertising company, by drawing upon any bond posted or other security provided by such company pursuant to section 28-302.2 of this code. Nothing in this section shall be construed to limit the ability of an owner to seek recovery of such costs and expenses from any other party.

§28-302.5.9.7 Lien. In addition, such costs and expenses shall constitute a lien on the land and building on which the sign was located which may be entered and enforced pursuant to the provisions of this code in the same manner as an unpaid fee.

§28-302.5.9.8 Storage and disposal. The commissioner shall adopt rules to provide for the storage and disposal of any sign or sign structure removed pursuant to this section. If the identity and address of the owner of such property is reasonably ascertainable, notice of the removal shall be sent to the owner within a reasonable period of time after the removal. If such property is not claimed within thirty days after its removal, it shall be deemed to be abandoned and may be sold at a public auction after having been advertised in the City Record and the proceeds paid into the general fund or if the commissioner determines that the property is not saleable, he or she may turn over such property to the department of sanitation for disposal. Property removed pursuant to this section shall be released to the owner or other person lawfully entitled to possession upon payment of the costs of removal and storage as set forth in the rules of the department and any fines or civil penalties imposed for the violation or, if an action or proceeding for the violation is pending in court or before the environmental control board, upon the posting of a bond or other form of security acceptable to the department in an amount which will secure the payment of such costs and any fines or civil penalties which may be imposed for the violation.

§28-302.5.9.9 Definitions. For the purposes of this section the terms "sign" and "surface area," in reference to a sign, shall be as defined under section 12-10 of the zoning resolution.

§28-302.5.9.10 Review of order. An order of the commissioner issued pursuant to this section shall be a final determination of the commissioner for purposes of review pursuant to article seventy-eight of the civil practice law and rules. Notwithstanding any inconsistent provision of paragraph (a) of subdivision six of section six hundred sixty-six of the New York city charter, such order shall not be subject to review by the board of standards and appeals.

§28-302.5.11 Franchise or concession disqualification. Notwithstanding any other provision of law to the contrary, an outdoor advertising company, or any affiliate thereof, that has been found guilty of a misdemeanor or liable for a civil penalty pursuant to this section or whose registration has been revoked pursuant to this code shall be considered ineligible for the award of any city franchise or concession, and shall be prohibited from administering any advertising program on behalf of a city franchisee or concessionaire, for a period of five years following judgment or decision.

§28-302.6 Investigations. The department may investigate any matter within the jurisdiction conferred by this chapter and shall have full power to compel the attendance, examine and take testimony under oath of such persons as it may deem necessary in relation to such investigation, and to require the production of books,

accounts, papers and other evidence relevant to such investigation. The department of investigation may, at the request of the commissioner, assist the department in any investigation conducted pursuant to this section.

CHAPTER 4
THE NEW YORK CITY PLUMBING CODE

SECTION 401
ENACTMENT AND UPDATE OF THE NEW YORK CITY PLUMBING CODE

§28-401.1 Update. No later than the third year after the effective date of this section and every third year thereafter, the commissioner shall submit to the city council proposed amendments that he or she determines should be made to this code to bring it up to date with the latest edition of the International Plumbing Code or otherwise modify the provisions thereof. In addition, prior to the submission of such proposal to the city council, such proposal shall be submitted to an advisory committee established by the commissioner pursuant to this title for review and comment.

§28-401.2 Enactment of the New York city plumbing code. The New York city plumbing code based on the 2003 edition of the International Plumbing Code published by the International Code Council, with changes that reflect the unique character of the city, is hereby adopted to read as follows:

THE NEW YORK CITY PLUMBING CODE

CHAPTER 1
ADMINISTRATION

SECTION PC 101
GENERAL

101.1 Title. *This code shall be known and may be cited as the “New York city plumbing code,” “NYCPC” or “PC”. All section numbers in this code shall be deemed to be preceded by the designation “PC”.*

101.2 Scope. *The provisions of this code shall apply to the erection, installation, alteration, repair, relocation, replacement, addition to, use or maintenance of plumbing systems. This code shall also regulate nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel gas-fired water heaters, and water heater venting systems shall be regulated by the New York city fuel gas code.*

Exceptions:

- 1. Detached one- and two-family dwellings and multiple single family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the New York city residential code.*
- 2. Plumbing systems in existing buildings undergoing repair, alteration, or additions, and change of occupancy shall be permitted to comply with the existing building provisions of the New York city building code.*
- 3. Structures on waterfront property used in conjunction with and in furtherance of waterfront commerce and/or navigation.*
- 4. Bridges, tunnels or subways or structures appurtenant thereto.*

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

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

SECTION PC 102 APPLICABILITY

102.1 General. *The provisions of this code shall apply to all matters affecting or relating to structures, as set forth in Section PC 101. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.*

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

102.3 Maintenance. *All plumbing systems, materials and appurtenances, both existing and new, and all parts thereof, shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition. All devices or safeguards required by this code shall be maintained in compliance with this code. The owner or the owner's designated agent shall be responsible for maintenance of plumbing systems. To determine compliance with this provision, the commissioner shall have the authority to require any plumbing system to be inspected.*

102.4 through 102.7 Reserved.

102.8 Referenced standards. *The standards referenced in this code shall be those that are listed in Chapter 13 and such standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall be the minimum requirements.*

102.9 Requirements not covered by code. *Any requirements necessary for the strength, stability or proper operation of an existing or proposed plumbing system, or for the public safety, health and general welfare, not specifically covered by this code shall be determined by the commissioner.*

SECTION PC 107 INSPECTIONS AND TESTING

107.1 Required inspections and testing. *In addition to the requirements of Section 28-127, the holder of the permit shall be responsible for the scheduling of the following inspections:*

1. *Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before any backfill is put in place.*
2. *Rough-in inspection shall be made after the roof, framing, fireblocking, firestopping, draftstopping and bracing is in place and all sanitary, storm and water distribution piping is roughed-in, and prior to the installation of wall or ceiling membranes.*
3. *Final inspection shall be made after the building is complete, all plumbing fixtures are in place and properly connected, and the structure is ready for*

occupancy.

107.1.1 through 107.1.2 Reserved.

107.2 Special inspections. *Special inspections of alternative engineered design plumbing systems shall be conducted in accordance with Sections 107.2.1 and 107.2.2.*

107.2.1 Periodic inspection. *The registered design professional or designated inspector shall periodically inspect and observe the alternative engineered design to determine that the installation is in accordance with the approved construction documents. All discrepancies shall be brought to the immediate attention of the plumbing contractor for correction. Records shall be kept of all inspections.*

107.2.2 Written report. *The registered design professional shall submit a final report in writing to the commissioner upon completion of the installation, certifying that the alternative engineered design conforms to the approved or accepted construction documents.*

107.3 Testing. *Plumbing work and systems shall be tested as required in Section PC 312 and in accordance with Sections 107.3.1 through 107.3.3. Tests shall be made by the permit holder and observed by the commissioner.*

107.3.1 New, altered, extended or repaired systems. *New plumbing systems and parts of existing systems that have been altered, extended or repaired shall be tested as prescribed herein to disclose leaks and defects, except that testing is not required in the following cases:*

1. *In any case that does not include addition to, replacement, alteration or relocation of any water supply, drainage or vent piping.*
2. *In any case where plumbing equipment is set up temporarily for exhibition purposes.*

107.3.2 Equipment, material and labor for tests. *All equipment, material and labor required for testing a plumbing system or part thereof shall be furnished by the permit holder.*

107.3.3 Reinspection and testing. *Where any work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this code. The work or installation shall then be resubmitted to the commissioner for inspection and testing.*

107.4 Reserved.

107.5 Temporary connection. *The commissioner shall have the authority to authorize the temporary connection of the building or system to the utility source for the purpose of testing plumbing systems or for use under a temporary certificate of occupancy.*

**CHAPTER 2
DEFINITIONS**

**SECTION PC 201
GENERAL**

201.1 Scope. *Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.*

201.2 Interchangeability. *Words stated in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural the singular.*

201.3 Terms defined in other codes. *Where terms are not defined in this code and are defined in the New York city building code, New York city fire code, New York city*

electrical code, New York city fuel gas code or the New York city mechanical code, such terms shall have the meanings ascribed to them as in those codes.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION PC 202 GENERAL DEFINITIONS

ACCEPTED ENGINEERING PRACTICE. That which conforms to accepted principles, tests or standards of nationally recognized technical or scientific authorities.

ACCESS (TO). That which enables a fixture, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel, door or similar obstruction (see "Ready access").

ACCESS COVER. A removable plate, usually secured by bolts or screws, to permit access to a pipe or pipe fitting for the purposes of inspection, repair or cleaning.

ADAPTER FITTING. An approved connecting device that suitably and properly joins or adjusts pipes and fittings which do not otherwise fit together.

AIR BREAK (Drainage System). A piping arrangement in which a drain from a fixture, appliance or device discharges indirectly into another fixture, receptacle or interceptor at a point below the flood level rim and above the trap seal.

AIR GAP (Drainage System). The unobstructed vertical distance through the free atmosphere between the outlet of the waste pipe and the flood level rim of the receptacle into which the waste pipe is discharging.

AIR GAP (Water Distribution System). The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood level rim of the receptacle.

ALTERNATIVE ENGINEERED DESIGN. A plumbing system that performs in accordance with the intent of Chapters 3 through 12 and provides an equivalent level of performance for the protection of public health, safety and welfare. The system design is not specifically regulated by Chapters 3 through 12.

ANCHORS. See "Supports."

ANTISIPHON. A term applied to valves or mechanical devices that eliminate siphonage.

APPROVED. Accepted or approved in accordance with a method prescribed in Section 28-104 of this title, except as otherwise indicated in the text.

APPROVED AGENCY. An established and recognized agency approved by the commissioner and that is regularly engaged in conducting tests or furnishing inspection services.

AREA DRAIN. A receptacle designed to collect surface or storm water from an open area.

ASPIRATOR. A fitting or device supplied with water or other fluid under positive pressure that passes through an integral orifice or constriction, causing a vacuum. Aspirators are also referred to as suction apparatus, and are similar in operation to an ejector.

BACKFLOW. The undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources.

Backpressure, low head. A pressure less than or equal to 4.33 psi (29.88 kPa) or the pressure exerted by a 10-foot (3048 mm) column of water.

Backsiphonage. The backflow of potentially contaminated water into the potable water system as a result of the pressure in the potable water system falling below atmospheric pressure of the plumbing fixtures, pools, tanks or vats connected to the potable water distribution piping.

Backwater valve. A device or valve installed in the building drain or sewer pipe where a sewer is subject to backflow, and which prevents drainage or waste from backing up into a low level or fixtures and causing a flooding condition.

Drainage. A reversal of flow in the drainage system.

Water supply system. The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply from any source except the intended source.

BACKFLOW CONNECTION. Any arrangement whereby backflow is possible.

BACKFLOW PREVENTER. A device or means to prevent backflow.

BALL COCK. See "Fill Valve."

BASE FLOOD ELEVATION. A reference point, determined in accordance with the building code, based on the depth or peak elevation of flooding, including wave height, which has a 1 percent (100-year flood) or greater chance of occurring in any given year.

BATHROOM GROUP. A group of fixtures consisting of a water closet, lavatory, bathtub or shower, including or excluding a bidet, an emergency floor drain or both. Such fixtures are located together in the same room.

BEDPAN STEAMER OR BOILER. A fixture utilized for scalding bedpans or urinals by direct application of steam or boiling water.

BEDPAN WASHER AND STERILIZER. A fixture designed to wash bedpans and to flush the contents into the sanitary drainage system. Included are fixtures of this type that provide for disinfecting utensils by scalding with steam or hot water.

BEDPANWASHER HOSE. A device supplied with hot and cold water and located adjacent to a water closet or clinical sink to be utilized for cleansing bedpans.

BRANCH. Any part of the piping system that extends to fixtures on two or less consecutive floors except a riser, main or stack.

BRANCH INTERVAL. A distance along a soil or waste stack corresponding in general to a story height, but not less than 8 feet (2438 mm), within which the horizontal branches from one floor or story of a structure are connected to the stack.

BRANCH VENT. A vent connecting one or more individual vents with a vent stack or stack vent.

BUILDING. Any structure occupied or intended for supporting or sheltering any occupancy.

BUILDING DRAIN. That part of the lowest piping of a drainage system that receives the discharge from soil, waste and other drainage pipes inside and that extends 5 feet (1524 mm) in developed length of pipe beyond the exterior walls of the building and conveys the drainage to the building sewer.

Combined. A building drain that conveys both sewage and storm water or other drainage.

Sanitary. A building drain that conveys sewage only.

Storm. A building drain that conveys storm water or other drainage, but not sewage.

BUILDING SEWER. That part of the drainage system that extends from the end of the building drain and conveys the discharge to a public sewer, private sewer, individual sewage disposal system or other point of disposal.

Combined. A building sewer that conveys both sewage and storm water or other

drainage.

Sanitary. *A building sewer that conveys sewage only.*

Storm. *A building sewer that conveys storm water or other drainage, but not sewage.*

BUILDING SUBDRAIN. *That portion of a drainage system that does not drain by gravity into the building sewer.*

BUILDING TRAP. *A device or fitting, without joints within the water seal, installed in the building drain to prevent circulation of air between the drainage system of the building and the building sewer.*

CIRCUIT VENT. *A vent that connects to a horizontal drainage branch and vents two traps to a maximum of eight traps or trapped fixtures connected into a battery.*

CISTERN. *A covered tank for storing rainwater to be utilized for purposes other than in the potable water supply.*

CLEANOUT. *An access opening in the drainage system utilized for the removal of obstructions. Types of cleanouts include a removable plug or cap, and a removable fixture or fixture trap.*

CODE. *The New York city plumbing code, subsequent amendments thereto, or any rules of the commissioner adopted pursuant thereto.*

COMMISSIONER. *The commissioner of buildings of the city of New York, or his or her duly authorized representative.*

COMBINATION FIXTURE. *A fixture combining one sink and laundry tray or a two- or three-compartment sink or laundry tray in one unit.*

COMBINATION WASTE AND VENT SYSTEM. *A specially designed system of waste piping embodying the horizontal wet venting of one or more sinks or floor drains by means of a common waste and vent pipe adequately sized to provide free movement of air above the flow line of the drain.*

COMBINED BUILDING DRAIN. *See "Building drain, combined."*

COMBINED BUILDING SEWER. *See "Building sewer, combined."*

COMMON VENT. *A vent connecting at the junction of two fixture drains or to a fixture branch and serving as a vent for both fixtures.*

CONCEALED FOULING SURFACE. *Any surface of a plumbing fixture which is not readily visible and is not scoured or cleansed with each fixture operation.*

CONDUCTOR. *A pipe inside the building that conveys storm water from the roof to a storm or combined building drain.*

CONSTRUCTION DOCUMENTS. *All of the written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of the project necessary for obtaining a building permit. The construction drawings shall be drawn to an appropriate scale.*

CONTAMINATION. *An impairment of the quality of the potable water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids or waste.*

CRITICAL LEVEL (C-L). *An elevation (height) reference point that determines the minimum height at which a backflow preventer or vacuum breaker is installed above the flood level rim of the fixture or receptor served by the device. The critical level is the elevation level below which there is a potential for backflow to occur. If the critical level marking is not indicated on the device, the bottom of the device shall constitute the critical level.*

CROSS CONNECTION. *Any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other*

either water of unknown or questionable safety or steam, gas or chemical, whereby there exists the possibility for flow from one system to the other, with the direction of flow depending on the pressure differential between the two systems (see "Backflow").

DEAD END. A branch leading from a soil, waste or vent pipe; a building drain; or a building sewer, and terminating at a developed length of 2 feet (610 mm) or more by means of a plug, cap or other closed fitting.

DEPTH OF WATER SEAL. The depth of water that would have to be removed from a full trap before air could pass through the trap.

DESIGN FLOOD ELEVATION. The elevation of the "design flood," including wave height, relative to the datum specified on the City's legally designated flood hazard map.

DEVELOPED LENGTH. The length of a pipeline measured along the centerline of the pipe and fittings.

DISCHARGE PIPE. A pipe that conveys the discharges from plumbing fixtures or appliances.

DRAIN. Any pipe that carries wastewater or water-borne wastes in a building drainage system.

DRAINAGE FITTINGS. Type of fitting or fittings utilized in the drainage system.

DRAINAGE FIXTURE UNIT

Drainage (dfu). A measure of the probable discharge into the drainage system by various types of plumbing fixtures. The drainage fixture-unit value for a particular fixture depends on its volume rate of drainage discharge, on the time duration of a single drainage operation and on the average time between successive operations.

DRAINAGE SYSTEM. Piping within a public or private premise that conveys sewage, rainwater or other liquid wastes to a point of disposal. A drainage system does not include the mains of a public sewer system or a private or public sewage treatment or disposal plant.

Building gravity. A drainage system that drains by gravity into the building sewer.

Sanitary. A drainage system that carries sewage and excludes storm, surface and ground water.

Storm. A drainage system that carries rainwater, surface water, subsurface water and similar liquid wastes.

EFFECTIVE OPENING. The minimum cross-sectional area at the point of water supply discharge, measured or expressed in terms of the diameter of a circle or, if the opening is not circular, the diameter of a circle of equivalent cross-sectional area. For faucets and similar fittings, the effective opening shall be measured at the smallest orifice in the fitting body or in the supply piping to the fitting.

EMERGENCY FLOOR DRAIN. A floor drain that does not receive the discharge of any drain or indirect waste pipe, and that protects against damage from accidental spills, fixture overflows and leakage.

ESSENTIALLY NONTOXIC TRANSFER FLUIDS. Fluids having a Gosselin rating of 1, including propylene glycol; mineral oil; polydimethylsiloxane; hydrochlorofluorocarbon, chlorofluorocarbon and carbon refrigerants; and FDA-approved boiler water additives for steam boilers.

ESSENTIALLY TOXIC TRANSFER FLUIDS. Soil, waste or gray water and fluids having a Gosselin rating of 2 or more including ethylene glycol, hydrocarbon oils, ammonia refrigerants and hydrazine.

EXISTING INSTALLATIONS. Any plumbing system regulated by this code that was legally installed prior to the effective date of this code, or for which a permit to install has been issued.

FAUCET. A valve end of a water pipe through which water is drawn from or held within the pipe.

FILL VALVE. A water supply valve, opened or closed by means of a float or similar device, utilized to supply water to a tank. An antisiphon fill valve contains an antisiphon device in the form of an approved air gap or vacuum breaker that is an integral part of the fill valve unit and that is positioned on the discharge side of the water supply control valve.

FIXTURE. See "Plumbing fixture."

FIXTURE BRANCH. A drain serving two or more fixtures that discharges to another drain or to a stack.

FIXTURE DRAIN. The drain from the trap of a fixture to a junction with any other drain pipe.

FIXTURE FITTING

Supply fitting. A fitting that controls the volume and/or directional flow of water and is either attached to or accessible from a fixture, or is used with an open or atmospheric discharge.

Waste fitting. A combination of components that conveys the sanitary waste from the outlet of a fixture to the connection to the sanitary drainage system.

FIXTURE SUPPLY. The water supply pipe connecting a fixture to a branch water supply pipe or directly to a main water supply pipe.

FLOOD LEVEL RIM. The edge of the receptacle from which water overflows.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any given year.
2. The area designated as a flood hazard area on a community's flood hazard map or as otherwise legally designated.

FLOW PRESSURE. The pressure in the water supply pipe near the faucet or water outlet while the faucet or water outlet is wide open and flowing.

FLUSH TANK. A tank designed with a ball cock and flush valve to flush the contents of the bowl or usable portion of the fixture.

FLUSHOMETER TANK. A device integrated within an air accumulator vessel that is designed to discharge a predetermined quantity of water to fixtures for flushing purposes.

FLUSHOMETER VALVE. A valve attached to a pressurized water supply pipe and so designed that when activated it opens the line for direct flow into the fixture at a rate and quantity to operate the fixture properly, and then gradually closes to reseal fixture traps and minimize water hammer.

GREASE INTERCEPTOR. A passive interceptor whose rated flow exceeds 50 gpm (189 L/m).

GREASE-LADEN WASTE. Effluent discharge that is produced from food processing, food preparation or other sources where grease, fats and oils enter automatic dishwasher prerinse stations, sinks or other appurtenances.

GREASE TRAP. A passive interceptor whose rated flow is 50 gpm (189 L/m) or less.

HANGERS. See "Supports."

HORIZONTAL BRANCH DRAIN. A drainage branch pipe extending laterally from a soil or waste stack or building drain, with or without vertical sections or

branches, that receives the discharge from two or more fixture drains or branches and conducts the discharge to the soil or waste stack or to the building drain.

HORIZONTAL PIPE. Any pipe or fitting that makes an angle of less than 45 degrees (0.79 rad) with the horizontal.

HOT WATER. Water at a temperature greater than 110°F (43°C).

HOUSE TRAP. See "Building trap."

INDIRECT WASTE PIPE. A waste pipe that does not connect directly with the drainage system, but that discharges into the drainage system through an air break or air gap into a trap, fixture, receptor or interceptor.

INDIVIDUAL SEWAGE DISPOSAL SYSTEM. A system for disposal of domestic sewage by means of a septic tank, or mechanical treatment, designed for utilization apart from a public sewer to serve a single establishment or building.

INDIVIDUAL VENT. A pipe installed to vent a fixture trap and connects with the vent system above the fixture served or terminates in the open air.

INDIVIDUAL WATER SUPPLY. A water supply that serves one or more families, and that is not an approved public water supply.

INTERCEPTOR. A device designed and installed to separate and retain for removal, by automatic or manual means, deleterious, hazardous or undesirable matter from normal wastes, while permitting normal sewage or wastes to discharge into the drainage system by gravity.

JOINT

Expansion. A loop, return bend, return offset or manufactured device that provides for the expansion and contraction in a piping system.

Flexible. Any joint between two pipes that permits one pipe to be deflected or moved without movement or deflection of the other pipe.

Mechanical. See "Mechanical joint."

Slip. A type of joint made by means of a washer or a special type of packing compound in which one pipe is slipped into the end of an adjacent pipe.

LEAD-FREE PIPE AND FITTINGS. Containing not more than 3.0-percent lead.

LEAD-FREE SOLDER AND FLUX. Containing not more than 0.2-percent lead.

LEADER. A drainage pipe for conveying storm water from roof or gutter drains to an approved means of disposal.

LOCAL VENT STACK. A vertical pipe to which connections are made from the fixture side of traps and through which vapor or foul air is removed from the fixture or device utilized on bedpan washers.

MACERATING TOILET SYSTEMS. An assembly consisting of a water closet and sump with a macerating pump that is designed to collect, grind and pump wastes from the water closet and up to two other fixtures connected to the sump.

MAIN. The principal pipe artery to which branches are connected.

MANIFOLD. See "Plumbing appurtenance."

MECHANICAL JOINT. A connection between pipes, fittings, or pipes and fittings that is not screwed, caulked, threaded, soldered, solvent cemented, brazed or welded. A joint in which compression is applied along the centerline of the pieces being joined. In some applications, the joint is part of a coupling, fitting or adapter.

MEDICAL GAS SYSTEM. The complete system to convey medical gases for direct patient application from central supply systems (bulk tanks, manifolds and medical air compressors), with pressure and operating controls, alarm warning systems, related components and piping networks extending to station outlet valves at patient use points.

MEDICAL VACUUM SYSTEMS. A system consisting of central-vacuum-

producing equipment with pressure and operating controls, shutoff valves, alarm-warning systems, gauges and a network of piping extending to and terminating with suitable station inlets at locations where patient suction may be required.

NONPOTABLE WATER. Water not safe for drinking, personal or culinary utilization.

OCCUPANCY. The purpose for which a building or portion thereof is utilized or occupied.

OFFSET. A combination of approved bends that makes two changes in direction bringing one section of the pipe out of line but into a line parallel with the other section.

OPEN AIR. Outside the structure.

PLUMBING. The practice, materials and fixtures utilized in the installation, maintenance, extension and alteration of all piping, fixtures, plumbing appliances, plumbing appurtenances, gas piping and limited fire protection as defined in Section 28-201.3, within or adjacent to any structure, in connection with sanitary drainage or storm drainage facilities; venting systems; and public or private water supply systems.

PLUMBING APPLIANCE. Any one of a special class of plumbing fixtures intended to perform a special function. Included are fixtures having the operation or control dependent on one or more energized components, such as motors, controls, heating elements, or pressure- or temperature-sensing elements. Such fixtures are manually adjusted or controlled by the owner or operator, or are operated automatically through one or more of the following actions: a time cycle, a temperature range, a pressure range, a measured volume or weight.

PLUMBING APPURTENANCE. A manufactured device, prefabricated assembly or an on-the-job assembly of component parts that is an adjunct to the basic piping system and plumbing fixtures. An appurtenance demands no additional water supply and does not add any discharge load to a fixture or to the drainage system.

PLUMBING FIXTURE. A receptacle or device that is either permanently or temporarily connected to the water distribution system of the premises and demands a supply of water therefrom; discharges wastewater, liquid-borne waste materials or sewage either directly or indirectly to the drainage system of the premises; or requires both a water supply connection and a discharge to the drainage system of the premises.

PLUMBING SYSTEM. Includes the water supply and distribution pipes; plumbing fixtures and traps; water-treating or water-using equipment; soil, waste and vent pipes; and sanitary and storm sewers and building drains; in addition to their respective connections, devices and appurtenances within a structure or premises.

POTABLE WATER. Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming to the bacteriological and chemical quality requirements of the Public Health Service Drinking Water Standards or the regulations of the public health authority having jurisdiction.

PRIVATE. In the classification of plumbing fixtures, "private" applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual.

PUBLIC OR PUBLIC UTILIZATION. In the classification of plumbing fixtures, "public" applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars, public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted.

PUBLIC WATER MAIN. A water supply pipe for public utilization controlled by

public authority.

QUICK-CLOSING VALVE. A valve or faucet that closes automatically when released manually or that is controlled by a mechanical means for fast-action closing.

READY ACCESS. That which enables a fixture, appliance or equipment to be directly reached without requiring the removal or movement of any panel, door or similar obstruction and without the use of a portable ladder, step stool or similar device.

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER. A backflow prevention device consisting of two independently acting check valves, internally force-loaded to a normally closed position and separated by an intermediate chamber (or zone) in which there is an automatic relief means of venting to the atmosphere, internally loaded to a normally open position between two tightly closing shutoff valves and with a means for testing for tightness of the checks and opening of the relief means.

REGISTERED DESIGN PROFESSIONAL. An architect or engineer as defined in Section 28-101.5 of this code.

RELIEF VALVE

Pressure relief valve. A pressure-actuated valve held closed by a spring or other means and designed to relieve pressure automatically at the pressure at which such valve is set.

Temperature and pressure relief (T&P) valve. A combination relief valve designed to function as both a temperature relief and a pressure relief valve.

Temperature relief valve. A temperature-actuated valve designed to discharge automatically at the temperature at which such valve is set.

RELIEF VENT. A vent whose primary function is to provide circulation of air between drainage and vent systems.

RIM. An unobstructed open edge of a fixture.

RISER. A water supply pipe that extends one full story or more to convey water to branches or to a group of fixtures.

ROOF DRAIN. A drain installed to receive water collecting on the surface of a roof and to discharge such water into a leader or a conductor.

ROUGH-IN. Parts of the plumbing system that are installed prior to the installation of fixtures. This includes drainage, water supply, vent piping and the necessary fixture supports and any fixtures that are built into the structure.

SELF-CLOSING FAUCET. A faucet containing a valve that automatically closes upon deactivation of the opening means.

SEPARATOR. See "Interceptor."

SEWAGE. Any liquid waste containing animal or vegetable matter in suspension or solution, including liquids containing chemicals in solution.

SEWAGE EJECTORS. Mechanical devices used to pump or eject sewage.

SEWER

Building sewer. See "Building sewer."

Public sewer. A common sewer directly controlled by public authority.

Sanitary sewer. A sewer that carries sewage and excludes storm, surface and ground water.

Storm sewer. A sewer that conveys rainwater, surface water, subsurface water and similar liquid wastes.

SLOPE. The fall (pitch) of a line of pipe in reference to a horizontal plane. In drainage, the slope is expressed as the fall in units vertical per units horizontal (percent) for a length of pipe.

SOIL PIPE. A pipe that conveys sewage containing fecal matter to the building

drain or building sewer.

STACK. A general term for any vertical line of soil, waste, vent or inside conductor piping that extends through at least one story with or without offsets.

STACK VENT. The extension of a soil or waste stack above the highest horizontal drain connected to the stack.

STACK VENTING. A method of venting a fixture or fixtures through the soil or waste stack.

STERILIZER

Boiling type. A boiling-type sterilizer is a fixture of a nonpressure type utilized for boiling instruments, utensils or other equipment for disinfection. These devices are portable or are connected to the plumbing system.

Instrument. A device for the sterilization of various instruments.

Pressure (autoclave). A pressure vessel fixture designed to utilize steam under pressure for sterilizing.

Pressure instrument washer sterilizer. A pressure instrument washer sterilizer is a pressure vessel fixture designed to both wash and sterilize instruments during the operating cycle of the fixture.

Utensil. A device for the sterilization of utensils as utilized in health care services.

Water. A water sterilizer is a device for sterilizing water and storing sterile water.

STERILIZER VENT. A separate pipe or stack, indirectly connected to the building drainage system at the lower terminal, that receives the vapors from nonpressure sterilizers, or the exhaust vapors from pressure sterilizers, and conducts the vapors directly to the open air. Also called vapor, steam, atmospheric or exhaust vent.

STORM DRAIN. See "Drainage system, storm."

STRUCTURE. That which is built or constructed or a portion thereof.

SUBSOIL DRAIN. A drain that collects subsurface water or seepage water and conveys such water to a place of disposal.

SUMP. A tank or pit that receives clear liquid waste, located below the normal grade of the gravity system and that must be emptied by mechanical means.

SUMP PUMP. An automatic water pump for the removal of drainage, except sewage, from a sump, pit or low point.

SUMP VENT. A vent from pneumatic sewage ejectors, or similar equipment, that terminates separately to the open air.

SUPPORTS. Devices for supporting and securing pipe, fixtures and equipment.

SWIMMING POOL. Any structure, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing having a depth of 2 feet (610 mm) or more at any point.

TEMPERED WATER. Water having a temperature range between 85°F (29°C) and 110°F (43°C).

THIRD-PARTY CERTIFICATION AGENCY. An approved agency operating a product or material certification system that incorporates initial product testing, assessment and surveillance of a manufacturer's quality control system.

THIRD-PARTY CERTIFIED. Certification obtained by the manufacturer indicating that the function and performance characteristics of a product or material have been determined by testing and ongoing surveillance by an approved third-party certification agency. Assertion of certification is in the form of identification in accordance with the requirements of the third-party certification agency.

THIRD-PARTY TESTED. Procedure by which an approved testing laboratory provides documentation that a product, material or system conforms to specified requirements.

TRAP. A fitting or device that provides a liquid seal to prevent the emission of sewer gases without materially affecting the flow of sewage or wastewater through the trap.

TRAP SEAL. The vertical distance between the weir and the top of the dip of the trap.

UNSTABLE GROUND. Earth that does not provide a uniform bearing for the barrel of the sewer pipe between the joints at the bottom of the pipe trench.

VACUUM. Any pressure less than that exerted by the atmosphere.

VACUUM BREAKER. A type of backflow preventer installed on openings subject to normal atmospheric pressure that prevents backflow by admitting atmospheric pressure through ports to the discharge side of the device.

VENT PIPE. See "Vent system."

VENT STACK. A vertical vent pipe installed primarily for the purpose of providing circulation of air to and from any part of the drainage system.

VENT SYSTEM. A pipe or pipes installed to provide a flow of air to or from a drainage system, or to provide a circulation of air within such system to protect trap seals from siphonage and backpressure.

VERTICAL PIPE. Any pipe or fitting that makes an angle of 45 degrees (0.79 rad) or more with the horizontal.

WASTE. The discharge from any fixture, appliance, area or appurtenance that does not contain fecal matter.

WASTE PIPE. A pipe that conveys only waste.

WATER-HAMMER ARRESTOR. A device utilized to absorb the pressure surge (water hammer) that occurs when water flow is suddenly stopped in a water supply system.

WATER HEATER. Any heating appliance or equipment that heats potable water and supplies such water to the potable hot water distribution system.

WATER MAIN. A water supply pipe or system of pipes, installed and maintained by a city, township, county, public utility company or other public entity, on public property, in the street or in an approved dedicated easement of public or community use.

WATER OUTLET. A discharge opening through which water is supplied to a fixture, into the atmosphere (except into an open tank that is part of the water supply system), to a boiler or heating system, or to any devices or equipment requiring water to operate but which are not part of the plumbing system.

WATER PIPE

Water distribution pipe. A pipe within the structure or on the premises that conveys water from the water service pipe, or from the meter when the meter is at the structure, to the points of utilization.

Water service pipe. The pipe from the water main or other source of potable water supply, or from the meter when the meter is at the public right of way, to the water distribution system of the building served.

WATER SUPPLY SYSTEM. The water service pipe, water distribution pipes, and the necessary connecting pipes, fittings, control valves and all appurtenances in or adjacent to the structure or premises.

WELL.

Bored. A well constructed by boring a hole in the ground with an auger and installing a casing.

Drilled. A well constructed by making a hole in the ground with a drilling machine of any type and installing casing and screen.

Driven. A well constructed by driving a pipe in the ground. The drive pipe is usually fitted with a well point and screen.

Dug. A well constructed by excavating a large-diameter shaft and installing a casing.

WHIRLPOOL BATHTUB. A plumbing appliance consisting of a bathtub fixture that is equipped and fitted with a circulating piping system designed to accept, circulate and discharge bathtub water upon each use.

YOKE VENT. A pipe connecting upward from a soil or waste stack to a vent stack for the purpose of preventing pressure changes in the stacks.

CHAPTER 3 GENERAL REGULATIONS

SECTION PC 301 GENERAL

301.1 Scope. The provisions of this chapter shall govern the general regulations regarding the installation of plumbing not specific to other chapters.

301.2 System installation. Plumbing shall be installed with due regard to preservation of the strength of structural members and prevention of damage to walls and other surfaces through fixture usage.

301.3 Connections to the sanitary drainage system. All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent the indirect waste systems required by Chapter 8.

Exception: For water conservation systems in accordance with Appendix C herein.

301.4 Connections to water supply. Every plumbing fixture, device or appliance requiring or using water for its proper operation shall be directly or indirectly connected to the water supply system in accordance with the provisions of this code.

301.5 Pipe, tube and fitting sizes. Unless otherwise specified, the pipe, tube and fitting sizes specified in this code are expressed in nominal or standard sizes as designated in the referenced material standards.

301.6 Prohibited locations. Plumbing systems shall not be located in an elevator shaft or in an elevator equipment room.

Exception: Sump pumps and floor drains indirectly connected to the plumbing system shall be permitted at the base of the shaft.

301.7 Conflicts. Where conflicts between this code and the conditions of the listing or the manufacturer's installation instructions occur, the provisions of this code apply.

Exception: Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and manufacturer's installation instructions shall apply.

SECTION PC 302 EXCLUSION OF MATERIALS DETRIMENTAL TO THE SEWER SYSTEM

302.1 Detrimental or dangerous materials. Ashes, cinders or rags; flammable, poisonous or explosive liquids or gases; oil, grease or any other insoluble material

capable of obstructing, damaging or overloading the building drainage or sewer system, or capable of interfering with the normal operation of the sewage treatment processes, shall not be deposited, by any means, into such systems.

302.2 Industrial wastes. Waste products from manufacturing or industrial operations shall not be introduced into the public sewer until it has been determined by the city department of environmental protection that the introduction thereof will not damage the public sewer system or interfere with the functioning of the sewage treatment plant.

SECTION PC 303 MATERIALS

303.1 Identification. Each length of pipe and each pipe fitting, trap, fixture, material and device utilized in a plumbing system shall bear the identification of the manufacturer.

303.2 Installation of materials. All materials used shall be installed in strict accordance with the standards under which the materials are accepted and approved. In the absence of such installation procedures, the manufacturer's installation instructions shall be followed. Where the requirements of referenced standards or manufacturer's installation instructions do not conform to minimum provisions of this code, the provisions of this code shall apply.

303.3 Plastic pipe, fittings and components. Where permitted by this code, plastic pipe, fittings and components shall be third-party certified as conforming to NSF 14.

303.4 Third-party testing and certification. All plumbing products and materials shall comply with the referenced standards, specifications and performance criteria of this code and shall be identified in accordance with Section 303.1. When required by Table 303.4, plumbing products and materials shall either be tested by an approved third-party testing agency or certified by an approved third-party certification agency.

**TABLE 303.4
PRODUCTS AND MATERIALS REQUIRING THIRD-PARTY TESTING AND
THIRD-PARTY CERTIFICATION**

PRODUCT OR MATERIAL	THIRD-PARTY CERTIFIED	THIRD-PARTY TESTED
Portable water supply system components and potable water fixture fittings	<i>Required</i>	—
Sanitary drainage and vent system components	<i>Plastic pipe, fittings and pipe-related components</i>	<i>All others</i>
Waste fixture fittings	<i>Plastic pipe, fittings and pipe-related components</i>	<i>All others</i>
Storm drainage system components	<i>Plastic pipe, fittings and pipe-related components</i>	<i>All others</i>
Plumbing fixtures	—	<i>Required</i>
Plumbing appliances	<i>Required</i>	—
Backflow prevention devices	<i>Required</i>	—
Water distribution system safety devices	<i>Required</i>	—
Special waste system components	—	<i>Required</i>
Subsoil drainage system components	—	<i>Required</i>

**SECTION PC 304
RODENT PROOFING**

304.1 General. Plumbing systems shall be designed and installed in accordance with Sections 304.2 and 304.4 to prevent rodents from entering structures.

304.2 Strainer plates. All strainer plates on drain inlets shall be designed and installed so that all openings are not greater than 0.5 inch (12.7 mm) in least dimension.

304.3 Reserved.

304.4 Openings for pipes. In or on structures where openings have been made in walls, floors or ceilings for the passage of pipes, such openings shall be closed and protected in an approved manner.

**SECTION PC 305
PROTECTION OF PIPES AND PLUMBING SYSTEM COMPONENTS**

305.1 Corrosion. Pipes passing through concrete or cinder walls and floors or other corrosive material shall be protected against external corrosion by a protective sheathing or wrapping or other means that will withstand any reaction from the lime and acid of concrete, cinder or other corrosive material. Sheathing or wrapping shall allow for expansion and contraction of piping to prevent any rubbing action. Minimum thickness of sheathing or wrapping material shall be 0.025 inch (0.64 mm).

305.2 Breakage. Pipes passing through or under walls shall be protected from breakage.

305.3 Stress and strain. Piping in a plumbing system shall be installed so as to prevent strains and stresses that exceed the structural strength of the pipe. Where necessary, provisions shall be made to protect piping from damage resulting from expansion, contraction and structural settlement.

305.4 Sleeves. Annular spaces between sleeves and pipes shall be filled or tightly caulked in an approved manner. Annular spaces between sleeves and pipes in fire-resistance-rated assemblies shall be filled or tightly caulked in accordance with the New York city building code.

305.5 Pipes through or under footings or foundation walls. Any pipe that passes under a footing or through a foundation wall shall be provided with a relieving arch, or a pipe sleeve pipe shall be built into the foundation wall. The sleeve shall be two pipe sizes greater than the pipe passing through the wall.

305.6 Freezing. Water, soil and waste pipes shall not be installed outside of a building, in attics or crawl spaces, concealed in outside walls, or in any other place subjected to freezing temperature unless adequate provision is made to protect such pipes from freezing by insulation or heat or both. Exterior water supply system piping shall be installed not less than 48 inches (1219 mm) below grade.

305.6.1 Sewer depth. Building sewers that connect to private sewage disposal systems shall be a minimum of 36 inches (914 mm) below finished grade at the point of septic tank connection. Building sewers shall be a minimum of 36 inches (914 mm) below grade.

305.7 Waterproofing of openings. Joints at the roof and around vent pipes, shall be made water tight by the use of lead, copper, galvanized steel, aluminum, plastic or other approved flashings or flashing material. Exterior wall openings shall be made water tight.

305.8 Protection against physical damage. In concealed locations where piping,

other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1.5 inches (38 mm) from the nearest edge of the member, the pipe shall be protected by shield plates. Protective shield plates shall be a minimum of 0.062-inch-thick (1.6 mm) steel, shall cover the area of the pipe where the member is notched or bored, and shall extend a minimum of 2 inches (51 mm) above sole plates and below top plates.

305.9 Protection of components of plumbing system. Components of a plumbing system installed along alleyways, driveways, parking garages or other locations exposed to damage shall be recessed into the wall or otherwise protected in an approved manner.

SECTION PC 306

TRENCHING, EXCAVATION AND BACKFILL

306.1 Support of piping. Buried piping shall be supported throughout its entire length.

306.2 Trenching and bedding. Where trenches are excavated such that the bottom of the trench forms the bed for the pipe, solid and continuous load-bearing support shall be provided between joints. Bell holes, hub holes and coupling holes shall be provided at points where the pipe is joined. Such pipe shall not be supported on blocks to grade. In instances where the materials manufacturer's installation instructions are more restrictive than those prescribed by the code, the material shall be installed in accordance with the more restrictive requirement.

306.2.1 Overexcavation. Where trenches are excavated below the installation level of the pipe such that the bottom of the trench does not form the bed for the pipe, the trench shall be backfilled to the installation level of the bottom of the pipe with sand or fine gravel placed in layers of 6 inches (152 mm) maximum depth and such backfill shall be compacted after each placement.

306.2.2 Rock removal. Where rock is encountered in trenching, the rock shall be removed to a minimum of 3 inches (76 mm) below the installation level of the bottom of the pipe, and the trench shall be backfilled to the installation level of the bottom of the pipe with sand tamped in place so as to provide uniform load-bearing support for the pipe between joints. The pipe, including the joints, shall not rest on rock at any point.

306.2.3 Soft load-bearing materials. If soft materials of poor load-bearing quality are found at the bottom of the trench, pipe shall be hung from slab above.

306.3 Backfilling. Backfill shall be free from discarded construction material and debris. Loose earth free from rocks, broken concrete and frozen chunks shall be placed in the trench in 6 inch (152 mm) layers and tamped in place until the crown of the pipe is covered by 12 inches (305 mm) of tamped earth. The backfill under and beside the pipe shall be compacted for pipe support. Backfill shall be brought up evenly on both sides of the pipe so that the pipe remains aligned. In instances where the manufacturer's installation instructions for materials are more restrictive than those prescribed by the code, the material shall be installed in accordance with the more restrictive requirement.

306.4 Tunneling. Where pipe is to be installed by tunneling, jacking or a combination of both, the pipe shall be protected from damage during installation and from subsequent uneven loading. Where earth tunnels are used, adequate supporting structures shall be provided to prevent future settling or caving.

SECTION PC 307
STRUCTURAL SAFETY

307.1 General. *In the process of installing or repairing any part of a plumbing and drainage installation, the finished floors, walls, ceilings, tile work or any other part of the building or premises that must be changed or replaced shall be left in a safe structural condition in accordance with the requirements of the New York city building code.*

307.2 Cutting, notching or bored holes. *A framing member shall not be cut, notched or bored in excess of limitations specified in the New York city building code.*

307.3 Penetrations of floor/ceiling assemblies and fire-resistance-rated assemblies. *Penetrations of floor/ceiling assemblies and assemblies required to have a fire-resistance rating shall be protected in accordance with the New York city building code.*

307.4 Alterations to trusses. *Truss members and components shall not be cut, drilled, notched, spliced or otherwise altered in any way without written concurrence and approval of a registered design professional. Alterations resulting in the addition of loads to any member (e.g., HVAC equipment, water heater) shall not be permitted without verification that the truss is capable of supporting such additional loading.*

307.5 Trench location. *Trenches installed parallel to footings shall not extend below the 45-degree (0.79 rad) bearing plane of the footing or wall.*

307.6 Piping materials exposed within plenums. *All piping materials exposed within plenums shall comply with the provisions of the New York city mechanical code.*

SECTION PC 308
PIPING SUPPORT

308.1 General. *All plumbing piping shall be supported in accordance with this section.*

308.2 Piping seismic supports. *Where earthquake loads are applicable in accordance with the building code, plumbing piping supports shall be designed and installed for the seismic forces in accordance with the New York city building code.*

308.3 Materials. *Hangers, anchors and supports shall support the piping and the contents of the piping. Hangers and strapping material shall be of approved material that will not promote galvanic action.*

308.4 Structural attachment. *Hangers and anchors shall be attached to the building construction in an approved manner.*

308.5 Interval of support. *Pipe shall be supported in accordance with Table 308.5.*

Exception: *The interval of support for piping systems designed to provide for expansion/contraction shall conform to the engineered design in accordance with Section 28-105.*

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TABLE 308.5
HANGER SPACING

<i>PIPING MATERIAL</i>	<i>MAXIMUM HORIZONTAL SPACING (feet)</i>	<i>MAXIMUM VERTICAL SPACING (feet)</i>
<i>ABS pipe</i>	4	10 ^b
<i>Brass pipe</i>	10	10
<i>Cast-iron pipe</i>	5	<i>At base and at each story height no greater than 20</i>
<i>Copper or copper-alloy pipe</i>	12	<i>At each story height no greater than 12</i>
<i>Copper or copper-alloy tubing, 1/4-inch diameter and smaller</i>	6	<i>At each story height no greater than 10</i>
<i>Copper or copper-alloy tubing, 1/2-inch diameter and larger</i>	10	<i>At each story height no greater than 10</i>
<i>Steel pipe</i>	12	<i>At every story height</i>
<i>PVC pipe</i>	4	10 ^b
<i>Stainless steel drainage systems</i>	10	10 ^b

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.

Midstory guide for sizes 2 inches and smaller.

308.6 Sway bracing. *Rigid support sway bracing shall be provided at changes in direction greater than 45 degrees (0.79 rad) for pipe sizes 4 inches (102 mm) and larger.*

308.7 Anchorage. *Anchorage shall be provided to restrain drainage piping from axial movement.*

308.7.1 Location. *For pipe sizes greater than 4 inches (102 mm), restraints shall be provided for drain pipes at all changes in direction and at all changes in diameter greater than two pipe sizes. Braces, blocks, rodding and other suitable methods as specified by the coupling manufacturer shall be utilized.*

308.8 Expansion joint fittings. *Expansion joint fittings shall be used only where necessary to provide for expansion and contraction of the pipes. Expansion joint fittings shall be of the typical material suitable for use with the type of piping in which such fittings are installed.*

308.9 Stacks. *Bases of stacks shall be supported by concrete, brick laid in cement mortar or metal brackets attached to the building or by other approved methods.*

308.10 Parallel water distribution systems. *Piping bundles for manifold systems shall be supported in accordance with Table 308.5. Support at changes in direction shall be in accordance with the manufacturer's installation instructions. Hot and cold water piping shall not be grouped in the same bundle.*

SECTION PC 309 **FLOOD HAZARD RESISTANCE**

309.1 General. *Plumbing systems and equipment in structures erected in flood*

hazard areas shall be constructed in accordance with the requirements of this section and the New York city building code.

309.2 Flood hazard. For structures located in flood hazard areas, the following systems and equipment shall be located at or above the design flood elevation:

Exception: The following systems are permitted to be located below the design flood elevation provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

1. All water service pipes.
2. Pump seals in individual water supply systems where the pump is located below the design flood elevation.
3. Covers on potable water wells shall be sealed, except where the top of the casing well or pipe sleeve is elevated to at least 1 foot (304.8 mm) above the design flood elevation.
4. All sanitary drainage piping.
5. All storm drainage piping.
6. Manhole covers shall be sealed, except where elevated to or above the design flood elevation.
7. All other plumbing fixtures, faucets, fixture fittings, piping systems and equipment.
8. Water heaters.
9. Vents and vent systems.

309.3 Flood hazard areas subject to high-velocity wave action. Structures located in flood hazard areas subject to high-velocity wave action shall meet the requirements of Section 309.2. The plumbing systems, pipes and fixtures shall not be mounted on or penetrate through walls intended to break away under flood loads.

SECTION PC 310

WASHROOM AND TOILET ROOM REQUIREMENTS

310.1 Light and ventilation. Washrooms and toilet rooms shall be illuminated and ventilated in accordance with the New York city building code and New York city mechanical code.

310.2 Location of fixtures and piping. Piping, fixtures or equipment shall not be located in such a manner as to interfere with the normal operation of windows, doors or other means of egress openings.

310.3 Interior finish. Interior finish surfaces of toilet rooms shall comply with the New York city building code.

310.4 Water closet compartment. Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

Exceptions:

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.

Toilet rooms located in day care and child-care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing

compartment.

**SECTION PC 311
TOILET FACILITIES FOR WORKERS**

311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer type shall conform to ANSI Z4.3.

**SECTION PC 312
TESTS AND INSPECTIONS**

312.1 Required tests. The licensed master plumber shall make the applicable tests prescribed in sections 312.2 through 312.9 to determine compliance with the provisions of this code. The licensed master plumber shall give two days notice to the commissioner when the plumbing work is ready for tests. The equipment, material, power and labor necessary for the inspection and test shall be furnished by the licensed master plumber and the licensed master plumber shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests. All plumbing system piping shall be tested with either water or, for piping systems other than plastic, by air. After the plumbing fixtures have been set and their traps filled with water, the entire drainage system shall be submitted to final tests. The commissioner shall require the removal of any cleanouts if necessary to ascertain whether the pressure has reached all parts of the system.

Exception: The repair, replacement or alteration to existing water waste, vent or storm water piping or the addition of no more than three (3) plumbing fixtures or roof drains to an existing floor of an existing building, shall require only a visual inspection of waste, vent and storm water pipe roughing and finish in addition to a pressure test of water piping at available building water pressure.

312.1.1 Test gauges. Gauges used for testing shall be as follows:

1. Tests requiring a pressure of 10 psi or less shall utilize a testing gauge having increments of 0.10 psi or less.
2. Tests requiring a pressure of greater than 10 psi but less than or equal to 100 psi shall utilize a testing gauge having increments of 1 psi or less.
3. Tests requiring a pressure of greater than 100 psi shall utilize a testing gauge having increments of 2 psi or less.

312.2 Drainage and vent water test. A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10 foot (3048 mm) head of water. In testing successive sections, at least the upper 10 feet (3048 mm) of the next preceding section shall be tested so that no joint or pipe in the building, except the uppermost 10 feet (3048 mm) of the system, shall have been submitted to a test of less than a 10 foot (3048 mm) head of water. This pressure shall be held for at least 15 minutes. The system shall then be tight at all points.

312.3 Drainage and vent air test. An air test shall be made by forcing air into the system until there is a uniform gauge pressure of 5 pounds per square inch (psi) (34.5

kPa). This pressure shall be held for a test period of at least 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperature or the seating of gaskets shall be made prior to the beginning of the test period.

312.4 Drainage and vent final test. The final test of the completed drainage and vent system shall be visual and in sufficient detail to determine compliance with the provisions of this code except that the plumbing shall be subjected to a smoke test where necessary for cause. Where the smoke test is utilized, it shall be made by filling all traps with water and then introducing into the entire system a pungent, thick smoke produced by one or more smoke machines. When the smoke appears at stack openings on the roof, the stack openings shall be closed and a pressure equivalent to a 1-inch water column (248.8 Pa) shall be held for a test period of not less than 15 minutes.

312.5 Water supply system test. Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure of 50 psi above its normal working pressure but not less than 150 psi. The water utilized for tests shall be obtained from a potable source of supply. The required tests shall be performed in accordance with this section and Section PC 107.

312.6 Gravity sewer test. Gravity sewer tests shall consist of plugging the end of the building sewer at the point of connection with the public sewer, filling the building sewer with water, testing with not less than a 10-foot (3048 mm) head of water and maintaining such pressure for 15 minutes.

312.7 Forced sewer test. Forced sewer tests shall consist of plugging the end of the building sewer at the point of connection with the public sewer and applying a pressure of 5 psi (34.5 kPa) greater than the shut off pump rating, and maintaining such pressure for 15 minutes.

312.8 Storm drainage system test. Storm drain systems within a building shall be tested by water or air in accordance with Sections 312.2 or 312.3.

312.9 Inspection and testing of backflow prevention assemblies. Inspection and testing shall comply with Sections 312.9.1 and 312.9.2.

312.9.1 Inspections. Annual inspections shall be made of all backflow prevention assemblies and air gaps to determine whether they are operable.

312.9.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, double check detector fire protection backflow prevention assemblies, hose connection backflow preventers, and spill-proof vacuum breakers shall be tested at the time of installation, immediately after repairs or relocation. Refer to Section 608.13 and the city department of environmental protection for additional testing requirements. The testing procedure shall be performed in accordance with one of the following standards: ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CAN/CSA, B64.10

SECTION PC 313 EQUIPMENT EFFICIENCIES

313.1 General. Equipment efficiencies shall be in accordance with the New York state energy conservation construction code.

SECTION PC 314 CONDENSATE DISPOSAL

314.1 Fuel-burning appliances. Liquid combustion by-products of condensing

appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer's installation instructions. Condensate piping shall be of approved corrosion-resistant material and shall not be smaller than the drain connection on the appliance. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope).

314.2 Evaporators and cooling coils. Condensate drain systems shall be provided for equipment and appliances containing evaporators or cooling coils. Condensate drain systems shall be designed, constructed and installed in accordance with Sections 314.2.1 through 314.2.3.

314.2.1 Condensate disposal. Condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Condensate shall not discharge into a street, alley or other areas so as to cause a nuisance.

314.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, ABS, or PVC pipe. All components shall be selected for the pressure and temperature rating of the installation. Condensate waste and drain line size shall not be less than $\frac{3}{4}$ inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with an approved method. All horizontal sections of drain piping shall be installed in uniform alignment at a uniform slope.

314.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 314.2.1, a secondary drain or auxiliary drain pan shall be required for each cooling or evaporator coil where damage to any building components will occur as a result of overflow from the equipment drain pan or stoppage in the condensate drain piping. One of the following methods shall be used:

1. An auxiliary drain pan with a separate drain shall be provided under the coils on which condensation will occur. The auxiliary pan drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The pan shall have a minimum depth of 1.5 inches (38 mm), shall not be less than 3 inches (76 mm) larger than the unit or the coil dimensions in width and length and shall be constructed of corrosion-resistant material. Metallic pans shall have a minimum thickness of not less than 0.0276 inch (0.7 mm) galvanized sheet metal. Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm).
2. A separate overflow drain line shall be connected to the drain pan provided with the equipment. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection.
3. An auxiliary drain pan without a separate drain line shall be provided under the coils on which condensate will occur. Such pan shall be equipped with a water level detection device that will shut off the equipment served prior to overflow of the pan. The auxiliary drain pan shall be constructed in accordance with Item 1 of 314.2.3.

314.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

CHAPTER 4
FIXTURES, FAUCETS AND FIXTURE FITTINGS

SECTION PC 401
GENERAL

401.1 Scope. *This chapter shall govern the materials, design and installation of plumbing fixtures, faucets and fixture fittings in accordance with the type of occupancy, and shall provide for the minimum number of fixtures for various types of occupancies.*

401.2 Prohibited fixtures and connections. *Water closets having a concealed trap seal or an unventilated space or having walls that are not thoroughly washed at each discharge in accordance with ASME A112.19.2M shall be prohibited. Any water closet that permits siphonage of the contents of the bowl back into the tank shall be prohibited. Trough urinals shall be prohibited.*

401.3 Water conservation. *The maximum water flow rates and flush volume for plumbing fixtures and fixture fittings shall comply with 604.4.*

SECTION PC 402
FIXTURE MATERIALS

402.1 Quality of fixtures. *Plumbing fixtures shall be constructed of approved materials, with smooth, impervious surfaces, free from defects and concealed fouling surfaces, and shall conform to standards cited in this code. All porcelain enameled surfaces on plumbing fixtures shall be acid resistant.*

402.2 Materials for specialty fixtures. *Materials for specialty fixtures not otherwise covered in this code shall be of stainless steel, soapstone, chemical stoneware or plastic, or shall be lined with lead, copper-base alloy, nickel-copper alloy, corrosion-resistant steel or other material especially suited to the application for which the fixture is intended.*

402.3 Sheet copper. *Sheet copper for general applications shall conform to ASTM B 152 and shall not weigh less than 12 ounces per square foot (3.7 kg/m²).*

402.4 Sheet lead. *Sheet lead for pans shall not weigh less than 4 pounds per square foot (19.5 kg/m²) coated with an asphalt paint or other approved coating.*

SECTION PC 403
MINIMUM PLUMBING FACILITIES

403.1 Minimum number of fixtures. *Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 403.1. Types of occupancies not shown in Table 403.1 shall be considered individually by the commissioner. The number of occupants shall be determined by the New York city building code. Occupancy classification shall be determined in accordance with the New York city building code.*

TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES
(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 416.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly (see Sections 403.2, 403.5 and 403.6)		Theaters usually with fixed seats and other buildings for the performing arts and motion pictures	1 per 70 for the first 210 and 1 per 125 for the remainder exceeding 210	1 per 35 for the first 210 and 1 per 65 for the remainder exceeding 210	1 per 200	-	1 per 500	1 service sink	
			Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 75 ¹	1 per 40 ¹	1 per 75	-	1 per 500	1 service sink	
			Restaurants ¹ , banquet halls and food courts	1 per 75	1 per 75	1 per 200	-	1 per 500	1 service sink	
			Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 70 for the first 210 and 1 per 125 for the remainder exceeding 210	1 per 35 for the first 210 and 1 per 65 for the remainder exceeding 210	1 per 200	-	1 per 500	1 service sink	
			Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 750	-	1 per 1,000	1 service sink	
			Places of worship and other religious services. Churches without assembly halls	1 per 150	1 per 75	1 per 200	-	1 per 1,000	1 service sink	

TABLE 403.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES
(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY ¹	DESCRIPTION	WATER CLOSETS (URINALS, SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
			Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	-	1 per 1,000	1 service sink
			Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	-	1 per 1,000	1 service sink
2	Business (see Sections 403.2, 403.4 and 403.6)		Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	No. of persons each sex 1-15 1 16-35 2 36-55 3 56-80 4 81-110 5 111-150 6 1 fixture for each additional 40 persons	No. of fixtures 1-20 1 21-40 2 41-60 3 61-90 4 91-125 5 1 fixture for each additional 45 persons			-	1 per 100	1 service sink
3	Educational		Educational facilities	1 per 50		1 per 50		-	1 per 100	1 service sink
4	Factory and industrial		Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		(see Section 411)	1 per 400	1 service sink
			Residential care	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
			Hospitals, ambulatory nursing home patients ^c	1 per room ^c		1 per room ^c		1 per 15	1 per 100	1 service sink per floor
			Employees, other than residential care ^d	1 per 25		1 per 35		-	1 per 100	-

		Residential care	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink
		Hospitals, ambulatory nursing home patients	1 per cell 1 per room ^c	1 per cell 1 per room ^c	1 per 15 1 per 15	1 per 100 1 per 100	1 service sink 1 service sink
		Reformatories, detention centers, and correctional centers	1 per 15	1 per 15	1 per 15	1 per 100	1 service sink
		Adult daycare and childcare ^d	1 per 15	1 per 15	1 per 15 ^d	1 per 100	1 service sink
		Employees, other than residential care ^e	1 per 25	1 per 35	-	1 per 100	-
(continued)							
		Visitors, other than residential care	1 per 75	1 per 100	-	1 per 500	-

TABLE 403.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES
(See Sections 403.2 and 403.3)

NO.			WATER CLOSETS (URINALS, SEE SECTION 419.2)		LAVATORIES				
			MALE	FEMALE	MALE	FEMALE			
6	Mercantile (see Sections 403.2, 403.5 and 403.6)	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink
		Hotels, motels, boarding houses (transient)	1 per guestroom		1 per guestroom		1 per guestroom	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units

		Hotels, motels, boarding houses (transient)	1 per guestroom	1 per guestroom	1 per guestroom	—	1 service sink
		Residential, transient, boarding houses (not transient)	1 per 10 1 per 10	1 per 10 1 per 10	1 per 8 1 per 8	1 per 100 1 per 100	1 service sink
		Apartment house	1 per dwelling unit	1 per dwelling unit	1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
8	Storage (see Sections 403.2 and 403.4)	Structures for the storage of goods, warehouses, storehouse and freight depots. Low and Moderate Hazard. One- and two-family dwellings	1 per 100 1 per dwelling unit	1 per 100 1 per dwelling unit	1 per 1,000 1 per dwelling unit	See Section 411 —	1 kitchen sink per dwelling unit; 1 automatic clothes washer connector per dwelling unit

- a. *The fixtures shown are based on one fixture being the minimum required for the number of persons indicated. Any fraction of the number of persons requires and additional fixture. The number of occupants shall be determined by the New York city building code.*
- b. *Toilet facilities for employees shall be separate from facilities for inmates or patients.*
- c. *A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient rooms shall be permitted where such room is provided with direct access from each patient room and with provisions for privacy.*
- d. *For day nurseries, a maximum of one bathtub shall be required.*
- e. *For attached one- and two-family dwellings, one automatic clothes washer connection shall be required per 20 dwelling units.*
- f. *Use a calculation based on 1 person/125 net square feet.*
- g. *For the purposes of this table only, "Bar" shall mean a business establishment or a portion of a non-profit entity devoted primarily to the selling and serving of alcoholic beverages for consumption by the public, guests, patrons, or members on the premises and in which the serving of food is only incidental.*

- h. *The total number of occupant for a single establishment comprising a restaurant with an accessory bar shall be considered as a restaurant for the purposes of determining the minimum number of plumbing fixtures.*
- i. *As per the New York city building code.*
- j. *The requirements for the number of water closets for a total occupancy of 150 persons or fewer shall not apply to bars except that there shall be at least one water closet for men and at least one water closet for women or at least two unisex toilet rooms.*

403.2 Separate facilities. *Where plumbing fixtures are required, separate facilities shall be provided for each sex.*

Exceptions:

1. *Separate facilities shall not be required for private facilities.*
2. *Separate employee facilities shall not be required in occupancies in which 15 or less people are employed.*
3. *Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or less.*

403.3 Number of occupants of each sex. *The required water closets, lavatories, and showers or bathtubs shall be distributed equally between the sexes based on the percentage of each sex anticipated in the occupant load. The occupant load shall be composed of 50 percent of each sex, unless statistical data approved by the commissioner indicate a different distribution of the sexes.*

403.4 Location of employee toilet facilities in occupancies other than assembly or mercantile. *Access to toilet facilities in occupancies other than mercantile and assembly occupancies shall be from within the employees' working area. Employee facilities shall be either separate facilities or combined employee and public facilities.*

Exception: *Facilities that are required for employees in storage structures or kiosks, and are located in adjacent structures under the same ownership, lease or control, shall be a maximum travel distance of 500 feet (152,400 mm) from the employees' working area.*

403.4.1 Travel distance. *The required toilet facilities in occupancies other than assembly or mercantile shall be located not more than one story above or below the employee's working area and the path of travel to such facilities shall not exceed a distance of 500 feet (152,400 mm).*

Exception: *The location and maximum travel distances to required employee toilet facilities in factory and industrial occupancies are permitted to exceed that required in Section 403.4.1, provided the location and maximum travel distance are approved by the commissioner.*

403.5 Location of employee toilet facilities in mercantile and assembly occupancies. *Employees shall be provided with toilet facilities in building and tenant spaces utilized as restaurants, nightclubs, places of public assembly and mercantile occupancies. The employee facilities shall be either separate facilities or combined employee and public facilities. The required toilet facilities shall be located not more than one story above or below the employees' work area and the path of travel to such facilities, in other than covered malls, shall not exceed a distance of 500 feet (152,400 mm). The path of travel to required facilities in covered malls shall not exceed a distance of 300 feet (91,440 mm).*

Exception: *Employee toilet facilities shall not be required in tenant spaces*

where the travel distance from the main entrance of the tenant space to a central toilet area does not exceed 300 feet (91,440 mm) and such central toilet facilities are located not more than one story above or below the tenant space.

403.6 Public facilities. Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. Public toilet facilities shall be located not more than one story above or below the space required to be provided with public toilet facilities and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: Public utilization of toilet facilities shall not be required for establishments less than 10,000 square feet in Occupancy Groups B or M.

403.6.1 Covered malls. In covered mall buildings, the path of travel to required toilet facilities shall not exceed a distance of 300 feet (91 440 mm). Facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum travel distance to the central toilet facilities in covered mall buildings shall be measured from the main entrance of any store or tenant space.

403.6.2 Pay facilities. Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.

403.7 Signage. Required public facilities shall be designated by a legible sign for each sex. Signs shall be readily visible and located near the entrance to each toilet facility.

SECTION PC 404 ACCESSIBLE PLUMBING FACILITIES

404.1 Where required. Accessible plumbing facilities and fixtures shall be provided in accordance with the New York city building code.

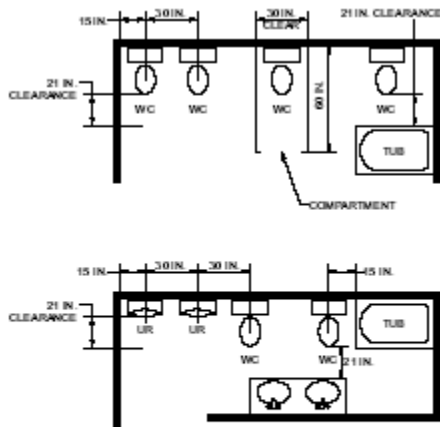
SECTION PC 405 INSTALLATION OF FIXTURES

405.1 Water supply protection. The supply lines and fittings for every plumbing fixture shall be installed so as to prevent backflow.

405.2 Access for cleaning. Plumbing fixtures shall be installed so as to afford easy access for cleaning both the fixture and the area around the fixture.

405.3 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls.

405.3.1 Water closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction, or closer than 30 inches (762 mm) center-to-center between water closets, urinals or adjacent fixtures. There shall be at least a 21 inch (533 mm) clearance in front of the water closet, urinal or bidet to any wall, fixture or door. Water closet compartments shall not be less than 30 inches (762 mm) wide or 60 inches (1524 mm) deep. There shall be at least a 21 inch (533 mm) clearance in front of a lavatory to any wall, fixture or door (see Figure 405.3.1).



**FIGURE 405.3.1
FIXTURE CLEARANCE**

405.3.2 Public lavatories. In employee and public toilet rooms, the required lavatory shall be located in the same room as the required water closet.

405.4 Floor and wall drainage connections. Connections between the drain and floor outlet plumbing fixtures shall be made with a floor flange. The flange shall be attached to the drain and anchored to the structure. Connections between the drain and wall-hung water closets shall be made with an approved extension nipple or horn adapter. The water closet shall be bolted to the hanger with corrosion-resistant bolts or screws. Joints shall be sealed with an approved elastomeric gasket, flange-to-fixture connection complying with ASME A112.4.3 or setting compound conforming to FS TT-P-1536A.

405.4.1 Floor flanges. Floor flanges for water closets or similar fixtures shall not be less than 0.125 inch (3.2 mm) thick for brass, 0.25 inch (6.4 mm) thick for plastic, and 0.25 inch (6.4 mm) thick and not less than a 2 inch (51 mm) caulking depth for cast-iron or galvanized malleable iron.

Floor flanges of hard lead shall weigh not less than 1 pound, 9 ounces (0.7 kg) and shall be composed of lead alloy with not less than 7.75 percent antimony by weight. Closet screws and bolts shall be of brass. Flanges shall be secured to the building structure with corrosion-resistant screws or bolts.

405.4.2 Securing floor outlet fixtures. Floor outlet fixtures shall be secured to the floor or floor flanges by screws or bolts of corrosion-resistant material.

405.4.3 Securing wall-hung water closet bowls. Wall-hung water closet bowls shall be supported by a concealed metal carrier that is attached to the building structural members so that strain is not transmitted to the closet connector or any other part of the plumbing system. The carrier shall conform to ASME A112.6.1M or ASME A112.6.2.

405.5 Water-tight joints. Joints formed where fixtures come in contact with walls or floors shall be sealed.

405.6 Plumbing in mental health centers. In mental health centers, pipes or traps shall not be exposed, and fixtures shall be bolted through walls.

405.7 Design of overflows. Where any fixture is provided with an overflow, the waste shall be designed and installed so that standing water in the fixture will not rise in the overflow when the stopper is closed, and no water will remain in the overflow when the fixture is empty.

405.7.1 Connection of overflows. The overflow from any fixture shall discharge into the drainage system on the inlet or fixture side of the trap.

Exception: The overflow from a flush tank serving a water closet or urinal shall discharge into the fixture served.

405.8 Slip joint connections. Slip joints shall be made with an approved elastomeric gasket and shall only be installed on the trap outlet, trap inlet and within the trap seal. Fixtures with concealed slip-joint connections shall be provided with an access panel or utility space at least 12 inches (305 mm) in its smallest dimension or other approved arrangement so as to provide access to the slip joint connections for inspection and repair.

405.9 Design and installation of plumbing fixtures. Integral fixture fitting mounting surfaces on manufactured plumbing fixtures or plumbing fixtures constructed on site, shall meet the design requirements of ASME A112.19.2M or ASME A112.19.3M.

SECTION PC 406
AUTOMATIC CLOTHES WASHERS

406.1 Approval. All automatic clothes washers shall conform to ASSE 1007

406.2 Water connection. The water supply to an automatic clothes washer shall be protected against backflow by an air gap installed integrally within the machine conforming to ASSE 1007 or with the installation of a backflow preventer in accordance with Section PC 608.

406.3 Waste connection. The waste from an automatic clothes washer shall discharge through an air break into a standpipe in accordance with Section 802.4 or into a laundry sink. The trap and fixture drain for an automatic clothes washer standpipe shall be a minimum of 2 inches (51 mm) in diameter. The automatic clothes washer fixture drain shall connect to a branch drain or drainage stack a minimum of 3 inches (76 mm) in diameter.

SECTION PC 407
BATHTUBS

407.1 Approval. Bathtubs shall conform to ANSI Z124.1, ASME A112.19.1M, ASME A112.19.4M, ASME A112.19.9M, CSA B45.2, CSA B45.3 or CSA B45.5.

407.2 Bathtub waste outlets. Bathtubs shall have waste outlets a minimum of 1.5 inches (38 mm) in diameter. The waste outlet shall be equipped with an approved stopper.

407.3 Glazing. Windows and doors within a bathtub enclosure shall conform to the safety glazing requirements of the New York city building code.

407.4 Bathtub enclosure. Doors within a bathtub enclosure shall conform to ASME A112.19.15.

SECTION PC 408
BIDETS

408.1 Approval. Bidets shall conform to ASME A112.19.2M, ASME A112.19.9M or CSA B45.1.

408.2 Water connection. The water supply to a bidet shall be protected against backflow by an air gap or backflow preventer in accordance with Sections 608.13.1, 608.13.2, 608.13.3, 608.13.5, 608.13.6 or 608.13.8.

SECTION PC 409
DISHWASHING MACHINES

409.1 Approval. Domestic dishwashing machines shall conform to ASSE 1006. Commercial dishwashing machines shall conform to ASSE 1004 and NSF 3.

409.2 Water connection. The water supply to a dishwashing machine shall be protected against backflow by an air gap or backflow preventer in accordance with Section PC 608.

409.3 Waste connection. The waste connection of a dishwashing machine shall comply with Sections 802.1.6 or 802.1.7, as applicable.

SECTION PC 410
DRINKING FOUNTAINS

410.1 Approval. Drinking fountains shall conform to ASME A112.19.1M, ASME A112.19.2M or ASME A112.19.9M, and water coolers shall conform to ARI 1010.

Drinking fountains and water coolers shall conform to NSF 61, Section 9. Where water is served in restaurants, drinking fountains shall not be required. In other occupancies, where drinking fountains are required, bottled water dispensers shall be permitted to be substituted for not more than 50 percent of the required drinking fountains.

410.2 Prohibited location. *Drinking fountains shall not be installed in public restrooms.*

**SECTION PC 411
EMERGENCY SHOWERS AND EYEWASH STATIONS**

411.1 Approval. *Emergency showers and eyewash stations shall conform to ISEA Z358.1.*

411.2 Waste connection. *Waste connections shall not be required for emergency showers and eyewash stations.*

**SECTION PC 412
FLOOR AND TRENCH DRAINS**

412.1 Approval. *Floor drains shall conform to ASME A112.6.3, ASME A112.3.1 or CSA B79. Trench drains shall comply with ASME A112.6.3.*

412.2 Floor drain trap and strainer. *Floor drain traps shall have removable strainers. The strainer shall have a waterway area of not less than the area of the tailpiece. The floor drain shall be constructed so that the drain is capable of being cleaned. Access shall be provided to the drain inlet.*

412.3 Size of floor drains. *Floor drains shall have a minimum 3 inch (76 mm) diameter drain outlet.*

412.4 Public laundries and central washing facilities. *In public coin-operated laundries and in the central washing facilities of multiple-family dwellings, the rooms containing automatic clothes washers shall be provided with floor drains located to readily drain the entire floor area. Such drains shall have a minimum 3 inch (76 mm) diameter drain outlet and be provided with lint strainers.*

**SECTION PC 413
FOOD WASTE GRINDER UNITS**

413.1 Approval. *Domestic food waste grinders shall conform to ASSE 1008. Food waste grinders shall not increase the drainage fixture unit load on the sanitary drainage system.*

413.2 Domestic food waste grinder waste outlets. *Domestic food waste grinders shall be connected to a drain of not less than 2 inches (51 mm) in diameter.*

413.3 Reserved.

413.4 Water supply required. *All food waste grinders shall be provided with a supply of cold water.*

**SECTION PC 414
GARBAGE CAN WASHERS**

414.1 Water connection. *The water supply to a garbage can washer shall be protected against backflow by an air gap or a backflow preventer in accordance with Section 608.13.1, 608.13.2, 608.13.3, 608.13.5, 608.13.6 or 608.13.8.*

414.2 Waste connection. *Garbage can washers shall be trapped separately. The receptacle receiving the waste from the washer shall have a removable basket or strainer to prevent the discharge of large particles into the drainage system.*

**SECTION PC 415
LAUNDRY TRAYS**

415.1 Approval. Laundry trays shall conform to ANSI Z124.6, ASME A112.19.1M, ASME A112.19.3M, ASME A112.19.9M, CSA B45.2 or CSA B45.4.

415.2 Waste outlet. Each compartment of a laundry tray shall be provided with a waste outlet a minimum of 1.5 inches (38 mm) in diameter and a strainer or crossbar to restrict the clear opening of the waste outlet.

**SECTION 416
LAVATORIES**

416.1 Approval. Lavatories shall conform to ANSI Z124.3, ASME A112.19.1M, ASME A112.19.2M, ASME A112.19.3M, ASME A112.19.4M, ASME A112.19.9M, CSA B45.1, CSA B45.2, CSA B45.3 or CSA B45.4. Group wash-up equipment shall conform to the requirements of Section PC 402. Every 20 inches (508 mm) of rim space shall be considered as one lavatory.

416.2 Cultured marble lavatories. Cultured marble vanity tops with an integral lavatory shall conform to ANSI Z124.3 or CSA B45.5.

416.3 Lavatory waste outlets. Lavatories shall have waste outlets not less than 1.25 inches (32 mm) in diameter. A strainer, pop-up stopper, crossbar or other device shall be provided to restrict the clear opening of the waste outlet.

416.4 Moveable lavatory systems. Moveable lavatory systems shall comply with ASME A112.19.12.

**SECTION PC 417
SHOWERS**

417.1 Approval. Prefabricated showers and shower compartments shall conform to ANSI Z124.2, ASME A112.19.9M or CSA B45.5. Shower valves for individual showers shall conform to the requirements of Section 424.4.

417.2 Water supply riser. Every water supply riser from the shower valve to the shower head outlet, whether exposed or not, shall be attached to the structure in an approved manner.

417.3 Shower waste outlet. Waste outlets serving showers shall be at least 2 inches (51 mm) in diameter and, for other than waste outlets in bathtubs, shall have removable strainers not less than 3 inches (76 mm) in diameter with strainer openings not less than 0.25 inch (6.4 mm) in minimum dimension. Where each shower space is not provided with an individual waste outlet, the waste outlet shall be located and the floor pitched so that waste from one shower does not flow over the floor area serving another shower. Waste outlets shall be fastened to the waste pipe in an approved manner.

417.4 Shower compartments. All shower compartments shall have a minimum of 900 square inches (0.58 m²) of interior cross-sectional area. Shower compartments shall not be less than 30 inches (762 mm) in minimum dimension measured from the finished interior dimension of the compartment, exclusive of fixture valves, showerheads, soap dishes, and safety grab bars or rails. Except as required in Section PC 404, the minimum required area and dimension shall be measured from the finished interior dimension at a height equal to the top of the threshold and at a point tangent to its centerline and shall be continued to a height not less than 70 inches (1778 mm) above the shower drain outlet.

417.4.1 Wall area. The wall area above built-in tubs with installed shower

heads and in shower compartments shall be constructed of smooth, noncorrosive and nonabsorbent waterproof materials to a height not less than 6 feet (1829 mm) above the room floor level, and not less than 70 inches (1778 mm) where measured from the compartment floor at the drain. Such walls shall form a water-tight joint with each other and with either the tub, receptor or shower floor.

417.5 Shower floors or receptors. Floor surfaces shall be constructed of impervious, noncorrosive, nonabsorbent and waterproof materials.

417.6 Glazing. Windows and doors within a shower enclosure shall conform to the safety glazing requirements of the New York city building code.

SECTION PC 418

SINKS

418.1 Approval. Sinks shall conform to ANSI Z124.6, ASME A112.19.1M, ASME A112.19.2M, ASME A112.19.3M, ASME A112.19.4M, ASME A112.19.9M, CSA B45.1, CSA B45.2, CSA B45.3 or CSA B45.4.

418.2 Sink waste outlets. Sinks shall be provided with waste outlets a minimum of 2 inches (51mm) in diameter. A strainer or crossbar shall be provided to restrict the clear opening of the waste outlet.

418.3 Moveable sink systems. Moveable sink systems shall comply with ASME A112.19.12.

SECTION PC 419

URINALS

419.1 Approval. Urinals shall conform to ASME A112.19.2M, CSA B45.1 or CSA B45.5. Urinals shall conform to the water consumption requirements of Section 604.4. Urinals shall conform to the hydraulic performance requirements of ASME A112.19.6, CSA B45.1 or CSA B45.5.

419.2 Substitution for water closets. In each bathroom or toilet room, urinals shall not be substituted for more than 50 percent of the required water closets.

419.3 Surrounding material. Wall and floor space to a point 2 feet (610 mm) in front of a urinal lip and 4 feet (1219 mm) above the floor and at least 2 feet (610 mm) to each side of the urinal shall be waterproofed with a smooth, readily cleanable, nonabsorbent material.

SECTION PC 420

WATER CLOSETS

420.1 Approval. Water closets shall conform to the water consumption requirements of Section 604.4 and shall conform to ANSI Z124.4, ASME A112.19.2M, CSA B45.1, CSA B45.4 or CSA B45.5. Water closets shall conform to the hydraulic performance requirements of ASME A112.19.6. Water closet tanks shall conform to ANSI Z124.4, ASME A112.19.2, ASME A112.19.9M, CSA B45.1, CSA B45.4 or CSA B45.5. Electro-hydraulic water closets shall comply with ASME A112.19.13.

420.2 Water closets for public or employee toilet facilities. Water closet bowls for public or employee toilet facilities shall be of the elongated type.

420.3 Water closet seats. Water closets shall be equipped with seats of smooth, nonabsorbent material. All seats of water closets provided for public or employee toilet facilities shall be of the hinged open-front type. Integral water closet seats shall be of the same material as the fixture. Water closet seats shall be sized for the water closet bowl type.

420.4 Water closet connections. A 4-inch by 3-inch (102 mm by 76 mm) closet bend shall be acceptable. Where a 3-inch (76 mm) bend is utilized on water closets, a 4-inch by 3-inch (102 mm by 76 mm) flange shall be installed to receive the fixture horn.

420.5 Water closets for children's use. In nurseries, schools, and similar places where plumbing fixtures are provided for the use of children under six years of age, such water closets shall be of a size and height suitable for the children's use.

SECTION PC 421 WHIRLPOOL BATHTUBS

421.1 Approval. Whirlpool bathtubs shall comply with ASME A112.19.7M or with CSA B45.5 and CSA B45 (Supplement 1).

421.2 Installation. Whirlpool bathtubs shall be installed and tested in accordance with the manufacturer's installation instructions. The pump shall be located above the weir of the fixture trap. Access shall be provided to the pump.

421.3 Drain. The pump drain and circulation piping shall be sloped to drain the water in the volute and the circulation piping when the whirlpool bathtub is empty.

421.4 Suction fittings. Suction fittings for whirlpool bathtubs shall comply with ASME A112.19.8M.

421.5 Whirlpool enclosure. Doors within a whirlpool enclosure shall conform to ASME A112.19.15.

SECTION PC 422 HEALTH CARE FIXTURES AND EQUIPMENT

422.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following occupancies: nursing homes, homes for the aged, orphanages, infirmaries, first aid stations, psychiatric facilities, clinics, professional offices of dentists and doctors, mortuaries, educational facilities, surgery, dentistry, research and testing laboratories, establishments manufacturing pharmaceutical drugs and medicines, and other structures with similar apparatus and equipment classified as plumbing.

422.2 Approval. All special plumbing fixtures, equipment, devices and apparatus shall be of an approved type.

422.3 Protection. All devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, distillation, processing, cooling, or storage of ice or foods, and that connect to either the water supply or drainage system, shall be provided with protection against backflow, flooding, fouling, contamination of the water supply system and stoppage of the drain.

422.4 Materials. Fixtures designed for therapy, special cleansing or disposal of waste materials, combinations of such purposes, or any other special purpose, shall be of smooth, impervious, corrosion-resistant materials and, where subjected to temperatures in excess of 180°F (82°C), shall be capable of withstanding, without damage, higher temperatures.

422.5 Access. Access shall be provided to concealed piping in connection with special fixtures where such piping contains steam traps, valves, relief valves, check valves, vacuum breakers or other similar items that require periodic inspection, servicing, maintenance or repair. Access shall be provided to concealed piping that

requires periodic inspection, maintenance or repair.

422.6 Clinical sink. A clinical sink shall have an integral trap in which the upper portion of a visible trap seal provides a water surface. The fixture shall be designed so as to permit complete removal of the contents by siphonic or blowout action and to reseal the trap. A flushing rim shall provide water to cleanse the interior surface. The fixture shall have the flushing and cleansing characteristics of a water closet.

422.7 Prohibited usage of clinical sinks and service sinks. A clinical sink serving a soiled utility room shall not be considered as a substitute for, or be utilized as, a service sink. A service sink shall not be utilized for the disposal of urine, fecal matter or other human waste.

422.8 Ice prohibited in soiled utility room. Machines for manufacturing ice, or any device for the handling or storage of ice, shall not be located in a soiled utility room.

422.9 Sterilizer equipment requirements. The approval and installation of all sterilizers shall conform to the requirements of the New York city mechanical code.

422.9.1 Sterilizer piping. Access for the purposes of inspection and maintenance shall be provided to all sterilizer piping and devices necessary for the operation of sterilizers.

422.9.2 Steam supply. Steam supplies to sterilizers, including those connected by pipes from overhead mains or branches, shall be drained to prevent any moisture from reaching the sterilizer. The condensate drainage from the steam supply shall be discharged by gravity.

422.9.3 Steam condensate return. Steam condensate returns from sterilizers shall be a gravity return system.

422.9.4 Condensers. Pressure sterilizers shall be equipped with a means of condensing and cooling the exhaust steam vapors. Nonpressure sterilizers shall be equipped with a device that will automatically control the vapor, confining the vapors within the vessel.

422.10 Special elevations. Control valves, vacuum outlets and devices protruding from a wall of an operating, emergency, recovery, examining or delivery room, or in a corridor or other location where patients are transported on a wheeled stretcher, shall be located at an elevation that prevents bumping the patient or stretcher against the device.

SECTION PC 423 SPECIALTY PLUMBING FIXTURES

423.1 Water connections. Baptisteries, ornamental and lily pools, aquariums, ornamental fountain basins, swimming pools, and similar constructions, where provided with water supplies, shall be protected against backflow in accordance with Section PC 608.

423.2 Approval. Specialties requiring water and waste connections shall be submitted for approval.

SECTION PC 424 FAUCETS AND OTHER FIXTURE FITTINGS

424.1 Approval. Faucets and fixture fittings shall conform to ASME A112.18.1 or CSA B125. Faucets and fixture fittings that supply drinking water for human ingestion shall conform to the requirements of NSF 61, section 9. Flexible water connectors exposed to continuous pressure shall conform to the requirements of Section 605.6.

424.1.1 Faucets and supply fittings. Faucets and supply fittings shall conform

to the water consumption requirements of Section 604.4.

424.1.2 Waste fittings. Waste fittings shall conform to one of the standards listed in Tables 702.1 and 702.4 for above-ground drainage and vent pipe and fittings, or the waste fittings shall be constructed of tubular stainless steel with a minimum wall thickness of 0.012 inch (0.30 mm), tubular copper alloy having a minimum wall thickness of 0.027 inch (0.69 mm) or tubular plastic complying with ASTM F 409.

424.2 Hand showers. Hand-held showers shall conform to ASSE 1014 or CSA B125.

424.3 Shower and tub valves. Shower, tub and shower-tub combination valves shall be balanced pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016 or CSA B125. Multiple (gang) showers supplied with a single tempered water supply pipe shall have the water supply for such showers controlled by a master thermostatic mixing valve complying with ASSE 1017. Shower, tub and shower-tub combination valves and master thermostatic mixing valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions.

424.4 Hose-connected outlets. Faucets and fixture fittings with hose-connected outlets shall conform to ASME A112.18.3M.

424.5 Temperature-actuated, flow reduction valves for individual fixture fittings. Temperature-actuated, flow reduction devices, where installed for individual fixture fittings, shall conform to ASSE 1062. Such valves shall not be used alone as a substitute for the balanced pressure, thermostatic or combination shower valves required in Section 424.3.

424.6 Transfer valves. Deck-mounted bath/shower transfer valves containing an integral atmospheric vacuum breaker shall conform to the requirements of ASME A112.18.7.

SECTION PC 425

FLUSHING DEVICES FOR WATER CLOSETS AND URINALS

425.1 Flushing devices required. Each water closet, urinal, clinical sink and any plumbing fixture that depends on trap siphonage to discharge the fixture contents to the drainage system shall be provided with a flushometer valve, flushometer tank or a flush tank designed and installed to supply water in quantity and rate of flow to flush the contents of the fixture, cleanse the fixture and refill the fixture trap.

425.1.1 Separate for each fixture. A flushing device shall not serve more than one fixture.

425.2 Flushometer valves and tanks. Flushometer valves and tanks shall comply with ASSE 1037. Vacuum breakers on flushometer valves shall conform to the performance requirements of ASSE 1001 or CAN/CSA-B64.1.1. Access shall be provided to vacuum breakers. Flushometer valves shall be of the water-conservation type and shall not be utilized where the water pressure is lower than the minimum required for normal operation. When operated, the valve shall automatically complete the cycle of operation, opening fully and closing positively under the water supply pressure. Each flushometer valve shall be provided with a means for regulating the flow through the valve. The trap seal to the fixture shall be automatically refilled after each valve flushing cycle.

425.3 Flush tanks. Flush tanks equipped for manual flushing shall be controlled by a device designed to refill the tank after each discharge and to shut off completely the

water flow to the tank when the tank is filled to operational capacity. The trap seal to the fixture shall be automatically refilled after each flushing. The water supply to flush tanks equipped for automatic flushing shall be controlled with a timing device or sensor control devices.

425.3.1 Fill valves. All flush tanks shall be equipped with an antisiphon fill valve conforming to ASSE 1002 or CSA B125. The fill valve backflow preventer shall be located at least 1 inch (25 mm) above the full opening of the overflow pipe.

425.3.2 Overflows in flush tanks. Flush tanks shall be provided with overflows discharging to the water closet or urinal connected thereto and shall be sized to prevent flooding the tank at the maximum rate at which the tanks are supplied with water according to the manufacturer's design conditions. The opening of the overflow pipe shall be located above the flood level rim of the water closet or urinal or above a secondary overflow in the flush tank.

425.3.3 Sheet copper. Sheet copper utilized for flush tank linings shall conform to ASTM B 152 and shall not weigh less than 10 ounces per square foot (0.03 kg/m²).

425.3.4 Access required. All parts in a flush tank shall be accessible for repair and replacement.

425.4 Not included in the IPC.

425.5 Flush pipes and fittings. Flush pipes and fittings shall be of nonferrous material and shall conform to ASME A112.19.5 or CSA B125.

SECTION PC 426

MANUAL FOOD AND BEVERAGE DISPENSING EQUIPMENT

426.1 Approval. Manual food and beverage dispensing equipment shall conform to the requirements of NSF 18.

SECTION PC 427

FLOOR SINKS

427.1 Approval. Sanitary floor sinks shall conform to the requirements of ASME A112.6.7.

CHAPTER 5

WATER HEATERS

SECTION PC 501

GENERAL

501.1 Scope. The provisions of this chapter shall govern the materials, design and installation of water heaters and the related safety devices and appurtenances.

501.2 Water heater as space heater. Where a combination potable water heating and space heating system requires water for space heating at temperatures higher than 140°F (60°C), a master thermostatic mixing valve complying with ASSE 1017 shall be provided to limit the water supplied to the potable hot water distribution system to a temperature of 140°F (60°C) or less. The potability of the water shall be maintained throughout the system.

501.3 Drain valves. Drain valves for emptying shall be installed at the bottom of each tank-type water heater and hot water storage tank. Drain valves shall conform to ASSE 1005.

501.4 Location. Water heaters and storage tanks shall be located and connected so

as to provide access for observation, maintenance, servicing and replacement.

501.5 Water heater labeling. All water heaters shall be third-party certified.

501.6 Water temperature control in piping from tankless heaters. The temperature of water from tankless water heaters shall be a maximum of 140°F (60°C) when intended for domestic uses. This provision shall not supersede the requirement for protective shower valves in accordance with Section 424.3.

501.7 Pressure marking of storage tanks. Storage tanks and water heaters installed for domestic hot water shall have the maximum allowable working pressure clearly and indelibly stamped in the metal or marked on a plate welded thereto or otherwise permanently attached. Such markings shall be in an accessible position outside of the tank so as to make inspection or reinspection readily possible.

501.8 Temperature controls. All hot water supply systems shall be equipped with automatic temperature controls capable of adjustments from the lowest to the highest acceptable temperature settings for the intended temperature operating range.

SECTION PC 502 INSTALLATION

502.1 General. Water heaters shall be installed in accordance with the manufacturer's installation instructions. Oil-fired water heaters shall conform to the requirements of this code and the New York city mechanical code. Electric water heaters shall conform to the requirements of this code and provisions of the New York city electrical code. Gas-fired water heaters shall conform to the requirements of the New York city fuel gas code.

502.2 Rooms used as a plenum. Water heaters using solid, liquid or gas fuel shall not be installed in a room containing air-handling machinery when such room is used as a plenum.

502.3 Water heaters installed in attics. Electric water heaters only shall be installed in attics. An attic containing a water heater shall be provided with an opening and unobstructed passageway large enough to allow removal of the water heater. The passageway shall not be less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) in length when measured along the centerline of the passageway from the opening to the water heater. The passage way shall have continuous solid flooring not less than 24 inches (610 mm) wide. A level service space at least 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the water heater. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm) where such dimensions are large enough to allow removal of the water heater.

502.4 Seismic supports. Where earthquake loads are applicable in accordance with the New York city building code, water heater supports shall be designed and installed for the seismic forces in accordance with the New York city building code.

SECTION PC 503 CONNECTIONS

503.1 Cold water line valve. The cold water branch line from the main water supply line to each hot water storage tank or water heater shall be provided with a valve, located near the equipment and serving only the hot water storage tank or water heater. The valve shall not interfere or cause a disruption of the cold water supply to the remainder of the cold water system. The valve shall be provided with access on the same floor level as the water heater served.

503.2 Water circulation. *The method of connecting a circulating water heater to the tank shall provide proper circulation of water through the water heater. The pipe or tubes required for the installation of appliances that will draw from the water heater or storage tank shall comply with the provisions of this code for material and installation.*

**SECTION PC 504
SAFETY DEVICES**

504.1 Antisiphon devices. *An approved means, such as a cold water “dip” tube with a hole at the top or a vacuum relief valve installed in the cold water supply line above the top of the heater or tank, shall be provided to prevent siphoning of any storage water heater or tank.*

504.2 Vacuum relief valve. *Bottom fed water heaters and bottom fed tanks connected to water heaters shall have a vacuum relief valve installed. The vacuum relief valve shall comply with ANSI Z21.22.*

504.3 Shutdown. *A means for disconnecting an electric hot water supply system from its energy supply shall be provided in accordance with the New York city electrical code. A separate valve shall be provided to shut off the energy fuel supply to all other types of hot water supply systems.*

504.4 Relief valve. *All storage water heaters operating above atmospheric pressure shall be provided with an approved, self-closing (levered) pressure relief valve and temperature relief valve or combination thereof. The relief valve shall conform to ANSI Z21.22. The relief valve shall not be used as a means of controlling thermal expansion.*

504.4.1 Installation. *Such valves shall be installed in the shell of the water heater tank. Temperature relief valves shall be so located in the tank as to be actuated by the water in the top 6 inches (152 mm) of the tank served. For installations with separate storage tanks, the valves shall be installed on the tank and there shall not be any type of valve installed between the water heater and the storage tank. There shall not be a check valve or shutoff valve between a relief valve and the heater or tank served.*

504.5 Relief valve approval. *Temperature and pressure relief valves, or combinations thereof, and energy cutoff devices shall bear the label of an approved agency and shall have a temperature setting of not more than 210°F (99°C) and a pressure setting not exceeding the tank or water heater manufacturer's rated working pressure or 150 psi (1035 kPa), whichever is less. The relieving capacity of each pressure relief valve and each temperature relief valve shall equal or exceed the heat input to the water heater or storage tank.*

504.6 Relief outlet waste. *The outlet of a pressure, temperature or other relief valve shall not be directly connected to the drainage system.*

504.6.1 Discharge. *The relief valve shall discharge full size to a safe place of disposal such as the floor, outside the building, or an indirect waste receptor. The discharge pipe shall not have any trapped sections and shall have a visible air gap or air gap fitting located in the same room as the water heater. The outlet end of the discharge pipe shall not be threaded and such discharge pipe shall not have a valve or tee installed. Relief valve piping shall be piped independent of other equipment drains or relief valve discharge piping to the disposal point. Such pipe shall be installed in a manner that does not cause personal injury to occupants in the immediate area or structural damage to the building.*

504.6.2 Materials. *Relief valve discharge piping shall be of those materials listed in Section 605.5 or shall be tested, rated and approved for such use in*

accordance with ASME A112.4.1. Piping from safety pan drains shall be of those materials listed in Table 605.4.

504.7 Required pan. Where water heaters or hot water storage tanks are installed in locations where leakage of the tanks or connections will cause damage, the tank or water heater shall be installed in a galvanized steel pan having a minimum thickness of 24 gage, or other pans approved for such use.

504.7.1 Pan size and drain. The pan shall be not less than 1.5 inches (38 mm) deep and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a minimum diameter of $\frac{3}{4}$ inch (19 mm).

504.7.2 Pan drain termination. The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor or floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface.

504.8 Flow sensing switch. On copper fin tube, gas fired domestic hot water heaters, a flow switch shall be provided to interrupt the gas supply to the heater in the event water flow through the coil is interrupted.

SECTION PC 505 INSULATION

505.1 Unfired vessel insulation. Unfired hot water storage tanks shall be insulated so that heat loss is limited to a maximum of 15 British thermal units per hour (Btu/h) per square foot (47 W/m^2) of external tank surface area. For purposes of determining this heat loss, the design ambient temperature shall not be higher than 65°F (18°C).

CHAPTER 6 WATER SUPPLY AND DISTRIBUTION

SECTION PC 601 GENERAL

601.1 Scope. This chapter shall govern the materials, design and installation of water supply systems, both hot and cold, for utilization in connection with human occupancy and habitation and shall govern the installation of individual water supply systems.

601.2 Solar energy utilization. Solar energy systems used for heating potable water or using an independent medium for heating potable water shall comply with the applicable requirements of this code. The use of solar energy shall not compromise the requirements for cross connection or protection of the potable water supply system required by this code.

601.3 Existing piping used for grounding. Existing metallic water service piping used for electrical grounding shall not be replaced with nonmetallic pipe or tubing until other approved means of grounding is provided.

601.4 Tests. The potable water distribution system shall be tested in accordance with Section 312.5.

601.5 Water Supply. Water supply infrastructure to the building shall be applied for and regulated by the city department of environmental protection.

**SECTION PC 602
WATER REQUIRED**

602.1 General. Every structure equipped with plumbing fixtures and utilized for human occupancy or habitation shall be provided with a potable supply of water in the amounts and at the pressures specified in this chapter.

602.2 Potable water required. Only potable water shall be supplied to plumbing fixtures that provide water for drinking, bathing or culinary purposes, or for the processing of food, medical or pharmaceutical products. Unless otherwise provided in this code, potable water shall be supplied to all plumbing fixtures.

602.3 Individual water supply. Where a potable public water supply is not available, individual sources of potable water supply shall be utilized.

602.3.1 Sources. Dependent on geological and soil conditions and the amount of rainfall, individual water supplies are of the following types: drilled well, driven well, dug well, bored well, or cistern. Surface bodies of water and land cisterns shall not be sources of individual water supply unless properly treated by approved means to prevent contamination.

602.3.2 Minimum quantity. The combined capacity of the source and storage in an individual water supply system shall supply the fixtures with water at rates and pressures as required by this chapter.

602.3.3 Water quality. Water from an individual water supply shall be approved as potable by the authority having jurisdiction prior to connection to the plumbing system.

602.3.4 Disinfection of system. After construction or major repair, the individual water supply system shall be purged of deleterious matter and disinfected in accordance with Section PC 610.

602.3.5 Pumps. Pumps shall be rated for the transport of potable water. Pumps in an individual water supply system shall be constructed and installed so as to prevent contamination from entering a potable water supply through the pump units. Pumps shall be sealed to the well casing or covered with a water-tight seal. Pumps shall be designed to maintain a prime and installed such that ready access is provided to the pump parts of the entire assembly for repairs.

602.3.5.1 Pump enclosure. The pump room or enclosure around a well pump shall be drained and protected from freezing by heating or other approved means. Where pumps are installed in basements, such pumps shall be mounted on a block or shelf not less than 18 inches (457 mm) above the basement floor. Well pits shall be prohibited.

**SECTION PC 603
WATER SERVICE**

603.1 Size of water service pipe. The water service pipe shall be sized to supply water to the structure in the quantities and at the pressures required in this code. The minimum diameter of water service pipe shall be 1 inch (25mm).

603.2 Separation of water service and building sewer. Water service pipe and the building sewer shall be separated by 5 feet (1524 mm) of undisturbed or compacted earth.

Exceptions:

1. The required separation distance shall not apply where the bottom of the water service pipe within 5 feet (1524 mm) of the sewer is a minimum of 12

inches (305 mm) above the top of the highest point of the sewer and the pipe materials conform to Section 703.1.

2. Water service pipe is permitted to be located in the same trench with a building sewer, provided such sewer is constructed of materials listed in Table 702.2.
3. The required separation distance shall not apply where a water service pipe crosses a sewer pipe provided the water service pipe is sleeved to at least 5 feet (1524 mm) horizontally from the sewer pipe centerline, on both sides of such crossing with pipe materials listed in Table 605.3, Table 702.2 or Table 702.3.

603.2.1 Water service near sources of pollution. Potable water service pipes shall not be located in, under or above cesspools, septic tanks, septic tank drainage fields or seepage pits (see Section 605.1 for soil and groundwater conditions) and shall be separated by a minimum of 10 feet (3048 mm) and shall meet all New York city department of environmental protection requirements.

SECTION PC 604

DESIGN OF BUILDING WATER DISTRIBUTION SYSTEM

604.1 General. The design of the water distribution system shall conform to accepted engineering practice. Methods utilized to determine pipe sizes shall be approved.

604.2 System interconnection. At the points of interconnection between the hot and cold water supply piping systems and the individual fixtures, appliances or devices, provisions shall be made to prevent flow between such piping systems.

604.3 Water distribution system design criteria. The water distribution system shall be designed, and pipe sizes shall be selected such that under conditions of peak demand, the capacities at the fixture supply pipe outlets shall not be less than shown in Table 604.3. The minimum flow rate and flow pressure provided to fixtures and appliances not listed in Table 604.3 shall be in accordance with the manufacturer's installation instructions.

TABLE 604.3
WATER DISTRIBUTION SYSTEM DESIGN CRITERIA
REQUIRED CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

FIXTURE SUPPLY OUTLET SERVING	FLOW RATE^a (gpm)	FLOW PRESSURE^b (psi)
Bath tub	4	8
Bidet	2	4
Combination fixture	4	8
Dishwasher, residential	2.75	8
Drinking fountain	0.75	8
Laundry tray	4	8
Lavatory	2	8
Shower	3	8
Shower, temperature controlled	3	20
Sillcock, hose bibb	5	8
Sink, residential	2.5	8
Sink, service	3	8
Urinal, valve	15	15
Water closet, blow out, flushometer valve	35	25
Water closet, flushometer tank	1.6	15
Water closet, siphonic, flushometer valve	25	15
Water closet, tank, close coupled	3	8
Water closet, tank, one piece	6	20

For SI: 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 3.785 L/m.

For additional requirements for flow rates and quantities, see Section 604.4.

Minimum pressures as per manufacturer's recommendations.

604.4 Maximum flow and water consumption. The maximum water consumption flow rates and quantities for all plumbing fixtures and fixture fittings shall be in accordance with Table 604.4.

Exceptions:

1. Blowout design water closets (3.5 gallons (13 L) per flushing cycle).
2. Vegetable sprays.
3. Clinical sinks (4.5 gallons (17 L) per flushing cycle).
4. Service sinks.
5. Emergency showers.

**TABLE 604.4
MAXIMUM FLOW RATES AND CONSUMPTION FOR
PLUMBING FIXTURES AND FIXTURE FITTINGS**

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY^b
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public, (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head ^a	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per flushing cycle
Water closet	1.6 gallons per flushing cycle

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

A hand-held shower spray is a shower head.

b. Consumption tolerances shall be determined from referenced standards.

604.5 Size of fixture supply. *The minimum size of a fixture supply pipe shall be as shown in Table 604.5. The fixture supply pipe shall not terminate more than 24 inches (610 mm) from the point of connection to the fixture. Each fixture supply shall have a stop valve. A reduced-size flexible water connector installed between the supply pipe and the fixture shall be of an approved type. The connector shall be used singularly. Coupling of two or more connectors shall not be allowed. The supply pipe shall extend to the floor or wall adjacent to the fixture. The minimum size of individual distribution lines utilized in parallel water distribution systems shall be as shown in Table 604.5.*

TABLE 604.5**MINIMUM SIZES OF FIXTURE WATER SUPPLY PIPES**

FIXTURE	MINIMUM PIPE SIZE (inch)
Bathtubs ^a (60 "x 32 " and smaller)	1/2
Bathtubs ^a (larger than 60 " x 32)	1/2
Bidet	3/8
Combination sink and tray	1/2
Dishwasher, domestic ^a	1/2
Drinking fountain	3/8
Hose bibbs	1/2
Kitchen sink ^a	1/2
Laundry, 1, 2 or 3 compartments ^a	1/2
Lavatory	3/8
Shower, single head ^a	1/2
Sinks, flushing rim	3/4
Sinks, service	1/2
Urinal, flush tank	1/2
Urinal, flush valve	3/4
Wall hydrant	1/2
Water closet, flush tank	3/8
Water closet, flush valve	1
Water closet, flushometer tank	3/8
Water closet, one piece ^a	1/2

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.

604.6 Variable street pressures. Where street water main pressures fluctuate, the building water distribution system shall be designed for the minimum pressure available.

604.7 Inadequate water pressure. Wherever water pressure from the street main or other source of supply is insufficient to provide flow pressures at fixture outlets as required under Table 604.3, a water pressure booster system conforming to Section 606.5 shall be installed on the building water supply system.

604.8 Water-pressure reducing valve or regulator. Where water pressure within a building exceeds 85 psi (586 kPa) static, an approved water-pressure reducing valve conforming to ASSE 1003 with strainer shall be installed to reduce the pressure in the building water distribution piping to 85 psi (586 kPa) static or less.

Exception: Service lines to sill cocks and outside hydrants, and main supply

risers where pressure from the mains is reduced to 85 psi (586 kPa) or less at individual fixtures.

604.8.1 Valve design. The pressure-reducing valve shall be designed to remain open to permit uninterrupted water flow in case of valve failure.

604.8.2 Repair and removal. All water-pressure reducing valves, regulators and strainers shall be so constructed and installed as to permit repair or removal of parts without breaking a pipeline or removing the valve and strainer from the pipeline.

604.9 Water hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves are utilized. Water-hammer arrestors shall be installed in accordance with the manufacturer's specifications. Water-hammer arrestors shall conform to ASSE 1010 and PDI WH201.

604.10 Parallel water distribution system manifolds. Hot water and cold water manifolds installed with parallel connected individual distribution lines to each fixture or fixture fitting shall be designed in accordance with Sections 604.10.1 through 604.10.3.

604.10.1 Manifold sizing. Hot water and cold water manifolds shall be sized in accordance with Table 604.10.1. The total gallons per minute is the demand of all outlets supplied.

**TABLE 604.10.1
MANIFOLD SIZING**

NOMINAL SIZE INTERNAL DIAMETER (inches)	MAXIMUM DEMAND (gpm)	
	Velocity at 4 feet per second	Velocity at 8 feet per second
1/2	2	5
3/4	6	11
1	10	20
1 1/4	15	31
1 1/2	22	44

For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m, 1 foot per second = 0.305 m/s.

604.10.2 Valves. Individual fixture shutoff valves installed at the manifold shall be identified as to the fixture being supplied.

604.10.3 Access. Access shall be provided to manifolds.

604.11 Individual pressure balancing in-line valves for individual fixture fittings. Where individual pressure balancing in-line valves for individual fixture fittings are installed, such valves shall comply with ASSE 1066. Such valves shall be installed in an accessible location and shall not be utilized alone as a substitute for the balanced pressure, thermostatic or combination shower valves required in Section 424.3.

SECTION PC 605
MATERIALS, JOINTS AND CONNECTIONS

605.1 Soil and ground water. The installation of a water service or water distribution pipe shall be prohibited in soil and groundwater contaminated with solvents, fuels, organic compounds or other detrimental materials causing permeation, corrosion, degradation or structural failure of the piping material. Where detrimental conditions are suspected, a chemical analysis of the soil and ground water conditions shall be required to ascertain the acceptability of the water service or water distribution piping material for the specific installation. Where detrimental conditions exist, approved alternative materials or routing shall be required.

605.2 Reserved.

605.3 Water service pipe. Water service pipe shall conform to NSF 61 and shall conform to one of the standards listed in Table 605.3. All ductile iron water pipe shall be cement mortar lined in accordance with AWWA C104.

605.3.1 Dual check-valve-type backflow preventer. Where a dual check-valve backflow preventer is installed on the water supply system, it shall comply with ASSE 1024.

TABLE 605.3
WATER SERVICE PIPE

MATERIAL	STANDARD
Brass pipe	ASTM B 43
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tubing (Type K)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447
Ductile iron water pipe	AWWA C151; AWWA C115
Stainless steel pipe (Type 304/304L)	ASTM A 312; ASTM A 778
Stainless steel pipe (Type 316/316L)	ASTM A 312; ASTM A 778

605.4 Water distribution pipe. Water distribution pipe shall conform to NSF 61 and shall conform to one of the standards listed in Table 605.4.

TABLE 605.4
WATER DISTRIBUTION PIPE

MATERIAL	STANDARD
Brass pipe	ASTM B 43
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tubing (Type K, L)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447
Stainless steel pipe (Type 304/304L)	ASTM A 312; ASTM A 778
Stainless steel pipe (Type 316/316L)	ASTM A 312; ASTM A 778

605.5 Fittings. Pipe fittings shall be approved for installation with the piping material installed and shall conform to the respective pipe standards or one of the standards listed in Table 605.5. All pipe fittings utilized in water supply systems shall also conform to NSF 61. The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping. Ductile and gray iron pipe fittings

shall be cement mortar lined in accordance with AWWA C104.

605.5.1 Mechanically formed tee fittings. Mechanically extracted outlets shall have a height not less than three times the thickness of the branch tube wall.

605.5.1.1 Full flow assurance. Branch tubes shall not restrict the flow in the run tube. A dimple/depth stop shall be formed in the branch tube to ensure that penetration into the collar is of the correct depth. For inspection purposes, a second dimple shall be placed 0.25 inch (6.4 mm) above the first dimple. Dimples shall be aligned with the tube run.

605.5.1.2 Brazed joints. Mechanically formed tee fittings shall be brazed in accordance with Section 605.14.1.

**TABLE 605.5
PIPE FITTINGS**

MATERIAL	STANDARD
Cast-iron	ASME B16.4; ASME B16.12
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29
Gray iron and ductile iron	AWWA C 110; AWWA C 153
Stainless steel (Type 304/304L)	ASTM A 312; ASTM A 778
Stainless steel (Type 316/316L)	ASTM A 312; ASTM A 778
Steel	ASME B16.9; ASME B16.11; ASME B16.28

605.6 Flexible water connectors. Flexible water connectors exposed to continuous pressure shall conform to IAPMO PS 74 95 and PS 48 92, shall not exceed 24 inches (610 mm), shall be used in exposed locations only and shall be used singularly, that is, two connectors can not be joined.

605.7 Valves. All valves shall be of the approved type and compatible with the type of piping material installed in the system.

605.8 Manufactured pipe nipples. Manufactured pipe nipples shall conform to the standard listed in Table 605.8.

**TABLE 605.8
MANUFACTURED PIPE NIPPLES**

MATERIAL	STANDARD
Brass-, copper-, chromium-plated	ASTM B 687

605.9 Prohibited joints and connections. The following types of joints and connections shall be prohibited:

1. Cement or concrete joints.
2. Joints made with fittings not approved for the specific installation.
3. Solvent-cement joints between different types of plastic pipe.
4. Saddle-type fittings.

605.10 and 605.11 Reserved.

605.12 Brass. Joints between brass pipe or fittings shall comply with Sections 605.12.1 through 605.12.3.

605.12.1 Brazed joints. All joint surfaces shall be cleaned. An approved flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWSA5.8.

605.12.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.12.3 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

605.13 Gray iron and ductile iron joints. Joints for gray and ductile iron pipe and fittings shall comply with AWWA C111 and shall be installed in accordance with the manufacturer's installation instructions.

605.14 Copper pipe. Joints between copper or copper-alloy pipe or fittings shall comply with Sections 605.14.1 through 605.14.4.

605.14.1 Brazed joints. All joint surfaces shall be cleaned. An approved flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.

605.14.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.14.3 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32. The joining of water supply piping shall be made with lead-free solder and fluxes. "Lead free" shall mean a chemical composition equal to or less than 0.2-percent lead.

605.14.4 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

605.15 Copper tubing. Joints between copper or copper-alloy tubing or fittings shall comply with Sections 605.15.1 through 605.15.4.

605.15.1 Brazed joints. All joint surfaces shall be cleaned. An approved flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.

605.15.2 Flared joints. Flared joints for water pipe shall be made by a tool designed for that operation.

605.15.3 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.15.4 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32. The joining of water supply piping shall be made with lead-free solders and fluxes. "Lead free" shall mean a chemical composition equal to or less than 0.2-percent lead.

605.16 through 605.21 Reserved.

605.22 Stainless steel. Joints between stainless steel pipe and fittings shall comply with Sections 605.22.1 and 605.22.2.

605.22.1 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.22.2 Welded joints. All joint surfaces shall be cleaned. The joint shall be welded autogenously or with an approved filler metal as referenced in ASTM A 312.

605.23 Joints between different materials. Joints between different piping materials shall be made with a mechanical joint of the compression or mechanical-sealing type, or as permitted in Sections 605.23.1 and 605.23.3. Connectors or adapters shall have an elastomeric seal conforming to ASTM D 1869 or ASTM F 477. Joints shall be installed in accordance with the manufacturer's instructions.

605.23.1 Copper or copper-alloy tubing to galvanized steel pipe. Joints between copper or copper-alloy tubing and galvanized steel pipe shall be made with a brass fitting or dielectric fitting. The copper tubing shall be soldered to the fitting in an approved manner, and the fitting shall be screwed to the threaded pipe.

605.23.2 Reserved.

605.23.3 Stainless steel. Joints between stainless steel and different piping materials shall be made with a mechanical joint of the compression or mechanical sealing type or a dielectric fitting.

SECTION PC 606

INSTALLATION OF THE BUILDING WATER DISTRIBUTION SYSTEM

606.1 Location of full-open valves. Full-open valves shall be installed in the following locations:

1. On the building water service pipe from the public water supply near the curb.
2. On the water distribution supply pipe at the entrance into the structure.
3. On the discharge side of every water meter.
4. On the base of every water riser pipe in occupancies other than multiple-family residential occupancies that are two stories or less in height and in one- and two-family residential occupancies.
5. On the top of every water down-feed pipe in occupancies other than one- and two-family residential occupancies.
6. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops.
7. On the water supply pipe to and from a gravity or pressurized water tank.
8. On the water supply pipe to every water heater.

606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one- and two-family residential occupancies, and other than in individual guestrooms that are provided with unit shutoff valves in hotels, motels, boarding houses and similar occupancies.
2. On the water supply pipe to each sillcock.
3. On the water supply pipe to each appliance or mechanical equipment.

606.3 Access to valves. Access shall be provided to all required full-open valves and shutoff valves.

606.4 Valve identification. Service and hose bibb valves shall be identified. All other valves installed in locations that are not adjacent to the fixture or appliance shall be identified, indicating the fixture or appliance served.

606.5 Water pressure booster systems. Water pressure booster systems shall be provided as required by Sections 606.5.1 through 606.5.10.

606.5.1 Water pressure booster systems required. Where the water pressure in the public water main or individual water supply system is insufficient to supply the minimum pressures and quantities specified in this code, the supply shall be

supplemented by an elevated water tank, a hydropneumatic pressure booster system or a water pressure booster pump installed in accordance with 606.5.5.

606.5.2 Support. All water supply tanks shall be supported in accordance with the New York city building code.

606.5.3 Covers. All water supply tanks shall be covered to keep out unauthorized persons, dirt and vermin. The covers of gravity tanks shall be vented with a return bend vent pipe with an area not less than the area of the down-feed riser pipe, and the vent shall be screened with a corrosion-resistant screen of not less than 16 by 20 mesh per inch (6 by 8 mesh per cm).

606.5.4 Overflows. Each gravity or suction water supply tank shall be provided with an overflow not smaller than shown in Table 606.5.4(1) and/or Table 606.5.4(2) The gallons per minute listed in the tables shall be the total automatic pump capacity connected to the tank. The overflow outlet shall discharge within 6 inches (152 mm) of a roof or roof drain, or over an open water supplied fixture. The overflow discharge shall be provided with durable screening with openings of not more than 1/8 inch.

**TABLE 606.5.4(1)
SIZE OF OVERFLOWS FOR GRAVITY AND
SUCTION TANKS
(See Figure 606.5.4 (Single Orifice/Multiple Orifice))**

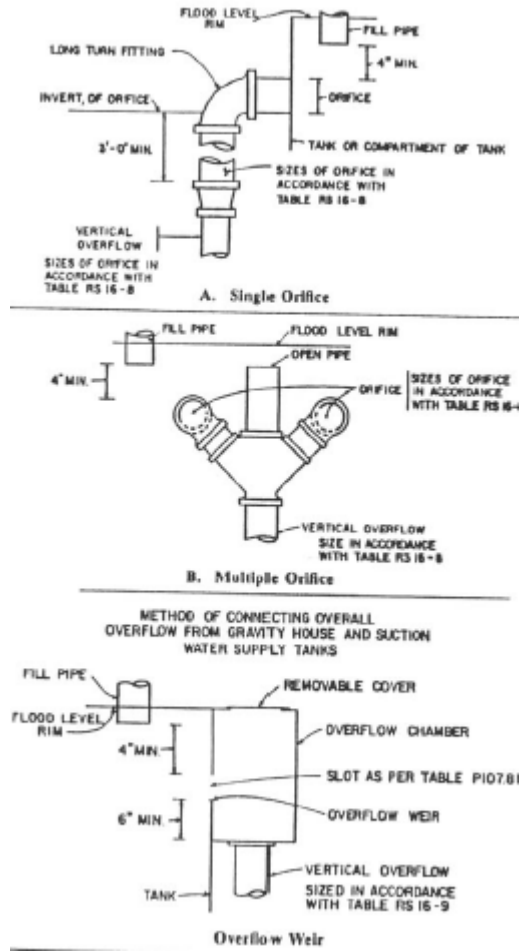
OVERFLOW PIPE SIZE (inches)	MAXIMUM ALLOWABLE GPM FOR EACH ORIFICE OPENING INTO TANK	MAXIMUM ALLOWABLE GPM FOR VERTICAL OVERFLOW (PIPING CONNECTING ORIFICES)
2	19	25
3	43	75
4	90	163
5	159	296
6	257	472
8	505	1,020
10	890	1,870
12	1,400	2,967

**TABLE 606.5.4(2)
SIZE OF WEIRS FOR GRAVITY AND SUCTION TANKS
(See Figure (Overflow Weir))_**

SLOTTED WEIR OPENING INTO TANK BETWEEN OVERFLOW CHAMBER AND WATER COMPARTMENT^a	MAXIMUM GPM ALLOWABLE FOR WEIR
3 inches x 24 inches	381
3 1/2 inches x 24 inches	475
4 1/2 inches x 24 inches	685
4 1/2 inches x 36 inches	1,037
6 inches x 36 inches	1,569
6 inches x 48 inches	2,100

- a. Bottom of the overflow chamber must be at least 6 inches below weir.
- b. Bottom outlet shall be provided in the chamber of sizes based on capacities as indicated in Table 606.5.4(1).

FIGURE 606.5.4



606.5.4.1 Water piping control and location. *Water inlets to gravity house tanks shall be controlled by a ball cock or other automatic supply valve or emergency electrical cut-off so installed as to prevent the overflow of the tank in the event that the pumps filling the tanks do not shut off at the predetermined level or the street pressure rises to a point where it can fill the tank. The water inlet to a suction tank shall be controlled by a ball cock or other automatic supply valve. The inlet shall be terminated so as to provide an accepted air gap but in no case shall it be less than 4 inches (102 mm) above the top of the overflow. The outlet from a gravity tank to the distribution system shall be equipped with a strainer located at least 2 inches (51 mm) above the tank bottom to prevent solids from entering the piping system. All down-feed supplies from a tank cross-connected in any manner with distribution supply piping in a building supplied by direct street or pump pressure, shall be equipped with a check valve on the main cold water down supply to prevent backflow of water into the roof tank.*

606.5.4.2 Drain pipes for emptying tanks. *Each tank or tank compartment shall be provided, at its lowest point, with a valved pipe to permit emptying the tank. The drain pipe shall discharge as required for the overflow pipe, and shall be at least 4 inches (102 mm) in diameter.*

606.5.4.3 Prohibited location. *Potable water gravity tanks or manholes of potable water pressure tanks shall not be located directly under any soil or waste piping.*

606.5.4.4 Design. *The gravity house supply tank shall be built of wood, steel, or equivalent materials. Subject to the approval of the Commissioner, additional linings may be installed in the tank, provided the lining material does not have a toxic or otherwise objectionable effect on the potable water. Steel tanks shall be painted both inside and outside. If a tank with a dividing partition is installed, the total capacity of the combined compartments shall be considered as the capacity of a single tank for the purpose of determining storage capacities of the tank.*

606.5.4.5 Cleaning or painting. *Water tanks shall be cleaned and painted in accordance with the following:*

1. *No water tank of any kind that is part of a building water supply system used for potable purposes shall be cleaned with any material or painted on the inside with any material that will have a toxic or otherwise objectionable effect on the potability of the water supply when the tank is put into service. No lead paint shall be used. The water supply connections to and from a tank shall be disconnected or plugged while the tank is being cleaned or painted to prevent any foreign fluid or substance from entering the distribution piping. Where the air in a tank may be insufficient to sustain human life, or may contain an injurious gas, adequate measures shall be taken for the protection of the workers.*
2. *After the tank has been cleaned or painted, it shall be disinfected according to the following procedure before it is put back in service:*
 - 2.1. *The underside of the top, the bottom, and the walls shall be washed with a hypochlorite solution containing 100 or more parts per million of available chlorine.*
 - 2.2. *The tank shall be filled with water to which hypochlorite solution is added during the filling in sufficient quantity so that the treated water in the tank will contain at least 10 parts per million of*

available chlorine.

- 2.3. The chlorinated water shall be allowed to remain in the tank for two hours.
- 2.4. Finally, the tank shall be drained completely before refilling.
3. House and suction tanks shall be drained and cleaned at least once a year.

606.5.5 Low-pressure cutoff required on booster pumps. A low-pressure cutoff shall be installed on all booster pumps in a water pressure booster system to prevent creation of a vacuum or negative pressure on the suction side of the pump when a positive pressure of 10 psi (68.94 kPa) or less occurs on the suction side of the pump.

606.5.6 and 606.5.7 Reserved.

606.5.8 Prohibited location of potable supply tanks. Potable water gravity tanks or manholes of potable water pressure tanks shall not be located directly under any soil or waste piping or any source of contamination.

606.5.9 Pressure tanks, vacuum relief. All water pressure tanks shall be provided with a vacuum relief valve at the top of the tank that will operate up to a maximum water pressure of 200 psi (1380 kPa) and up to a maximum temperature of 200°F (93°C). The minimum size of such vacuum relief valve shall be 0.50 inch (12.7 mm).

Exception: This section shall not apply to pressurized captive air diaphragm/bladder tanks.

606.5.10 Pressure relief for tanks. Every pressure tank in a hydropneumatic pressure booster system shall be protected with a pressure relief valve. The pressure relief valve shall be set at a maximum pressure equal to the rating of the tank. The relief valve shall be installed on the supply pipe to the tank or on the tank. The relief valve shall discharge by gravity to a safe place of disposal.

606.6 Water supply system test. Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested in accordance with Section PC 312.

SECTION PC 607 HOT WATER SUPPLY SYSTEM

607.1 Where required. In residential occupancies, hot water shall be supplied to all plumbing fixtures and equipment utilized for bathing, washing, culinary purposes, cleansing, laundry or building maintenance. In nonresidential occupancies, hot water shall be supplied to all plumbing fixtures and equipment utilized for culinary purposes, cleansing, laundry or building maintenance. In nonresidential occupancies, hot water or tempered water shall be supplied for bathing and washing purposes. Tempered water shall be delivered for accessible hand-washing facilities.

607.2 Hot water supply temperature maintenance. Where the developed length of hot water piping from the source of hot water supply to the farthest fixture exceeds 20 feet (6096 mm), the hot water supply system shall be provided with a method of maintaining the temperature in accordance with the New York state energy conservation construction code.

607.2.1 Piping insulation. Circulating hot water system piping shall be insulated in accordance with the New York state energy conservation construction code.

607.2.2 Hot water system controls. Automatic circulating hot water system

pumps or heat trace shall be arranged to be conveniently turned off, automatically or

manually, when the hot water system is not in operation.

607.2.3 Recirculating pump. *Where a thermostatic mixing valve is used in a system with a hot water recirculating pump, the hot water or tempered water return line shall be routed to the cold water inlet pipe of the water heater and the cold water inlet pipe or the hot water return connection of the thermostatic mixing valve.*

607.3 Thermal expansion control. *A means of controlling increased pressure caused by thermal expansion shall be provided where required in accordance with Sections 607.3.1 and 607.3.2.*

607.3.1 Pressure-reducing valve. *For water service system sizes up to and including 2 inches (51 mm), a device for controlling pressure shall be installed where, because of thermal expansion, the pressure on the downstream side of a pressure-reducing valve exceeds the pressure-reducing valve setting.*

607.3.2 Backflow prevention device or check valve. *Where a backflow prevention device, check valve or other device is installed on a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.*

607.4 Flow of hot water to fixtures. *Fixture fittings, faucets and diverters shall be installed and adjusted so that the flow of hot water from the fittings corresponds to the left-hand side of the fixture fitting.*

Exception: *Shower and tub/shower mixing valves conforming to ASSE 1016, where the flow of hot water corresponds to the markings on the device.*

SECTION PC 608

PROTECTION OF POTABLE WATER SUPPLY

608.1 General. *A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from nonpotable liquids, solids or gases being introduced into the potable water supply through cross-connections or any other piping connections to the system. Backflow preventer applications shall conform to Table 608.1, except as specifically stated in Sections 608.2 through 608.16.9.*

TABLE 608.1
APPLICATION OF BACKFLOW PREVENTERS

DEVICE	DEGREE OF HAZARD^a	APPLICATION^b	APPLICABLE STANDARDS
Air gap	High or low hazard	Backsiphonage or backpressure	ASME A112.1.2
Air gap fittings for use with plumbing fixtures, appliances and appurtenances	High or low hazard	Backsiphonage or backpressure	ASME A112.1.3
Antisiphon-type fill valves for gravity water closet flush tanks	High hazard	Backsiphonage only	ASSE 1002, CSA B125
Barometric loop	High or low hazard	Backsiphonage only	(See Section 608.13.4)
Reduced pressure principle backflow preventer and reduced pressure principle fire protection backflow preventer	High or low hazard	Backpressure or backsiphonage Sizes 3/8" - 16 "	ASSE 1013, AWWA C511, CAN/CSA B64.4
Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backsiphonage or backpressure (Fire sprinkler systems)	ASSE 1047
Double check backflow prevention assembly and double check fire protection backflow prevention assembly	Low hazard	Backpressure or backsiphonage Sizes 3/8" - 16 "	ASSE 1015, AWWA C510
Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage (Fire sprinkler systems) Sizes 2 " - 16 "	ASSE 1048
Dual-check-valve-type backflow preventer	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 1 "	ASSE 1024
Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 3/4"	ASSE 1012, CAN/CSA B64.3
Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 3/8"	ASSE 1022
Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/4" - 4 "	ASSE 1001, CAN/CSA B64.1.1
Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2" - 2 "	ASSE 1020
Hose-connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage Sizes 1/2", 3/4", 1"	ASSE 1011, CAN/CSA B64.2
Vacuum breaker wall hydrants, frost-resistant, automatic draining type	High or low hazard	Low head backpressure or backsiphonage Sizes 3/4", 1"	ASSE 1019, CAN/CSA B64.2.2
Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and backsiphonage	ASSE 1035, CSA B64.7
Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure backpressure or backsiphonage Sizes 1/2" - 1"	ASSE 1052
Spillproof vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/4" - 2"	ASSE 1056

For SI: 1 inch = 25.4 mm.

Low hazard

High hazard-See Contamination (Section 202).

See Backpressure (Section 202).

See Backpressure, lowhead (Section 202).

See Backsiphonage (Section 202).

608.2 Plumbing fixtures. *The supply lines or fittings for every plumbing fixture shall be installed so as to prevent backflow.*

608.3 Devices, appurtenances, appliances and apparatus. *All devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, distillation, processing, cooling, or storage of ice or foods, and that connect to the water supply system, shall be provided with protection against backflow and contamination of the water supply system. Water pumps, filters, softeners, tanks and all other appliances and devices that handle or treat potable water shall be protected against contamination.*

608.3.1 Special equipment, water supply protection. *The water supply for hospital fixtures shall be protected against backflow with a reduced pressure principle backflow preventer, an atmospheric or spill-proof vacuum breaker, or an air gap. Vacuum breakers for bedpan washer hoses shall not be located less than 5 feet (1524 mm) above the floor. Vacuum breakers for hose connections in health care or laboratory areas shall not be less than 6 feet (1829 mm) above the floor.*

608.4 Water service piping. *Water service piping shall be protected in accordance with Sections 603.2 and 603.2.1.*

608.5 Chemicals and other substances. *Chemicals and other substances that produce either toxic conditions, taste, odor or discoloration in a potable water system shall not be introduced into, or utilized in, such systems.*

608.6 Cross-connection control. *Cross connections shall be prohibited, except where approved protective devices are installed.*

608.6.1 Private water supplies. *Cross connections between a private water supply and a potable public supply shall be prohibited.*

608.7 Stop-and-waste valves prohibited. *Combination stop-and-waste valves or cocks shall not be installed underground.*

608.8 Identification of potable and nonpotable water. *In all buildings where two or more water distribution systems, one potable water and the other nonpotable water, are installed, each system shall be identified either by color marking or metal tags in accordance with Sections 608.8.1 through 608.8.3.*

608.8.1 Information. *Pipe identification shall include the contents of the piping system and an arrow indicating the direction of flow. Hazardous piping systems shall also contain information addressing the nature of the hazard. Pipe identification shall be repeated at maximum intervals of 25 feet (7620 mm) and at each point where the piping passes through a wall, floor or roof. Lettering shall be readily observable within the room or space the piping is located.*

608.8.2 Color. *The color of the pipe identification shall be discernable and consistent throughout the building.*

608.8.3 Size. *The size of the background color field and lettering shall comply with Table 608.8.3.*

**TABLE 608.8.3
SIZE OF PIPE IDENTIFICATION**

PIPE DIAMETER (inches)	LENGTH BACKGROUND COLOR FIELD (inches)	SIZE OF LETTERS (inches)
$\frac{3}{4}$ to $1\frac{1}{4}$	8	0.5
$1\frac{1}{2}$ to 2	8	0.75
$2\frac{1}{2}$ to 6	12	1.25
8 to 10	24	2.5
over 10	32	3.5

For SI: 1 inch = 25.4 mm.

608.9 Reutilization prohibited. Water utilized for the cooling of equipment or other processes shall not be returned to the potable water system. Such water shall be discharged into a drainage system through an air gap or shall be utilized for nonpotable purposes.

608.10 Reuse of piping. Piping that has been utilized for any purpose other than conveying potable water shall not be utilized for conveying potable water.

608.11 Painting of water tanks. The interior surface of a potable water tank shall not be lined, painted or repaired with any material that changes the taste, odor, color or potability of the water supply when the tank is placed in, or returned to, service.

608.12 Pumps and other appliances. Water pumps, filters, softeners, tanks and all other devices that handle or treat potable water shall be protected against contamination.

608.13 Backflow protection. Means of protection against backflow shall be provided, maintained and inspected in accordance with Sections 608.13.1 through 608.13.9.

608.13.1 Air gap. The minimum required air gap shall be measured vertically from the lowest end of a potable water outlet to the flood level rim of the fixture or receptacle into which such potable water outlet discharges. Air gaps shall comply with ASME A112.1.2 and air gap fittings shall comply with ASME A112.1.3.

608.13.2 Reduced pressure principle backflow preventers. Reduced pressure principle backflow preventers shall conform to ASSE 1013, AWWA C511 or CAN/CSA B64.4. Reduced pressure detector assembly backflow preventers shall conform to ASSE 1047. These devices shall be permitted to be installed where subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged. These devices shall be tested annually by a certified tester.

608.13.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012 or CAN/CSA B64.4. These devices shall be permitted to be installed where subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.

608.13.4 Barometric loop. Barometric loops shall precede the point of

connection and shall extend vertically to a height of 35 feet (10 668 mm). A barometric loop shall only be utilized as an atmospheric-type or pressure-type vacuum breaker.

608.13.5 Pressure-type vacuum breakers. Pressure-type vacuum breakers shall conform to ASSE 1020 and spillproof vacuum breakers shall comply with ASSE 1056. These devices are designed for installation under continuous pressure conditions when the critical level is installed at the required height. Pressure-type vacuum breakers shall not be installed in locations where spillage could cause damage to the structure.

608.13.6 Atmospheric-type vacuum breakers. Pipe-applied atmospheric-type vacuum breakers shall conform to ASSE 1001 or CAN/CSA B64.1.1. Hose-connection vacuum breakers shall conform to ASSE 1011, ASSE 1019, ASSE 1035, ASSE 1052, CAN/CSA B64.2, CAN/CSA B64.2.2 or CSA B64.7. These devices shall operate under normal atmospheric pressure when the critical level is installed at the required height.

608.13.7 Double check-valve assemblies. Double check-valve assemblies shall conform to ASSE 1015 or AWWA C510. Double-detector check-valve assemblies shall conform to ASSE 1048. These devices shall be capable of operating under continuous pressure conditions. These devices shall be tested annually by a certified tester.

608.13.8 Spillproof vacuum breakers. Spillproof vacuum breakers (SVB) shall conform to ASSE 1056. These devices are designed for installation under continuous-pressure conditions when the critical level is installed at the required height.

608.13.9 Chemical dispenser backflow devices. Backflow devices for chemical dispensers shall comply with ASSE 1055 or shall be equipped with an air gap fitting.

608.14 Location of backflow preventers. Access shall be provided to backflow preventers as specified by the installation instructions of the approved manufacturer.

608.14.1 Outdoor enclosures for backflow prevention devices. Outdoor enclosures for backflow prevention devices shall comply with ASSE 1060.

608.15 Protection of potable water outlets. All potable water openings and outlets shall be protected against backflow in accordance with Section 608.15.1, 608.15.2, 608.15.3, 608.15.4, 608.15.4.1, or 608.15.4.2.

608.15.1 Protection by air gap. Openings and outlets shall be protected by an air gap between the opening and the fixture flood level rim as specified in Table 608.15.1. Openings and outlets equipped for hose connection shall be protected by means other than an air gap.

**TABLE 608.15.1
MINIMUM REQUIRED AIR GAPS**

FIXTURE	MINIMUM AIR GAP	
	Away from a wall ^a (inches)	Close to a wall (inches)
Lavatories and other fixtures with effective opening not greater than ½ inch in diameter	1	1½
Sink, laundry trays, gooseneck back faucets and other fixtures with effective openings not greater than ¾ inch in diameter	1.5	2.5
Over-rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2	3
Drinking water fountains, single orifice not greater than 7/16 inch in diameter or multiple orifices with a total area of 0.150 square inch (area of circle 7/16 inch in diameter)	1	1½
Effective openings greater than 1 inch	Two times the diameter of the effective opening	Three times the diameter of the effective opening

For SI: 1 inch = 25.4 mm.

a. Applicable where walls or obstructions are spaced from the nearest inside-edge of the spout opening a distance greater than three times the diameter of the effective opening for a single wall, or a distance greater than four times the diameter of the effective opening for two intersecting walls. **608.15.2 Protection by a reduced pressure principle backflow preventer.** Openings and outlets shall be protected by a reduced pressure principle backflow preventer.

608.15.3 Protection by a backflow preventer with intermediate atmospheric vent. Openings and outlets shall be protected by a backflow preventer with an intermediate atmospheric vent.

608.15.4 Protection by a vacuum breaker. Openings and outlets shall be protected by atmospheric-type or pressure-type vacuum breakers. The critical level of the vacuum breaker shall be set a minimum of 6 inches (152 mm) above the flood level rim of the fixture or device. Fill valves shall be set in accordance with Section 425.3.1. Vacuum breakers shall not be installed under exhaust hoods or similar locations that will contain toxic fumes or vapors. Pipe-applied vacuum breakers shall be installed not less than 6 inches (152 mm) above the flood level rim of the fixture, receptor or device served.

608.15.4.1 Deck-mounted and integral vacuum breakers. Approved deck-mounted or equipment-mounted vacuum breakers and faucets with integral atmospheric or spillproof vacuum breakers shall be installed in accordance with the manufacturer's instructions and the requirements for labeling with the critical level not less than 1 inch (25 mm) above the flood level rim.

608.15.4.2 Hose connections. Sillcocks, hose bibbs, wall hydrants and other openings with a hose connection shall be protected by an atmospheric-type or pressure-type vacuum breaker or a permanently attached hose connection vacuum breaker.

Exceptions:

1. This section shall not apply to water heater and boiler drain valves that are provided with hose connection threads and that are intended only for tank or vessel draining.
2. This section shall not apply to water supply valves intended for connection of clothes washing machines where backflow prevention is otherwise provided or is integral with the machine.

608.16 Connections to the potable water system. Connections to the potable water system shall conform to Sections 608.16.1 through 608.16.9.

608.16.1 Beverage dispensers. The water supply connection to carbonated beverage dispensers shall be protected against backflow by a backflow preventer conforming to ASSE 1022 or by an air gap. The backflow preventer device and the piping downstream therefrom shall not be affected by carbon dioxide gas.

608.16.2 Connections to boilers. The potable supply to the boiler shall be equipped with a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012 or CAN/CSA B64.3. Where conditioning chemicals are introduced into the system, the potable water connection shall be protected by an air gap or a reduced pressure principle backflow preventer, complying with ASSE 1013, CAN/CSA B64.4 or AWWA C511.

608.16.3 Heat exchangers. Heat exchangers utilizing an essentially toxic transfer fluid shall be separated from the potable water by double-wall construction. An air gap open to the atmosphere shall be provided between the two walls. Heat exchangers utilizing an essentially nontoxic transfer fluid shall be permitted to be of single-wall construction.

608.16.4 Connections to automatic fire sprinkler systems and standpipe systems. The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow by a double check-valve assembly or a reduced pressure principle backflow preventer.

Exceptions:

1. Where systems are installed as a portion of the water distribution system in accordance with the requirements of this code and are not provided with a fire department connection, isolation of the water supply system shall not be required.
2. Isolation of the water distribution system is not required for deluge, preaction or dry pipe systems.

608.16.4.1 Additives or nonpotable source. Where systems under continuous pressure contain chemical additives or antifreeze, or where systems are connected to a nonpotable secondary water supply, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer. Where chemical additives or antifreeze are added to only a portion of an automatic fire sprinkler or standpipe system, the reduced pressure principle backflow preventer shall be permitted to be located so as to isolate that portion of the system. Where systems are not under continuous pressure, the potable water supply shall be protected against backflow by an air gap or a pipe applied atmospheric vacuum breaker conforming to ASSE 1001 or CAN/CSA B64.1.1.

608.16.5 Connections to lawn irrigation systems. The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric-type

vacuum breaker, a pressure-type vacuum breaker or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

608.16.6 Connections subject to backpressure. *Where a potable water connection is made to a nonpotable line, fixture, tank, vat, pump or other equipment subject to back-pressure, the potable water connection shall be protected by a reduced pressure principle backflow preventer.*

608.16.7 Chemical dispensers. *Where chemical dispensers connect to the potable water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, 608.13.2, 608.13.5, 608.13.6, 608.13.8 or 608.13.9.*

608.16.8 Portable cleaning equipment. *Where the portable cleaning equipment connects to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, 608.13.2, 608.13.3, 608.13.7 or 608.13.8.*

608.16.9 Dental pump equipment. *Where dental pumping equipment connects to the water distribution system, the water supply system shall be protected against backflow in accordance with Section 608.13.1, 608.13.2, 608.13.5, 608.13.6 or 608.13.8.*

608.17 Protection of individual water supplies. *An individual water supply shall be located and constructed so as to be safeguarded against contamination in accordance with Sections 608.17.1 through 608.17.8.*

608.17.1 Well locations. *A potable ground water source or pump suction line shall not be located closer to potential sources of contamination than the distances shown in Table 608.17.1. In the event the underlying rock structure is limestone or fragmented shale, the local or state health department shall be consulted on well site location. The distances in Table 608.17.1 constitute minimum separation and shall be increased in areas of creviced rock or limestone, or where the direction of movement of the ground water is from sources of contamination toward the well.*

TABLE 608.17.1
DISTANCE FROM CONTAMINATION TO
PRIVATE WATER SUPPLIES AND PUMP SUCTION LINES

SOURCE OF CONTAMINATION	DISTANCE (feet)
<i>Barnyard</i>	100
<i>Farm silo</i>	25
<i>Pasture</i>	100
<i>Pumphouse floor drain of cast iron draining to ground surface</i>	2
<i>Seepage pits</i>	50
<i>Septic tank</i>	25
<i>Sewer</i>	10
<i>Subsurface disposal fields</i>	50
<i>Subsurface pits</i>	50

For SI: 1 foot = 304.8 mm.

608.17.2 Elevation. Well sites shall be positively drained and shall be at higher elevations than potential sources of contamination.

608.17.3 Depth. Private potable well supplies shall not be developed from a water table less than 10 feet (3048 mm) below the ground surface.

608.17.4 Water-tight casings. Each well shall be provided with a water-tight casing to a minimum distance of 10 feet (3048 mm) below the ground surface. All casings shall extend at least 6 inches (152 mm) above the well platform. The casing shall be large enough to permit installation of a separate drop pipe. Casings shall be sealed at the bottom in an impermeable stratum or extend several feet into the water-bearing stratum.

608.17.5 Drilled or driven well casings. Drilled or driven well casings shall be of steel or other approved material. Where drilled wells extend into a rock formation, the well casing shall extend to and set firmly in the formation. The annular space between the earth and the outside of the casing shall be filled with cement grout to a minimum distance of 10 feet (3048 mm) below the ground surface. In an instance of casing to rock installation, the grout shall extend to the rock surface.

608.17.6 Dug or bored well casings. Dug or bored well casings shall be of water-tight concrete, tile, or galvanized or corrugated metal pipe to a minimum distance of 10 feet (3048 mm) below the ground surface. Where the water table is more than 10 feet (3048 mm) below the ground surface, the water-tight casing shall extend below the table surface. Well casings for dug wells or bored wells constructed with sections of concrete, tile, or galvanized or corrugated metal pipe shall be surrounded by 6 inches (152 mm) of grout poured into the hole between the outside of the casing and the ground to a minimum depth of 10 feet (3048 mm).

608.17.7 Cover. Every potable water well shall be equipped with an overlapping water-tight cover at the top of the well casing or pipe sleeve such that contaminated water or other substances are prevented from entering the well through the annular opening at the top of the well casing, wall or pipe sleeve.

Covers shall extend downward at least 2 inches (51 mm) over the outside of the well casing or wall. A dug well cover shall be provided with a pipe sleeve permitting the withdrawal of the pump suction pipe, cylinder or jet body without disturbing the cover. Where pump sections or discharge pipes enter or leave a well through the side of the casing, the circle of contact shall be water tight.

608.17.8 Drainage. All potable water wells and springs shall be constructed such that surface drainage will be diverted away from the well or spring.

SECTION PC 609 HEALTH CARE PLUMBING

609.1 Scope. This section shall govern those aspects of health care plumbing Systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following occupancies: nursing homes, homes for the aged, orphanages, infirmaries, first aid stations, psychiatric facilities, clinics, professional offices of dentists and doctors, mortuaries, educational facilities, surgery, dentistry, research and testing laboratories, establishments manufacturing pharmaceutical drugs and medicines, and other structures with similar apparatus and equipment classified as plumbing.

609.2 Water service. All hospitals shall have two water service pipes installed in such a manner so as to minimize the potential for an interruption of the supply of water in the event of a water main or water service pipe failure.

609.3 Hot water. Hot water shall be provided to supply all of the hospital fixture, kitchen and laundry requirements. Special fixtures and equipment shall have hot water supplied at a temperature specified by the manufacturer. The hot water system shall be installed in accordance with Section PC 607.

609.4 Vacuum breaker installation. Vacuum breakers shall be installed a minimum of 6 inches (152 mm) above the flood level rim of the fixture or device in accordance with Section PC 608. The flood level rim of hose connections shall be the maximum height at which any hose is utilized.

609.5 Prohibited water closet and clinical sink supply. Jet or water-supplied orifices, except those supplied by the flush connections, shall not be located in or connected with a water closet bowl or clinical sink. This section shall not prohibit an approved bidet installation.

609.6 Clinical, hydrotherapeutic and radiological equipment. All clinical, hydrotherapeutic, radiological or any equipment that is supplied with water or that discharges to the waste system shall conform to the requirements of this section and Section PC 608.

609.7 Condensate drain trap seal. A water supply shall be provided for cleaning, flushing and resealing the condensate trap, and the trap shall discharge through an air gap in accordance with Section PC 608.

609.8 Valve leakage diverter. Each water sterilizer filled with water through directly connected piping shall be equipped with an approved leakage diverter or bleed line on the water supply control valve to indicate and conduct any leakage of unsterile water away from the sterile zone.

**SECTION PC 610
DISINFECTION OF POTABLE WATER SYSTEM**

610.1 General. *New or repaired potable water systems shall be purged of deleterious matter and disinfected prior to utilization. The method to be followed shall be that prescribed by the health authority or water purveyor having jurisdiction or, in the absence of a prescribed method, the procedure described in either AWWA C651 or AWWA C652, or as described in this section. This requirement shall apply to “on-site” or “in-plant” fabrication of a system or to a modular portion of a system.*

1. *The pipe system shall be flushed with clean, potable water until dirty water does not appear at the points of outlet.*
2. *The system or part thereof shall be filled with a water/chlorine solution containing at least 50 parts per million (50 mg/L) of chlorine, and the system or part thereof shall be valved off and allowed to stand for 24 hours; or the system or part thereof shall be filled with a water/chlorine solution containing at least 200 parts per million (200 mg/L) of chlorine and allowed to stand for 3 hours.*
3. *Following the required standing time, the system shall be flushed with clean potable water until the chlorine is purged from the system.*
4. *The procedure shall be repeated where shown by a bacteriological examination that contamination remains present in the system.*

**SECTION PC 611
DRINKING WATER TREATMENT UNITS**

611.1 Design. *Drinking water treatment units shall meet the requirements of NSF 42, NSF 44, NSF 53 or NSF 62.*

611.2 Reverse osmosis systems. *The discharge from a reverse osmosis drinking water treatment unit shall enter the drainage system through an air gap or an air gap device that meets the requirements of NSF 58.*

611.3 Connection tubing. *The tubing to and from drinking water treatment units shall be of a size and material as recommended by the manufacturer. The tubing shall comply with NSF 14, NSF 42, NSF 44, NSF 53, NSF 58 or NSF 61.*

**SECTION PC 612
SOLAR SYSTEMS**

612.1 Solar systems. *The construction, installation, alterations and repair of systems, equipment and appliances intended to utilize solar energy for space heating or cooling, domestic hot water heating, swimming pool heating or process heating shall be in accordance with the New York city mechanical code.*

**SECTION PC 613
TEMPERATURE CONTROL DEVICES AND VALVES**

613.1 Temperature-actuated mixing valves. *Temperature actuated mixing valves, which are installed to reduce water temperatures to defined limits, shall comply with ASSE 1016 and ASSE 1017.*

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CHAPTER 7
SANITARY DRAINAGE

SECTION PC 701
GENERAL

701.1 Scope. *The provisions of this chapter shall govern the materials, design, construction and installation of sanitary drainage systems.*

701.2 Sewer required. *Every building in which plumbing fixtures are installed and all premises having drainage piping shall be connected to a public sewer, where available, or an approved private sewage disposal system in accordance with applicable city department of environmental protection rules.*

701.3 Separate sewer connection. *Every building having plumbing fixtures installed and intended for human habitation, occupancy or use on premises abutting on a street, alley or easement in which there is a public sewer shall have a separate connection with the sewer. Where located on the same lot, multiple buildings shall not be prohibited from connecting to a common building sewer that connects to the public sewer.*

701.4 Sewage treatment. *Sewage or other waste from a plumbing system that is deleterious to surface or subsurface waters shall not be discharged into the ground or into any waterway unless it has first been rendered innocuous through subjection to an approved form of treatment.*

701.5 Damage to drainage system or public sewer. *Wastes detrimental to the public sewer system or to the functioning of the sewage-treatment plant shall be treated and disposed of in accordance with applicable rules of the city department of environmental protection.*

701.6 Tests. *The sanitary drainage system shall be tested in accordance with Section PC 312.*

701.7 Connections. *Direct connection of a steam exhaust, blowoff or drip pipe shall not be made with the building drainage system. Wastewater when discharged into the building drainage system shall be at a temperature not higher than 150°F (65.6°C). When higher temperatures exist, approved cooling methods shall be provided.*

701.8 Engineered systems. *Engineered sanitary drainage systems shall conform to the provisions of Sections 28-105 and PC 714.*

701.9 Drainage piping in food service areas. *Exposed soil or waste piping shall not be installed above any working, storage or eating surfaces in food service establishments.*

701.10 Plastic pipe. *Plastic piping and fittings shall not be used.*

Exception: *Plastic piping and fittings may be used in residential buildings five stories or less in height.*

SECTION PC 702
MATERIALS

702.1 Above-ground sanitary drainage and vent pipe. *Above-ground soil, waste and vent pipe shall conform to one of the standards listed in Table 702.1.*

TABLE 702.1
ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe schedule 40	ASTM D 2661; ASTM F 628; CSA B181.1
Brass pipe	ASTM B 43
Cast-iron pipe	ASTM A 74; CISPI 301; ASTM A 888
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tubing (Type K, L)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 306
Ductile iron	AWWA C151
Galvanized steel pipe	ASTM A 53
Glass pipe	ASTM C 1053
High silicon cast iron	ASTM A 518 A/518 M
Polyolefin pipe	ASTM F 1412; ASTM D 2657; CAN/CSA B181.3
Polyvinyl chloride (PVC) plastic pipe (Type DWV)	ASTM D 2665; ASTM D 3311; ASTM F 1866
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1

702.2 Underground building sanitary drainage and vent pipe. Underground building sanitary drainage and vent pipe shall conform to one of the standards listed in Table 702.2.

TABLE 702.2
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Cast-iron pipe	ASTM A 74; CISPI 301; ASTM A 888
Copper or copper alloy tubing (Type K, L)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 306
Ductile iron	AWWA C151
Non-asbestos fiber cement pipe	ASTM C 1449
Polyethylene (corrugated 12 inches and larger)	ASTM F 667
Stainless steel drainage systems, Type 316L	ASME A112.3.1

702.3 Building sewer pipe. Building sewer pipe shall conform to one of the standards listed in Table 702.3.

**TABLE 702.3
BUILDING SEWER PIPE**

MATERIAL	STANDARD
Cast-iron pipe	ASTM A 74; ASTM A 888; CISPI 301
Concrete pipe	ASTM C14; ASTM C76; CAN/CSA A257.1M; CAN/CSA A257.2M
Copper or copper-alloy tubing (Type K or L)	ASTM B 75; ASTM B 88; ASTM B 251
Ductile iron	AWWA C151
Non-asbestos fiber cement pipe	ASTM C 1449
Stainless steel drainage systems, types 304 and 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C 4; ASTM C 700

702.4 Fittings. Pipe fittings shall be approved for installation with the piping material installed and shall conform to the respective pipe standards or one of the standards listed in Table 702.4.

**TABLE 702.4
PIPE FITTINGS**

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe schedule 40	ASTM D 3311; CSA B181.1; ASTM D 2661
Cast iron	ASME B16.4; ASME B16.12; ASTM A 74; ASTM A 888; CISPI 301
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29
Glass	ASTM C 1053
Gray iron and ductile iron	AWWA C110
High silicon iron	ASTM A 861
Malleable iron	ASME B16.3
Polyethylene (corrugated 12 inches and larger)	ASTM F 667
Polyolefin	CAN/CSA B181.3; F 1412; D 2657
Polyvinyl chloride (PVC) plastic	ASTM D 3311; ASTM D 2665; ASTM F 1866
Stainless steel drainage V stems, Types 304 and	ASME A112.3.1

702.5 Chemical waste system. A chemical waste system shall be completely separated from the sanitary drainage system. The chemical waste shall be treated in accordance with Section 803.2 before discharging to the sanitary drainage system. Separate drainage systems for chemical wastes and vent pipes shall be of an approved

material that is resistant to corrosion and degradation for the concentrations of chemicals involved.

702.6 Lead bends and traps. Lead bends and traps shall not be less than 0.125 inch (3.2 mm) wall thickness.

SECTION PC 703 BUILDING SEWER

703.1 Building sewer pipe near the water service. Where the building sewer is installed within 5 feet (1524 mm) of the water service, as provided for in Section 603.2, the building sewer pipe shall conform to one of the standards for, cast-iron pipe, copper or copper-alloy tubing, or ductile iron listed in Table 702.3.

703.2 Drainage pipe in filled ground. Where a building sewer or building drain is installed on filled or unstable ground, the drainage pipe shall conform to one of the standards for, cast-iron pipe, copper or copper-alloy tubing, ductile iron, non-asbestos fiber cement or concrete pipe listed in Table 702.3.

703.3 Sanitary and storm sewers. Where separate systems of sanitary drainage and storm drainage are installed in the same property, the sanitary and storm building sewers or drains shall be permitted to be laid side by side in one trench.

703.4 Existing building sewers and drains. Existing building sewers and drains shall connect with new building sewer and drainage systems only where found by examination and test to conform to the new system in quality of material. The commissioner shall notify the owner to make the changes necessary to conform to this code.

703.5 Cleanouts on building sewers. Cleanouts on building sewers shall be located as set forth in Section PC 708.

703.6 Building house traps. Building house traps shall be installed on all building drains near the foundation wall of the structure, inside of the street line, and on the sewer side of all connections except the connection used to receive the discharge from a sewage ejector, oil separator or leader on combined systems. If such trap is placed outside of the foundation wall or below a cellar floor, it shall be made accessible in a manhole with a cover, or by extension of the two handholes that shall be provided with cleanouts at the cellar floor or grade. Handhold extensions shall be not more than 18 inches (457 mm) above the centerline of the drain. Building (house) traps shall be the same size as the building house drain connected thereto.

SECTION PC 704 DRAINAGE PIPING INSTALLATION

704.1 Slope of horizontal drainage piping. Horizontal drainage piping shall be installed in uniform alignment at uniform slopes. The minimum slope of a horizontal drainage pipe shall be in accordance with Table 704.1.

TABLE 704.1
SLOPE OF HORIZONTAL DRAINAGE PIPE

<i>SIZE (inches)</i>	<i>MINIMUM SLOPE (inch per foot)</i>
2 ½ or less	¼
3 to 6	⅛
8 or larger	1/16

For SI: 1 inch = 25.4 mm, 1 inch per foot = 0.083.3 mm/m.

704.2 Change in size. *The size of the drainage piping shall not be reduced in size in the direction of the flow. A 4 inch by 3 inch (102 mm by 76mm) water closet connection shall not be considered as a reduction in size.*

704.3 Connections to offsets and bases of stacks. *Horizontal branches shall connect to the bases of stacks at a point located not less than 10 times the diameter of the drainage stack downstream from the stack. Except as prohibited by Section 711.2, horizontal branches shall connect to horizontal stack offsets at a point located not less than 10 times the diameter of the drainage stack downstream from the upper stack.*

704.4 Future fixtures. *Drainage piping for future fixtures shall terminate with an approved cap or plug.*

704.5 Dead ends. *In the installation or removal of any part of a drainage system, dead ends shall be prohibited. Cleanout extensions and approved future fixture drainage piping shall not be considered as dead ends.*

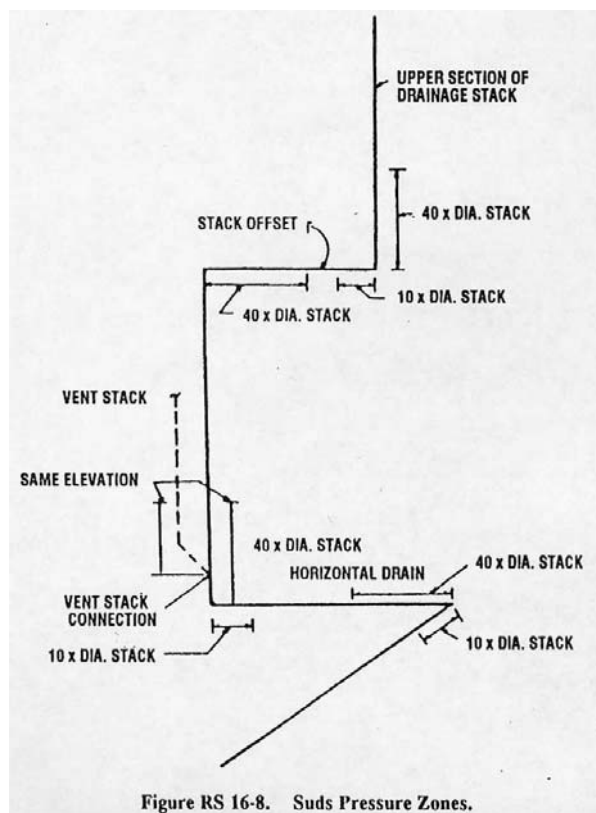
704.6 Suds Pressure Zones Vents. *Where sinks, laundry trays, laundry washing machines, bathtubs, and similar fixtures in which detergents producing suds are normally used and discharged at an upper floor level into a soil or waste stack that also serves fixtures in other occupancy units at a lower floor level, the drainage and vent piping for such lower fixtures shall be arranged so as to avoid connection to suds pressure zones in the sanitary drainage and vent systems. If connected to the sanitary system, a suds relief vent relieving to a nonpressure zone shall be provided at each suds pressure zone where such connections are installed. The diameter of such relief vent shall be at least ¾ the diameter of the piping in which the pressure zone occurs, but not less than 2 inches (51mm). Suds pressure zones shall be considered to exist at the following locations in sanitary drainage and vent systems when the piping serves fixtures on two or more floors that receive wastes that contain detergents producing suds:*

- 1. In a soil or waste stack a zone shall be considered to exist in the vertical portion within 40 stack diameters of the base fitting.*
- 2. In the horizontal drain at the base of a soil or waste stack a zone shall be considered to exist in the horizontal portion within ten stack diameters of the base fitting. Where a 60 degree or 90 degree fitting is installed in the horizontal drain, a zone shall be considered to exist in the horizontal portion within 40 drain diameters upstream of and 10 drain diameters downstream of the fitting in accordance with Figure 704.6 (2).*
- 3. In a soil or waste stack offset of 60 degrees or 90 degrees, a zone shall be considered to exist in the vertical portion of the stack within 40 stack diameters of the base fitting for the upper section of the stack. The zone shall be*

considered to exist in the horizontal offset within 10 stack diameters of such base fitting and within 40 stack diameters of the top fitting for the lower section of the stack.

4. In a vent stack that has its base connected to a suds pressure zone in the sanitary drainage system, a zone shall be considered to exist in the portion of the vent stack extending from its base connection up to the lowest branch vent fitting located above the level of the suds pressure zone in the sanitary drainage system.

FIGURE 704.6 (2)



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SECTION PC 705
JOINTS

705.1 General. This section contains provisions applicable to joints specific to sanitary drainage piping.

705.2 ABS plastic. Joints between ABS plastic pipe or fittings shall comply with Sections 705.2.1 through 705.2.3.

705.2.1 Mechanical joints. Mechanical joints on drainage pipes shall be made with an elastomeric seal conforming to ASTM C 1173, ASTM D 3212 or CAN/CSA B602. Mechanical joints shall be installed only in underground systems unless otherwise approved. Joints shall be installed in accordance with the manufacturer's instructions.

705.2.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. Solvent cement that conforms to ASTM D 2235 or CSA B181.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet. Joints shall be made in accordance with ASTM D 2235, ASTM D 2661, ASTM F 628 or CSA B181.1. Solvent-cement joints shall be permitted above or below ground.

705.2.3 Threaded joints. Threads shall conform to ASME B1.20.1. Schedule 80 or heavier pipe shall be permitted to be threaded with dies specifically designed for plastic pipe. Approved thread lubricant or tape shall be applied on the male threads only.

705.3 Asbestos-cement. Joints between asbestos-cement pipe or fittings shall be made with a sleeve coupling of the same composition as the pipe, sealed with an elastomeric ring conforming to ASTM D 1869.

705.4 Brass. Joints between brass pipe or fittings shall comply with Sections 705.4.1 through 705.4.4.

705.4.1 Brazed joints. All joint surfaces shall be cleaned. An approved flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.

705.4.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

705.4.3 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

705.4.4 Welded joints. All joint surfaces shall be cleaned. The joint shall be welded with an approved filler metal.

705.5 Cast iron. Joints between cast-iron pipe or fittings shall comply with Sections 705.5.1 through 705.5.3.

705.5.1 Caulked joints. Joints for hub and spigot pipe shall be firmly packed with oakum or hemp. Molten lead shall be poured in one operation to a depth of not less than 1 inch (25 mm). The lead shall not recede more than 0.125 inch (3.2 mm) below the rim of the hub and shall be caulked tight. Paint, varnish or other coatings shall not be permitted on the jointing material until after the joint has been tested and approved. Lead shall be run in one pouring and shall be caulked tight. Acid-resistant rope and acidproof cement shall be permitted.

705.5.2 Compression gasket joints. Compression gaskets for hub and spigot pipe and fittings shall conform to ASTM C 564. Gaskets shall be compressed when the pipe is fully inserted.

705.5.3 Mechanical joint coupling. Mechanical joint couplings for hubless pipe

and fittings shall comply with CISPI 310 or ASTM C 1277. The elastomeric sealing sleeve shall conform to ASTM C 564 or CAN/CSA B602 and shall be provided with a center stop. Mechanical joint couplings shall be installed in accordance with the manufacturer's installation instructions.

705.6 Concrete joints. Joints between concrete pipe and fittings shall be made with an elastomeric seal conforming to ASTM C 443, ASTM C 1173, CAN/CSA A257.3M or CAN/CSA B602.

705.7 and 705.8 Reserved.

705.9 Copper pipe. Joints between copper or copper-alloy pipe or fittings shall comply with Sections 705.9.1 through 705.9.5.

705.9.1 Brazed joints. All joint surfaces shall be cleaned. An approved flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.

705.9.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

705.9.3 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32.

705.9.4 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

705.9.5 Welded joints. All joint surfaces shall be cleaned. The joint shall be welded with an approved filler metal.

705.10 Copper tubing. Joints between copper or copper-alloy tubing or fittings shall comply with Sections 705.10.1 through 705.10.3.

705.10.1 Brazed joints. All joint surfaces shall be cleaned. An approved flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.

705.10.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

705.10.3 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32.

705.11 Borosilicate glass joints. Glass-to-glass connections shall be made with a bolted compression-type stainless steel (300 series) coupling with contoured acid-resistant elastomeric compression ring and a fluorocarbon polymer inner seal ring; or with caulked joints in accordance with Section 705.11.1.

705.11.1 Caulked joints. Every lead-caulked joint for hub and spigot soil pipe shall be firmly packed with oakum or hemp and filled with molten lead not less than 1 inch (25 mm) deep and not to extend more than 0.125 inch (3.2 mm) below the rim of the hub. Paint, varnish or other coatings shall not be permitted on the jointing material until after the joint has been tested and approved. Lead shall be run in one pouring and shall be caulked tight. Acid-resistant rope and acidproof cement shall be permitted.

705.12 Steel. Joints between galvanized steel pipe or fittings shall comply with Sections 705.12.1 and 705.12.2.

705.12.1 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

705.12.2 Mechanical joints. Joints shall be made with an approved elastomeric seal. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

705.13 Lead. Joints between lead pipe or fittings shall comply with Sections 705.13.1 and 705.13.2.

705.13.1 Burned. Burned joints shall be uniformly fused together into one continuous piece. The thickness of the joint shall be at least as thick as the lead being joined. The filler metal shall be of the same material as the pipe.

705.13.2 Wiped. Joints shall be fully wiped, with an exposed surface on each side of the joint not less than 0.75 inch (19.1 mm). The joint shall be at least 0.325 inch (9.5 mm) thick at the thickest point.

705.14 PVC plastic. Joints between PVC plastic pipe or fittings shall comply with Sections 705.14.1 through 705.14.3.

705.14.1 Mechanical joints. Mechanical joints on drainage pipe shall be made with an elastomeric seal conforming to ASTM C 1173, ASTM D 3212 or CAN/CSA B602. Mechanical joints shall not be installed in above-ground systems, unless otherwise approved. Joints shall be installed in accordance with the manufacturer's instructions.

705.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent-cement joints shall be permitted above or below ground.

705.14.3 Threaded joints. Threads shall conform to ASME B1.20.1. Schedule 80 or heavier pipe shall be permitted to be threaded with dies specifically designed for plastic pipe. Approved thread lubricant or tape shall be applied on the male threads only.

705.15 Vitrified clay. Joints between vitrified clay pipe or fittings shall be made with an elastomeric seal conforming to ASTM C 425, ASTM C 1173 or CAN/CSA B602.

705.16 Joints between different materials. Joints between different piping materials shall be made with a mechanical joint of the compression or mechanical-sealing type conforming to ASTM C 1173, ASTM C 1460 or ASTM C 1461. Connectors and adapters shall be approved for the application and such joints shall have an elastomeric seal conforming to ASTM C 425, ASTM C 443, ASTM C 564, ASTM C 1440, ASTM D 1869, ASTM F 477, CAN/CSA A257.3M or CAN/CSA B602, or as required in Sections 705.16.1 through 705.16.5. Joints between glass pipe and other types of materials shall be made with adapters having a TFE seal. Joints shall be installed in accordance with the manufacturer's instructions.

705.16.1 Copper or copper-alloy tubing to cast-iron hub pipe. Joints between

copper or copper-alloy tubing and cast-iron hub pipe shall be made with a brass ferrule or compression joint. The copper or copper-alloy tubing shall be soldered to the ferrule in an approved manner, and the ferrule shall be joined to the cast-iron hub by a caulked joint or a mechanical compression joint.

705.16.2 Reserved.

705.16.3 Cast-iron pipe to galvanized steel or brass pipe. Joints between cast-iron and galvanized steel or brass pipe shall be made by either caulked or threaded joints or with an approved adapter fitting.

705.16.4 Plastic pipe or tubing to other piping material. Joints between different grades of plastic pipe or between plastic pipe and other piping material shall be made with an approved adapter fitting. Joints between plastic pipe and cast-iron hub pipe shall be made by a caulked joint or a mechanical compression joint.

705.16.5 Lead pipe to other piping material. Joints between lead pipe and other piping material shall be made by a wiped joint to a caulking ferrule, soldering nipple, or bushing or shall be made with an approved adapter fitting.

705.16.6 Borosilicate glass to other materials. Joints between glass pipe and other types of materials shall be made with adapters having a TFE seal and shall be installed in accordance with the manufacturer's instructions.

705.16.7 Stainless steel drainage systems to other materials. Joints between stainless steel drainage systems and other piping materials shall be made with approved mechanical couplings.

705.17 Drainage slip joints. Slip joints shall comply with Section 405.8.

705.18 Caulking ferrules. Ferrules shall be of red brass and shall be in accordance with Table 705.18.

**TABLE 705.18
CAULKING FERRULE SPECIFICATIONS**

PIPE SIZES (inches)	INSIDE DIAMETER (inches)	LENGTH (inches)	MINIMUM WEIGHT EACH
2	2¼	4½	1 pound
3	3¼	4½	1 pound 12 ounces
4	4¼	4½	2 pounds 8 ounces

For SI: 1 inch = 25.4 mm, 1 ounce = 28.35 g, 1 pound = 0.454 kg.

705.19 Soldering bushings. Soldering bushings shall be of red brass and shall be in accordance with Table 705.19.

**TABLE 705.19
SOLDERING BUSHING SPECIFICATIONS**

<i>PIPE SIZES (inches)</i>	<i>MINIMUM WEIGHT EACH</i>
1/4	6 ounces
1/2	8 ounces
2	14 ounces
2 1/2	1 pound 6 ounces
3	2 pounds
4	3 pounds 8 ounces

For SI: 1 inch = 25.4 mm, 1 ounce = 28.35 g, 1 pound = 0.454 kg.

705.20 Stainless steel drainage systems. *O-ring joints for stainless steel drainage systems shall be made with an approved elastomeric seal.*

SECTION PC 706

CONNECTIONS BETWEEN DRAINAGE PIPING AND FITTINGS

706.1 Connections and changes in direction. *All connections and changes in direction of the sanitary drainage system shall be made with approved drainage fittings. Connections between drainage piping and fixtures shall conform to Section PC 405.*

706.2 Obstructions. *The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type.*

706.3 Installation of fittings. *Fittings shall be installed to guide sewage and waste in the direction of flow. Change in direction shall be made by fittings installed in accordance with Table 706.3. Change in direction by combination fittings, side inlets or increasers shall be installed in accordance with Table 706.3 based on the pattern of flow created by the fitting.*

**TABLE 706.3
FITTINGS FOR CHANGE IN DIRECTION**

TYPE OF FITTING PATTERN	CHANGE IN DIRECTION		
	Horizontal to vertical	Vertical to horizontal	Horizontal to horizontal
Sixteenth bend	X	X	X
Eighth bend	X	X	X
Sixth bend	X	X	X
Quarter bend	X	X ^a	X ^a
Short sweep	X	X ^{a,b}	X ^a
Long sweep	X	X	X
Sanitary tee	X ^c	-	-
Wye	X	X	X
Combination wye and eighth bend	X	X	X

For SI: 1inch = 25.4 mm.

- a. The fittings shall only be permitted for a 2-inch or smaller fixture drain.
- b. Three inches or larger.
- c. For a limitation on double sanitary tees, see Section 706.3.

SECTION PC 707 PROHIBITED JOINTS AND CONNECTIONS

707.1 Prohibited joints. The following types of joints and connections shall be prohibited:

1. Cement or concrete joints.
2. Mastic or hot-pour bituminous joints.
3. Joints made with fittings not approved for the specific installation.
4. Joints between different diameter pipes made with elastomeric rolling O-rings.
5. Solvent-cement joints between different types of plastic pipe.
6. Saddle-type fittings.

SECTION PC 708 CLEANOUTS

708.1 Scope. This section shall govern the size, location, installation and maintenance of drainage pipe cleanouts.

708.2 Cleanout plugs. Cleanout plugs shall be brass or plastic, or other approved materials. Brass cleanout plugs shall be utilized with metallic drain, waste and vent piping only, and shall conform to ASTM A 74, ASME A112.3.1 or ASME A112.36.2M. Cleanouts with plate-style access covers shall be fitted with corrosion-resisting fasteners. Plastic cleanout plugs shall conform to the requirements of Section 702.4. Plugs shall have raised square or countersunk square heads. Countersunk heads shall be installed where raised heads are a trip hazard. Cleanout plugs with borosilicate glass systems shall be of borosilicate glass.

708.3 Where required. Cleanouts shall be located in accordance with Sections

708.3.1 through 708.3.4.

708.3.1 Horizontal drains within buildings. All horizontal drains shall be provided with cleanouts located not more than 100 feet (30 480 mm) apart.

708.3.2 Building sewers. Building sewers shall be provided with cleanouts located not more than 100 feet (30 480 mm) apart measured from the upstream entrance of the cleanout. For building sewers 8 inches (203 mm) and larger, manholes shall be provided and located not more than 200 feet (60 960 mm) from the junction of the building drain and building sewer, at each change in direction and at intervals of not more than 400 feet (122 m) apart. Manholes and manhole covers shall be of an approved type.

708.3.3 Changes of direction. Cleanouts shall be installed at each change of direction of the building drain or horizontal waste or soil lines greater than 45 degrees (0.79 rad). Where more than one change of direction occurs in a run of piping, only one cleanout shall be required for each 40 feet (12 192 mm) of developed length of the drainage piping.

708.3.4 Base of stack. A cleanout shall be provided at the base of each waste or soil stack.

708.3.5 Manholes. Manholes serving a building drain shall have secured gasket-tight covers and shall be located in accordance with Section 708.3.2.

708.4 Concealed piping. Cleanouts on concealed piping or piping under a floor slab or in a crawl space of less than 24 inches (610 mm) in height or a plenum shall be extended through and terminate flush with the finished wall, floor or ground surface or shall be extended to the outside of the building. Cleanout plugs shall not be covered with cement, plaster or any other permanent finish material. Where it is necessary to conceal a cleanout or to terminate a cleanout in an area subject to vehicular traffic, the covering plate, access door or cleanout shall be of an approved type designed and installed for this purpose.

708.5 Opening direction. Every cleanout shall be installed to open to allow cleaning in the direction of the flow of the drainage pipe or at right angles thereto.

708.6 Prohibited installation. Cleanout openings shall not be utilized for the installation of new fixtures, except where approved and where another cleanout of equal access and capacity is provided.

708.7 Minimal size. Cleanouts shall be the same nominal size as the pipe they serve up to 4 inches (102 mm). For pipes larger than 4 inches (102 mm) nominal size, the minimum size of the cleanout shall be 4 inches (102 mm).

Exceptions:

1. "P" trap connections with slip joints or ground joint connections, or stack cleanouts that are not more than one pipe diameter smaller than the drain served, shall be permitted.
2. Cast-iron cleanout sizing shall be in accordance with referenced standards in Table 702.4, ASTM A 74 for hub and spigot fittings or ASTM A 888 or CISPI 301 for hubless fittings.

708.8 Clearances. Cleanouts on 6-inch (153 mm) and smaller pipes shall be provided with a clearance of not less than 18 inches (457 mm) for rodding. Cleanouts on 8-inch (203 mm) and larger pipes shall be provided with a clearance of not less than 36 inches (914 mm) for rodding.

708.9 Access. Access shall be provided to all cleanouts.

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SECTION PC 709
FIXTURE UNITS

709.1 Values for fixtures. Drainage fixture unit values as given in Table 709.1 designate the relative load weight of different kinds of fixtures that shall be employed in estimating the total load carried by a soil or waste pipe, and shall be used in connection with Tables 710.1(1) and 710.1(2) of sizes for soil, waste and vent pipes for which the permissible load is given in terms of fixture units.

TABLE 709.1
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS	MINIMUM SIZE OF TRAP (inches)
<i>Automatic clothes washers, commercial^g</i>	3	2
<i>Automatic clothes washers, residential^g</i>	2	2
<i>Bathroom group as defined in Section 202 (1.6 gpf water closet)^f</i>	5	—
<i>Bathroom group as defined in Section 202 (water closet flushing greater than 1.6 gpf)^f</i>	6	—
<i>Bathtub^b (with or without overhead shower or whirlpool attachments)</i>	2	1½
<i>Bidet</i>	1	1¼
<i>Combination sink and tray</i>	2	1½
<i>Dental lavatory</i>	1	1¼
<i>Dental unit or cuspidor</i>	1	1¼
<i>Dishwashing machine,^c domestic</i>	2	1½
<i>Drinking fountain</i>	½	1¼
<i>Emergency floor drain</i>	0	2
<i>Floor drains</i>	2	2
<i>Kitchen sink, domestic</i>	2	1½
<i>Kitchen sink, domestic with food waste grinder and/or dishwasher</i>	2	1½
<i>Laundry tray (1 or 2 compartments)</i>	2	1½
<i>Lavatory</i>	1	1¼
<i>Shower</i>	2	1½
<i>Sink</i>	2	1½
<i>Urinal</i>	4	Note d
<i>Urinal, 1 gallon per flush or less</i>	2 ^e	Note d
<i>Wash sink (circular or multiple) each set of faucets</i>	2	1½
<i>Water closet, flushometer tank, public or private</i>	4 ^e	Note d
<i>Water closet, private (1.6 gpf)</i>	3 ^e	Note d
<i>Water closet, private (flushing greater than 1.6 gpf)</i>	4 ^e	Note d
<i>Water closet, public (1.6 gpf)</i>	4 ^e	Note d
<i>Water closet, public (flushing greater than 1.6 gpf)</i>	6 ^e	Note d

For SI: 1 inch = 25.4 mm, 1 gallon = 3.785 L.

For traps larger than 3 inches, use Table 709.2.

A shower head over a bathtub or whirlpool bathtub attachment does not increase the drainage fixture unit value.

See Sections 709.2 through 709.4 for methods of computing unit value of fixtures not listed in this table or for rating of devices with intermittent flows.

Trap size shall be consistent with the fixture outlet size.

For the purpose of computing loads on building drains and sewers, water closets and urinals shall not be rated at a lower drainage fixture unit unless the lower values are confirmed by testing.

For fixtures added to a dwelling unit bathroom group, add the DFU value of those additional fixtures to the bathroom group fixture count.

See Section 406.3 for sizing requirements for fixture drain, branch drain, and drainage stack for an automatic clothes washer standpipe.

709.2 Fixtures not listed in Table 709.1. Fixtures not listed in Table 709.1 shall have a drainage fixture unit load based on the outlet size of the fixture in accordance with Table 709.2. The minimum trap size for unlisted fixtures shall be the size of the drainage outlet but not less than 1.25 inches (32 mm).

**TABLE 709.2
DRAINAGE FIXTURE UNITS FOR FIXTURE DRAINS OR TRAPS**

FIXTURE DRAIN OR TRAP SIZE (inches)	DRAINAGE FIXTURE UNIT VALUE
1¼	1
1½	2
2	3
2½	4
3	5
4	6

For SI: 1 inch = 25.4 mm.

709.3 Values for continuous and semicontinuous flow. Drainage fixture unit values for continuous and semicontinuous flow into a drainage system shall be computed on the basis that 1 gpm (0.06 L/s) of flow is equivalent to two fixture units.

709.4 Values for indirect waste receptor. The drainage fixture unit load of an indirect waste receptor receiving the discharge of indirectly connected fixtures shall be the sum of the drainage fixture unit values of the fixtures that discharge to the receptor, but not less than the drainage fixture unit value given for the indirect waste receptor in Table 709.1 or 709.2.

**SECTION PC 710
DRAINAGE SYSTEM SIZING**

710.1 Maximum fixture unit load. The maximum number of drainage fixture units connected to a given size of building sewer, building drain or horizontal branch of the

building drain shall be determined using Table 710.1(1). The maximum number of drainage fixture units connected to a given size of horizontal branch or vertical soil or waste stack shall be determined using Table 710.1(2).

710.1.1 Horizontal stack offsets. Horizontal stack offsets shall be sized as required for building drains in accordance with Table 710.1(1), except as required by Section 711.4.

710.1.2 Vertical stack offsets. Vertical stack offsets shall be sized as required for straight stacks in accordance with Table 710.1(2), except where required to be sized as a building drain in accordance with Section 711.1.1.

**TABLE 710.1 (1)
BUILDING DRAINS AND SEWERS**

DIAMETER OF PIPE (inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS CONNECTED TO ANY PORTION OF THE BUILDING DRAIN OR THE BUILDING SEWER, INCLUDING BRANCHES OF THE BUILDING DRAIN^a			
	Slope per foot			
	1/16 inch	1/8 inch	1/4 inch	1/2 inch
1/4	—	—	1	1
1/2	—	—	3	3
2	—	—	21	26
2 1/2	—	—	24	31
3	—	36	42	50
4	—	180	216	250
5	—	390	480	575
6	—	700	840	1,000
8	1,400	1,600	1,920	2,300
10	2,500	2,900	3,500	4,200
12	3,900	4,600	5,600	6,700
15	7,000	8,300	10,000	12,000

For SI: 1 inch = 25.4 mm, 1 inch per foot = 83.3 mm/m.

a. The minimum size of any building drain serving a water closet shall be 3 inches.

**TABLE 710.1(2)
HORIZONTAL FIXTURE BRANCHES AND STACKS^a**

DIAMETER OF PIPE (inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS (dfu)			
	Total for horizontal branch	Stacks ^b		
		Total discharge into one branch interval	Total for stack of three branch intervals or less	Total for stack Greater than three Branch intervals
1½	3	2	4	8
2	6	6	10	24
2½	12	9	20	42
3	20	20	48	72
4	160	90	240	500
5	360	200	540	1,100
6	620	350	960	1,900
8	1,400	600	2,200	3,600
10	2,500	1,000	3,800	5,600
12	2,900	1,500	6,000	8,400
15	7,000	Note c	Note c	Note c

For SI: 1 inch = 25.4mm

- a. Does not include branches of the building drain. Refer to Table 710.1(1).
- b. Stacks shall be sized based on the total accumulated connected load at each story or branch interval. As the total accumulated connected load decreases, stacks are permitted to be reduced in size. Stack diameters shall not be reduced to less than one-half of the diameter of the largest stack size required.
- c. Sizing load based on design criteria.

710.2 Reserved.

SECTION PC 711

OFFSETS IN DRAINAGE PIPING IN BUILDINGS OF FIVE STORIES OR MORE

711.1 Horizontal branch connections above or below vertical stack offsets. If a horizontal branch connects to the stack within 2 feet (610 mm) above or below a vertical stack offset, and the offset is located more than four branch intervals below the top of the stack, the offset shall be vented in accordance with Section PC 915.

711.1.1 Omission of vents for vertical stack offsets. Vents for vertical offsets required by section 711.1 shall not be required where the stack and its offset are sized as a building drain (see Table 710.1(1), Column 5).

711.2 Horizontal branch connections to horizontal stack offsets. Where a horizontal stack offset is located more than four branch intervals below the top of the stack, a horizontal branch shall not connect within the horizontal stack offset or within 2 feet (610 mm) above or below such offset.

711.3 Horizontal stack offsets. A stack with a horizontal offset located more than four branch intervals below the top of the stack shall be vented in accordance with Section PC 915 and sized as follows:

1. The portion of the stack above the offset shall be sized as for a vertical stack based on the total number of drainage fixture units above the offset.
2. The offset shall be sized in accordance with Section 710.1.1.
3. The portion of the stack below the offset shall be sized as for the offset or based on the total number of drainage fixture units on the entire stack, whichever is larger (see Table 710.1(2), Column 4).

711.3.1 Omission of vents for horizontal stack offsets. Vents for horizontal stack offsets required by Section 711.3 shall not be required where the stack and its offset are one pipe size larger than required for a building drain (see Table 710.1(1), Column 5) and the entire stack and offset are not less in cross-sectional area than that required for a straight stack plus the area of an offset vent as provided for in Section PC 915. Omission of offset vents in accordance with this section shall not constitute approval of horizontal branch connections within the offset or within 2 feet (610 mm) above or below the offset.

711.4 Offsets below lowest branch. Where a vertical offset occurs in a soil or waste stack below the lowest horizontal branch, change in diameter of the stack because of the offset shall not be required. If a horizontal offset occurs in a soil or waste stack below the lowest horizontal branch, the required diameter of the offset and the stack below it shall be determined as for a building drain in accordance with Table 710.1(1).

SECTION PC 712

EJECTORS

712.1 Building subdrains. Building subdrains that cannot be discharged to the sewer by gravity flow shall be discharged into a tightly covered and vented ejector pit/basin from which the liquid shall be lifted and discharged into the building gravity drainage system by automatic pumping equipment or other approved method.

712.2 Valves required. A check valve and full open valve, located on the discharge side of the check valve, shall be installed in the pump or ejector discharge piping between the pump or ejector and the gravity drainage system. Access shall be provided to such valves. Such valves will be located above the sump cover required by Section 712.1 or, where the discharge pipe from the ejector is below grade, the valves shall be accessibly located outside the sump below grade in an access pit with a removable access cover.

712.3 Ejector design. The ejector, pit and discharge piping shall conform to the requirements of Sections 712.3.1 through 712.3.5.

712.3.1 Ejector pump. The ejector pump capacity and head shall be appropriate to anticipated use requirements.

712.3.2 Ejector pit. The ejector pit shall be not less than 18 inches (457 mm) in diameter and 24 inches (610 mm) deep, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The ejector pit shall be constructed of tile, concrete, steel, plastic or other approved materials. The pit bottom shall be solid and provide permanent support for the pump. The ejector pit shall be fitted with a gas-tight removable cover adequate to support anticipated loads in the area of use. The ejector pit shall be vented in accordance with Chapter 9.

712.3.3 Discharge piping. Discharge piping shall meet the requirements of Section 712.2.

712.3.4 Maximum effluent level. The effluent level control shall be adjusted and maintained to at all times prevent the effluent from rising to within 2 inches (51

mm) of the invert of the gravity drain inlet into the sump.

712.3.5 Ejector connection to the drainage system. Pumps connected to the drainage system shall connect to the building sewer or shall connect to a wye fitting in the building drain a minimum of 10 feet (3048 mm) from the base of any soil stack, waste stack or fixture drain. Where the discharge line connects into horizontal drainage piping, the connector shall be made through a wye fitting into the top of the drainage piping.

712.4 Sewage pumps and sewage ejectors. A sewage pump or sewage ejector shall automatically discharge the contents of the pit to the building drainage system downstream of the house trap.

712.4.1 Macerating toilet systems. Macerating toilet systems shall comply with CSA B45.9 or ASME A112.3.4 and shall be installed in accordance with the manufacturer's installation instructions.

712.4.2 Capacity. A sewage pump or sewage ejector shall have the capacity and head for the application requirements. Pumps or ejectors that receive the discharge of water closets shall be capable of handling spherical solids with a diameter of up to and including 2 inches (51 mm). Other pumps or ejectors shall be capable of handling spherical solids with a diameter of up to and including 1 inch (25.4 mm). The minimum capacity of a pump or ejector based on the diameter of the discharge pipe shall be in accordance with Table 712.4.2.

Exceptions:

1. Grinder pumps or grinder ejectors that receive the discharge of water closets shall have a minimum discharge opening of 1.25 inches (32 mm).
2. Macerating toilet assemblies that serve single water closets shall have a minimum discharge opening of 0.75 inch (19 mm).

**TABLE 712.4.2
MINIMUM CAPACITY OF SEWAGE PUMP
OR SEWAGE EJECTOR**

DIAMETER OF THE DISCHARGE PIPE (inches)	CAPACITY OF PUMP OR EJECTOR (gpm)
2	21
2½	30
3	46

For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m.

SECTION PC 713

HEALTH CARE PLUMBING

713.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed

and maintained in the following occupancies: nursing homes; homes for the aged; orphanages; infirmaries; first aid stations; psychiatric facilities; clinics; professional offices of dentists and doctors; mortuaries; educational facilities; surgery, dentistry, research and testing laboratories; establishments manufacturing pharmaceutical drugs and medicines; and other structures with similar apparatus and equipment classified as plumbing.

713.2 Bedpan washers and clinical sinks. Bedpan washers and clinical sinks shall connect to the drainage and vent system in accordance with the requirements for a water closet. Bedpan washers shall also connect to a local vent.

713.3 Indirect waste. All sterilizers, steamers and condensers shall discharge to the drainage through an indirect waste pipe by means of an air gap. Where a battery of not more than three sterilizers discharges to an individual receptor, the distance between the receptor and a sterilizer shall not exceed 8 feet (2438 mm). The indirect waste pipe on a bedpan steamer shall be trapped.

713.4 Vacuum system station. Ready access shall be provided to vacuum system station receptacles. Such receptacles shall be built into cabinets or recesses and shall be visible.

713.5 Bottle system. Vacuum (fluid suction) systems intended for collecting, removing and disposing of blood, pus or other fluids by the bottle system shall be provided with receptacles equipped with an overflow prevention device at each vacuum outlet station.

713.6 Central disposal system equipment. All central vacuum (fluid suction) systems shall provide continuous service. Systems equipped with collecting or control tanks shall provide for draining and cleaning of the tanks while the system is in operation. In hospitals, the system shall be connected to the emergency power system. The exhausts from a vacuum pump serving a vacuum (fluid suction) system shall discharge separately to open air above the roof.

713.7 Central vacuum or disposal systems. Where the waste from a central vacuum (fluid suction) system of the barometric-lag, collection-tank or bottle-disposal type is connected to the drainage system, the waste shall be directly connected to the sanitary drainage system through a trapped waste.

713.7.1 Piping. The piping of a central vacuum (fluid suction) system shall be of corrosion-resistant material with a smooth interior surface. A branch shall not be less than 0.5 inch (12.7 mm) nominal pipe size for one outlet and shall be sized in accordance with the number of vacuum outlets. A main shall not be less than 1 inch (25 mm) nominal pipe size. The pipe sizing shall be increased in accordance with the manufacturer's instructions as stations are increased.

713.7.2 Velocity. The velocity of airflow in a central vacuum (fluid suction) system shall be less than 5,000 feet per minute (25 m/s).

713.8 Vent connections prohibited. Connections between local vents serving bedpan washers or sterilizer vents serving sterilizing apparatus and normal sanitary plumbing systems are prohibited. Only one type of apparatus shall be served by a local vent.

713.9 Local vents and stacks for bedpan washers. Bedpan washers shall be vented to open air above the roof by means of one or more local vents. The local vent for a bedpan washer shall not be less than a 2-inch-diameter (51 mm) pipe. A local vent serving a single bedpan washer is permitted to drain to the fixture served.

713.9.1 Multiple installations. Where bedpan washers are located above each other on more than one floor, a local vent stack is permitted to be installed to receive the local vent on the various floors. Not more than three bedpan washers

shall be connected to a 2-inch (51 mm) local vent stack, not more than six to a 3-inch (76 mm) local vent stack and not more than 12 to a 4-inch (102 mm) local vent stack. In multiple installations, the connections between a bedpan washer local vent and a local vent stack shall be made with tee or tee-wye sanitary pattern drainage fittings installed in an upright position.

713.9.2 Trap required. The bottom of the local vent stack, except where serving only one bedpan washer, shall be drained by means of a trapped and vented waste connection to the sanitary drainage system. The trap and waste shall be the same size as the local vent stack.

713.9.3 Trap seal maintenance. A water supply pipe not less than $\frac{1}{4}$ inch (6.4 mm) in diameter shall be taken from the flush supply of each bedpan washer on the discharge or fixture side of the vacuum breaker, shall be trapped to form not less than a 3-inch (76 mm) water seal, and shall be connected to the local vent stack on each floor. The water supply shall be installed so as to provide a supply of water to the local vent stack for cleansing and drain trap seal maintenance each time a bedpan washer is flushed.

713.10 Sterilizer vents and stacks. Multiple installations of pressure and nonpressure sterilizers shall have the vent connections to the sterilizer vent stack made by means of inverted wye fittings. Access shall be provided to vent connections for the purpose of inspection and maintenance.

713.10.1 Drainage. The connection between sterilizer vent or exhaust openings and the sterilizer vent stack shall be designed and installed to drain to the funnel or basket-type waste fitting. In multiple installations, the sterilizer vent stack shall be drained separately to the lowest sterilizer funnel or basket-type waste fitting or receptor.

713.11 Sterilizer vent stack sizes. Sterilizer vent stack sizes shall comply with Sections 713.11.1 through 713.11.4.

713.11.1 Bedpan steamers. The minimum size of a sterilizer vent serving a bedpan steamer shall be 1.50 inches (38 mm) in diameter. Multiple installations shall be sized in accordance with Table 713.11.1.

TABLE 713.11.1
STACK SIZES FOR BEDPAN STEAMERS
AND BOILING-TYPE STERILIZERS
(Number of Connections of Various Sizes
Permitted to Various-sized Sterilizer Vent Stacks)

STACK SIZE (inches)	CONNECTION SIZE		
	<i>1½</i>		<i>2"</i>
<i>1½^a</i>	<i>1</i>	<i>or</i>	<i>0</i>
<i>2^a</i>	<i>2</i>	<i>or</i>	<i>1</i>
<i>2^b</i>	<i>1</i>	<i>and</i>	<i>1</i>
<i>3^a</i>	<i>4</i>	<i>or</i>	<i>2</i>
<i>3^b</i>	<i>2</i>	<i>and</i>	<i>2</i>
<i>4^a</i>	<i>8</i>	<i>or</i>	<i>4</i>
<i>4^b</i>	<i>4</i>	<i>and</i>	<i>4</i>

For SI: 1 inch = 25.4 mm.

a. Total of each size.

b. Combination of sizes.

713.11.2 Boiling-type sterilizers. *The minimum size of a sterilizer vent stack shall be 2 inches (51 mm) in diameter where serving a utensil sterilizer and 1.5 inches (38 mm) in diameter where serving an instrument sterilizer. Combinations of boiling-type sterilizer vent connections shall be sized in accordance with Table 713.11.1.*

713.11.3 Pressure sterilizers. *Pressure sterilizer vent stacks shall be 2.5 inches (64 mm) minimum. Those serving combinations of pressure sterilizer exhaust connections shall be sized in accordance with Table 713.11.3.*

TABLE 713.11.3
STACK SIZES FOR PRESSURE STERILIZERS
*(Number of Connections of Various Sizes Permitted
 To Various-sized Vent Stacks)*

STACK SIZE (inches)	CONNECTION SIZE			
	$\frac{3}{4}$ "	1"	1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "
1 $\frac{1}{2}$ ^a	3 or	2 or	1	—
1 $\frac{1}{2}$ ^b	2 and	1	—	—
2 ^a	6 or	3 or	2 or	1
2 ^b	3 and	2	—	—
2 ^b	2 and	1 and	1	—
2 ^b	1 and	1 and	—	1
3 ^a	15 or	7 or	5 or	3
3 ^b	1 and	1 and 5 and	2 and —	2 1

For SI: 1 inch = 25.4 mm.

a. Total of each size.

b. Combination of sizes.

713.11.4 Pressure instrument washer sterilizer sizes. The minimum diameter of a sterilizer vent stack serving an instrument washer sterilizer shall be 2 inches (51 mm). Not more than two sterilizers shall be installed on a 2-inch (51mm) stack, and not more than four sterilizers shall be installed on a 3-inch (76 mm) stack.

SECTION PC 714

COMPUTERIZED DRAINAGE DESIGN

714.1 Design of drainage system. The sizing, design and layout of the drainage system shall be permitted to be designed by approved computer design methods.

714.2 Load on drainage system. The load shall be computed from the simultaneous or sequential discharge conditions from fixtures, appurtenances and appliances or the peak usage design condition.

714.2.1 Fixture discharge profiles. The discharge profiles for flow rates versus time from fixtures and appliances shall be in accordance with the manufacturer's specifications.

714.3 Selections of drainage pipe sizes. Pipe shall be sized to prevent full-bore flow.

714.3.1 Selecting pipe wall roughness. Pipe size calculations shall be conducted with the pipe wall roughness factor (k_s), in accordance with the manufacturer's specifications and as modified for aging roughness factors with deposits and corrosion.

714.3.2 Slope of horizontal drainage piping. Horizontal drainage piping shall be designed and installed at slopes in accordance with Table 704.1.

SECTION PC 715

BACKWATER VALVES

715.1 Sewage backflow. Where fixtures, floor drains, or area drains are subject to overflow as the result of backwater from the public sewer system, accessible backwater valves shall be installed in the fixture drain pipe from such fixture, in the branch drain to

such area drain or group of fixtures, or in the building drain at its point of exit from the building and downstream from the building trap.

715.2 Material. All bearing parts of backwater valves shall be of corrosion-resistant material. Backwater valves shall comply with ASME A112.14.1, CSA B181.1 or CSA B181.2.

715.3 Seal. Backwater valves shall be so constructed as to provide a mechanical seal against backflow. The flap shall be so designed as to hang partially open when not subject to backwater pressure.

715.4 Diameter. Backwater valves, when fully opened, shall have a capacity not less than that of the pipes in which they are installed.

715.5 Accessibility. Backwater valves shall be installed so that access is provided to the working parts for service and repair. Masonry access manholes shall be provided when the centerline of any drain line is 18 inches (457 mm) or more below a slab on grade.

CHAPTER 8 INDIRECT/SPECIAL WASTE

SECTION PC 801 GENERAL

801.1 Scope. This chapter shall govern matters concerning indirect waste piping and special wastes. This chapter shall further control matters concerning food-handling establishments, sterilizers, clear-water wastes, swimming pools, methods of providing air breaks or air gaps, and neutralizing devices for corrosive wastes.

801.2 Protection. All devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, distillation, processing, cooling, or storage of ice or foods, and that discharge to the drainage system, shall be provided with protection against backflow, flooding, fouling, contamination and stoppage of the drain.

SECTION PC 802 INDIRECT WASTES

802.1 Where required. Food-handling equipment and clear-water waste shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.7. All health-care related fixtures, devices and equipment shall discharge to the drainage system through an indirect waste pipe by means of an air gap in accordance with this chapter and Section 713.3. Fixtures not required by this section to be indirectly connected shall be directly connected to the plumbing system in accordance with Chapter 7.

802.1.1 Food handling. Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap.

802.1.2 Floor drains in food storage areas. Floor drains located within walk-in refrigerators or freezers in food service and food establishments shall be indirectly connected to the sanitary drainage system by means of an air gap. Where a floor drain is located within an area subject to freezing, the waste line serving the floor drain shall not be trapped and shall indirectly discharge into a waste receptor located outside of the area subject to freezing.

Exception: Where protected against backflow by a backwater valve, such floor drains shall be indirectly connected to the sanitary drainage system by

means of an air break or an air gap.

802.1.3 Potable clear-water waste. Where devices and equipment, such as sterilizers and relief valves, discharge potable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air gap.

802.1.4 Swimming pools. Where wastewater from swimming pools, backwash from filters and water from pool deck drains discharge to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air gap.

802.1.5 Nonpotable clear-water waste. Where devices and equipment such as process tanks, filters, drips and boilers discharge nonpotable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air break or an air gap.

802.1.6 Domestic Dishwashing machines. Domestic dishwashing machines shall discharge indirectly through an air gap or air break into a standpipe or waste receptor in accordance with Section 802.2, or discharge into a wye-branch fitting on the tailpiece of the kitchen sink or the dishwasher connection of a food waste grinder. The waste line of a domestic dishwashing machine discharging into a kitchen sink tailpiece or food waste grinder shall connect to a deck-mounted air gap or the waste line shall rise and be securely fastened to the underside of the sink rim or counter.

802.1.7 Commercial dishwashing machines. The discharge from a commercial dishwashing machine shall be through an air gap or air break into a standpipe or waste receptor in accordance with Section 802.2.

802.2 Installation. All indirect waste piping shall discharge through an air gap or air break into a waste receptor or standpipe. Waste receptors and standpipes shall be trapped and vented and shall connect to the building drainage system. All indirect waste piping that exceeds 2 feet (610 mm) in developed length measured horizontally, or 4 feet (1219 mm) in total developed length, shall be trapped.

802.2.1 Air gap. The air gap between the indirect waste pipe and the flood level rim of the waste receptor shall be a minimum of twice the effective opening of the indirect waste pipe.

802.2.2 Air break. An air break shall be provided between the indirect waste pipe and the trap seal of the waste receptor or standpipe.

802.3 Waste receptors. Every waste receptor shall be of an approved type. A removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall be installed in ventilated spaces. Waste receptors shall not be installed in bathrooms or toilet rooms or in any inaccessible or unventilated space such as a closet or storeroom. Ready access shall be provided to waste receptors.

802.3.1 Size of receptors. A waste receptor shall be sized for the maximum discharge of all indirect waste pipes served by the receptor. Receptors shall be installed to prevent splashing or flooding.

802.3.2 Open hub waste receptors. Waste receptors shall be permitted in the form of a hub or pipe extending not less than 1 inch (25.4 mm) above a water-impervious floor and are not required to have a strainer.

802.4 Standpipes. Standpipes shall be individually trapped. Standpipes shall extend a minimum of 18 inches (457 mm) and a maximum of 42 inches (1067 mm) above the trap weir. Access shall be provided to all standpipes and drains for rodding.

**SECTION PC 803
SPECIAL WASTES**

803.1 Wastewater temperature. Steam pipes shall not connect to any part of a drainage or plumbing system and water above 150°F (66°C) shall not be discharged into any part of a drainage system. Such pipes shall discharge into an indirect waste receptor connected to the drainage system.

803.2 Neutralizing device required for corrosive wastes. Corrosive liquids, spent acids or other harmful chemicals that destroy or injure a drain, sewer, soil or waste pipe, or create noxious or toxic fumes or interfere with sewage treatment processes shall not be discharged into the plumbing system without being thoroughly neutralized or treated in accordance with the requirements of the New York city department of environmental protection.

803.3 System design. A chemical drainage and vent system shall be designed and installed in accordance with this code. Chemical drainage and vent systems shall be completely separated from the sanitary systems. Chemical waste shall not discharge to a sanitary drainage system until such waste has been treated in accordance with Section 803.2.

**SECTION PC 804
MATERIALS, JOINTS AND CONNECTIONS**

804.1 General. The materials and methods utilized for the construction and installation of indirect waste pipes and systems shall comply with the applicable provisions of Chapter 7.

**CHAPTER 9
VENTS**

**SECTION PC 901
GENERAL**

901.1 Scope. The provisions of this chapter shall govern the materials, design, construction and installation of vent systems.

901.2 Trap seal protection. The plumbing system shall be provided with a system of vent piping that will permit the admission or emission of air so that the seal of any fixture trap shall not be subjected to a pneumatic pressure differential of more than 1 inch of water column (249 Pa).

901.2.1 Venting required. Every trap and trapped fixture shall be vented in accordance with one of the venting methods specified in this chapter.

901.3 Chemical waste vent system. The vent system for a chemical waste system shall be independent of the sanitary vent system and shall terminate separately through the roof to the open air.

901.4 Use limitations. The plumbing vent system shall not be utilized for purposes other than the venting of the plumbing system.

901.5 Tests. The vent system shall be tested in accordance with Section PC 312.

901.6 Engineered systems. Engineered venting systems shall conform to the provisions of Section PC 918.

**SECTION PC 902
MATERIALS**

902.1 Vents. *The materials and methods utilized for the construction and installation of venting systems shall comply with the applicable provisions of Section PC 702.*

902.2 Sheet copper. *Sheet copper for vent pipe flashings shall conform to ASTM B 152 and shall weigh not less than 8 ounces per square foot (2.5 kg/m²).*

902.3 Sheet lead. *Sheet lead for vent pipe flashings shall weigh not less than 3 pounds per square foot (15 kg/m²) for field-constructed flashings and not less than 2.5 pounds per square foot (12 kg/m²) for prefabricated flashings.*

**SECTION PC 903
VENT STACKS AND STACK VENTS**

903.1 Stack required. *Every building in which plumbing is installed shall have at least one 4 inch vent stack (or stack vent). Such stack shall run undiminished in size and as directly as possible from the building drain through to the open air above the roof.*

903.1.1 Connection to drainage system. *A vent stack shall connect to the building drain or to the base of a drainage stack in accordance with Section 903.4. A stack vent shall be an extension of the drainage stack.*

903.2 Vent stack required. *A vent stack shall be required for every drainage stack that is three branch intervals or more.*

903.3 Vent termination. *Every vent stack or stack vent shall terminate outdoors above the roof or to the stack vent portion of the soil or waste stack, at least 6 inches (152 mm) above the flood level of the highest fixture connection discharging into the soil or waste stack.*

903.4 Vent connection at base. *Every vent stack shall connect to the base of the drainage stack. The vent stack shall connect at or below the lowest horizontal branch. Where the vent stack connects to the building drain, the connection shall be located downstream of the drainage stack and within a distance of 10 times the diameter of the drainage stack.*

903.5 Vent headers. *Stack vents and vent stacks connected into a common vent header at the top of the stacks and extending to the open air above the roof at one point shall be sized in accordance with the requirements of Section 916.1, but shall not be smaller than the smallest stack vent. The number of fixture units shall be the sum of all fixture units on all stacks connected thereto, and the developed length shall be the longest vent length from the intersection at the base of the most distant stack to the vent terminal in the open air, as a direct extension of one stack.*

903.6 Sub stack connections. *Where it is desired to terminate stacks at a point below the roof terminus of the main vent stack, the sub-stack may connect to the main vent stack provided the portion of the main vent stack above the connection is sized for the total fixture unit load connected thereto, and for the maximum developed length of the stack or sub-stack.*

**SECTION PC 904
VENT TERMINALS**

904.1 Roof extension. *All open vent pipes that extend through a roof shall be terminated at least 24 inches (610 mm) above the roof, except that where a roof is to be used for any purpose other than weather protection or maintenance, the vent extensions*

shall be run at least 7 feet (2134 mm) above the roof. Approved vandal resistant vent caps may be used.

904.2 Frost closure. Where the 97.5-percent value for outside design temperature is 0°F (-18° C) or less, every vent extension through a roof shall be a minimum of 4 inches (102 mm) in diameter. Any increase in the size of the vent shall be made inside the structure directly below the roof.

904.3 Flashings. The juncture of each vent pipe with the roof line shall be made water tight by an approved flashing.

904.4 Prohibited use. Vent terminals shall not be used as a flag pole or to support flag poles, television aerials or similar items.

904.5 Location of vent terminal. An open vent terminal from a drainage system shall not be located directly beneath any door, operable window, or other air intake opening of the building or of an adjacent building, and any such vent terminal shall not be within 10 feet (3048 mm) horizontally of such an opening unless it is at least 3 feet (914 mm) above the top of such opening.

904.6 and 904.7 Reserved.

SECTION PC 905 VENT CONNECTIONS AND GRADES

905.1 Connection. All individual, branch and circuit vents shall connect to a vent stack, stack vent, or extend to the open air above the roof.

905.2 Grade. All vent and branch vent pipes shall be so graded and connected as to drain back to the drainage pipe by gravity.

905.3 Vent connection to drainage system. Every dry vent connecting to a horizontal drain shall connect above the centerline of the horizontal drain pipe.

905.4 Reserved.

905.5 Height above fixtures. A connection between a vent pipe and a vent stack or stack vent shall be made at least 6 inches (152 mm) above the flood level rim of the highest fixture served by the vent. Horizontal vent pipes forming branch vents, relief vents or loop vents shall be at least 6 inches (152 mm) above the flood level rim of the highest fixture served.

905.6 Vent for future fixtures. Where the drainage piping has been roughed-in for future fixtures, a rough-in connection for a vent shall be installed. The vent size shall be not less than one half the diameter of the rough-in drain to be served. The vent rough-in shall connect to the vent system, or shall be vented by other means as provided for in this chapter. The connection shall be identified to indicate that it is a vent.

SECTION PC 906 FIXTURE VENTS

906.1 Reserved.

906.2 Venting of fixture drains. The vent for a fixture drain, except where serving a fixture with integral traps, such as water closets, shall connect above the weir of the fixture trap being vented.

906.3 Crown vent. A vent shall not be installed within two pipe diameters of the trap weir.

SECTION PC 907 INDIVIDUAL VENT

907.1 Individual vent permitted. Each trap and trapped fixture is permitted to be

provided with an individual vent. The individual vent shall connect not more than 4 feet (1219 mm) to the fixture drain of the trap or trapped fixture being vented.

907.2 Floor drain vents. No vents will be required for piping serving floor drains when the floor drain is located not more than 15 feet (4572 mm) from a vented line.

**SECTION PC 908
COMMON VENT**

908.1 Individual vent as common vent. An individual vent is permitted to vent two traps or trapped fixtures as a common vent. The traps or trapped fixtures being common vented shall be located on the same floor level.

908.2 Connection at the same level. Where the fixture drains being common vented connect at the same level, the vent connection shall be at the interconnection of the fixture drains.

908.3 Connection at different levels. Where the fixture drains connect at different levels, the vent shall connect as a vertical extension of the vertical drain. The vertical drain pipe connecting the two fixture drains shall be considered the vent for the lower fixture drain, and shall be sized in accordance with Table 908.3. The upper fixture shall not be a water closet.

**TABLE 908.3
COMMON VENT SIZES**

PIPE SIZE (inches)	MAXIMUM DISCHARGE FROM UPPER FIXTURE DRAIN (dfu)
1½	1
2	4
2½ to 3	6

For SI: 1 inch = 25.4 mm.

**SECTION PC 909
WET VENTING**

909.1 Wet vent permitted. Any combination of fixtures within one bathroom group located in the same room are permitted to be vented by a wet vent. The wet vent shall be considered the vent for the fixtures and shall extend from the connection of the dry vent along the direction of the flow in the drain pipe to the most downstream fixture drain connection to the horizontal branch drain. Only the fixtures within the bathroom groups shall connect to the wet-vented horizontal branch drain. Any additional fixtures shall discharge downstream of the wet vent.

909.2 Vent connection. The dry vent connection to the wet vent shall be an individual vent or common vent to the lavatory, bidet, shower or bathtub. The dry vent shall be sized based on the largest required diameter of pipe within the wet vent system served by the dry vent.

909.3 Size. The wet vent shall be a minimum size of 2 inches (50.8 mm).

**SECTION PC 910
WASTE STACK VENT
RESERVED**

**SECTION PC 911
CIRCUIT VENTING**

911.1 Circuit vent permitted. *A maximum of eight fixtures connected to a horizontal branch drain shall be permitted to be circuit vented. Each fixture drain shall connect horizontally to the horizontal branch being circuit vented. The horizontal branch drain shall be classified as a vent from the most downstream fixture drain connection to the most upstream fixture drain connection to the horizontal branch.*

911.1.1 Multiple circuit-vented branches. *Circuit-vented horizontal branch drains are permitted to be connected together. Each group of a maximum of eight fixtures shall be considered a separate circuit vent and shall conform to the requirements of this section.*

911.2 Vent connection. *The circuit vent connection shall be located between the two most upstream fixture drains. The vent shall connect to the horizontal branch and shall be installed in accordance with Section 905. The circuit vent pipe shall not receive the discharge of any soil or waste.*

911.3 Slope and size of horizontal branch. *The maximum slope of the vent section of the horizontal branch drain shall be one unit vertical in 12 units horizontal (8-percent slope). The entire length of the vent section of the horizontal branch drain shall be sized for the total drainage discharge to the branch.*

911.3.1 Size of multiple circuit vent. *Each separate circuit-vented horizontal branch that is interconnected shall be sized independently in accordance with Section 911.3. The downstream circuit-vented horizontal branch shall be sized for the total discharge into the branch, including the upstream branches and the fixtures within the branch.*

911.4 Relief vent. *A relief vent shall be provided for circuit vented horizontal branches receiving the discharge of four or more water closets and connecting to a drainage stack that receives the discharge of soil or waste from upper horizontal branches.*

911.4.1 Connection and installation. *The relief vent shall connect to the horizontal branch drain between the stack and the most downstream fixture drain of the circuit vent. The relief vent shall be installed in accordance with Section PC 905.*

911.4.2 Fixture drain or branch. *The relief vent is permitted to be a fixture drain or fixture branch for fixtures located within the same branch interval as the circuit-vented horizontal branch. The maximum discharge to a relief vent shall be four fixture units.*

911.5 Additional fixtures. *Fixtures, other than the circuit-vented fixtures, are permitted to discharge to the horizontal branch drain. Such fixtures shall be located on the same floor as the circuit-vented fixtures and shall be either individually or common vented.*

**SECTION PC 912
COMBINATION DRAIN AND VENT SYSTEM**

912.1 Permitted Combination Waste and Vent System. *A combination waste and vent piping system, limited for use as a means of venting the traps of floor drains*

and laboratory sinks, shall be permitted in conjunction with horizontal branch waste piping of an independent flammable oil waste system or acid waste systems, and as described under indirect wastes and special wastes.

912.2 Installation. Combination drain and vent system shall comply with this section.

912.2.1 Slope. The horizontal combination drain and vent pipe shall have a maximum slope of one-half unit vertical in 12 units horizontal (4-percent slope). The minimum slope shall be in accordance with Table 704.1.

912.2.2 Connection. The combination drain and vent system shall be provided with a dry vent connected at any point within the system or the system shall connect to a horizontal drain that is vented in accordance with one of the venting methods specified in this chapter. Combination drain and vent systems connecting to building drains receiving only the discharge from a stack or stacks shall be provided with a dry vent. The vent connection to the combination drain and vent pipe shall extend vertically a minimum of 6 inches (152 mm) above the flood level rim of the highest fixture being vented before offsetting horizontally.

912.2.3 Vent size. The vent shall be sized for the total drainage fixture unit load in accordance with Section 916.2.

912.3 Size. The minimum size of a combination drain and vent pipe shall be in accordance with Table 912.3.

**TABLE 912.3
SIZE OF COMBINATION DRAIN AND VENT PIPE**

DIAMETER PIPE (inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS (dfu) (dfu)	
	Connecting to a horizontal branch or stack	Connecting to a building drain or building subdrain
2	3	4
2½	6	26
3	12	31
4	20	50
5	160	250
6	360	575

SI: 1 inch = 25.4 mm.

**SECTION PC 913
ISLAND FIXTURE VENTING**

913.1 Limitation. Island fixture venting shall not be permitted for fixtures other than sinks and lavatories. Residential kitchen sinks with a dishwasher waste connection, a food waste grinder, or both, in combination with the kitchen sink waste, shall be permitted to be vented in accordance with this section.

913.2 Vent connection. The island fixture vent shall connect to the fixture drain as required for an individual or common vent. The vent shall rise vertically to above the

drainage outlet of the fixture being vented before offsetting horizontally or vertically downward. The vent or branch vent for multiple island fixture vents shall extend to a minimum of 6 inches (152 mm) above the highest island fixture being vented before connecting to the outside vent terminal.

913.3 Vent installation below the fixture flood level rim. The vent located below the flood level rim of the fixture being vented shall be installed as required for drainage piping in accordance with Chapter 7, except for sizing. The vent shall be sized in accordance with Section 916.2. The lowest point of the island fixture vent shall connect full size to the drainage system. The connection shall be to a vertical drain pipe or to the top half of a horizontal drain pipe. Cleanouts shall be provided in the island fixture vent to permit rodding of all vent piping located below the flood level rim of the fixtures. Rodding in both directions shall be permitted through a cleanout.

SECTION PC 914

RELIEF VENTS - STACKS OF MORE THAN 10 BRANCH INTERVALS

914.1 Where required. Soil and waste stacks in buildings having more than 10 branch intervals shall be provided with a yoke relief vent at each tenth interval installed, beginning with the top floor.

914.2 Size and connection. The size of the relief yoke vent shall be equal to the size of the vent stack to which it connects. The lower end of each relief vent shall connect to the soil or waste stack through a wye below the horizontal branch serving the floor, and the upper end shall connect to the vent stack through a tee or inverted wye not less than 3 feet (914 mm) above the floor.

SECTION PC 915

VENTS FOR STACK OFFSETS

915.1 Vent for horizontal offset of drainage stack. Horizontal offsets of drainage stacks shall be vented where five or more branch intervals are located above the offset. The offset shall be vented by venting the upper section of the drainage stack and the lower section of the drainage stack.

915.2 Upper section. The upper section of the drainage stack shall be vented as a separate stack with a vent stack connection installed in accordance with Section 903.4. The offset shall be considered the base of the stack.

915.3 Lower section. The lower section of the drainage stack shall be vented by a yoke vent connecting between the offset and the next lower horizontal branch. The yoke vent connection shall be permitted to be a vertical extension of the drainage stack. The size of the yoke vent and connection shall be a minimum of the size required for the vent stack of the drainage stack.

SECTION PC 916

VENT PIPE SIZING

916.1 Size of stack vents and vent stacks. The minimum required diameter of stack vents and vent stacks shall be determined from the developed length and the total of drainage fixture units connected thereto in accordance with Table 916.1, but in no case shall the diameter be less than one-half the diameter of the drain served or less than 1 ½ inches (38 mm).

TABLE 916.1
SIZE AND DEVELOPED LENGTH OF STACK VENTS AND VENT STACKS

DIAMETER OF SOIL OR WASTE STACK (inches)	TOTAL FIXTURE UNITS BEING VENTED (dfu)	MAXIMUM DEVELOPED LENGTH OF VENT (feet) ^a DIAMETER OF VENT (inches)									
		1½	2	2½	3	4	5	6	8	10	12
		1½	8	150	—	—	—	—	—	—	—
1½	10	100	—	—	—	—	—	—	—	—	—
2	12	75	200	—	—	—	—	—	—	—	—
2	20	50	150	—	—	—	—	—	—	—	—
2½	42	30	100	300	—	—	—	—	—	—	—
3	10	42	150	360	1,040	—	—	—	—	—	—
3	21	32	110	270	810	—	—	—	—	—	—
3	53	27	94	230	680	—	—	—	—	—	—
3	102	25	86	210	620	—	—	—	—	—	—
4	43	—	35	85	250	980	—	—	—	—	—
4	140	—	27	65	200	750	—	—	—	—	—
4	320	—	23	55	170	640	—	—	—	—	—
4	540	—	21	50	150	580	—	—	—	—	—
5	190	—	—	28	82	320	990	—	—	—	—
5	490	—	—	21	63	250	760	—	—	—	—
5	940	—	—	18	53	210	670	—	—	—	—
5	1,400	—	—	16	49	190	590	—	—	—	—
6	500	—	—	—	33	130	400	1,000	—	—	—
6	1,100	—	—	—	26	100	310	780	—	—	—
6	2,000	—	—	—	22	84	260	660	—	—	—
6	2,900	—	—	—	20	77	240	600	—	—	—
8	1,800	—	—	—	—	31	95	240	940	—	—
8	3,400	—	—	—	—	24	73	190	720	—	—
8	5,600	—	—	—	—	20	62	160	610	—	—
8	7,600	—	—	—	—	18	56	140	560	—	—
10	4,000	—	—	—	—	—	31	78	310	960	—
10	7,200	—	—	—	—	—	24	60	240	740	—
10	11,000	—	—	—	—	—	20	51	200	630	—
10	15,000	—	—	—	—	—	18	46	180	570	—
12	7,300	—	—	—	—	—	—	31	120	380	940
12	13,000	—	—	—	—	—	—	24	94	300	720
12	20,000	—	—	—	—	—	—	20	79	250	610
12	26,000	—	—	—	—	—	—	18	72	230	500
15	15,000	—	—	—	—	—	—	—	40	130	310
15	25,000	—	—	—	—	—	—	—	31	96	240
15	38,000	—	—	—	—	—	—	—	26	81	200
15	50,000	—	—	—	—	—	—	—	24	74	180

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. The developed length shall be measured from the vent connection to the open air.

916.2 Vents other than stack vents or vent stacks. The diameter of individual vents, branch vents, circuit vents and relief vents shall be at least one-half the required diameter of the drain served. The required size of the drain shall be determined in

accordance with Table 710.1(2). Vent pipes shall not be less than 1 ½ inches (38 mm) in diameter. Vents shall be sized in accordance with Table 916.1 utilizing the drainage fixture units and the corresponding developed length. Relief vents for soil and waste stacks in buildings having more than 10 branch intervals shall be sized in accordance with Section 914.2.

916.3 Developed length. The developed length of individual, branch, circuit and relief vents shall be measured from the farthest point of vent connection to the drainage system to the point of connection to the vent stack, stack vent or termination outside of the building.

916.4 Multiple branch vents. Where multiple branch vents are connected to a common branch vent, the common branch vent shall be sized in accordance with this section based on the size of the common horizontal drainage branch that is or would be required to serve the total drainage fixture unit (dfu) load being vented.

916.5 Ejector vents. Ejector vent sizes shall be determined in accordance with Sections 916.5.1 and 916.5.2.

916.5.1 Sewage pumps and sewage ejectors other than pneumatic. Drainage piping below sewer level shall be vented in a similar manner to that of a gravity system. Building sump vent sizes for sumps with sewage pumps or sewage ejectors, other than pneumatic, shall be determined in accordance with Table 916.5.1.

916.5.2 Pneumatic sewage ejectors. The air pressure relief pipe from a pneumatic sewage ejector shall be connected to an independent vent stack terminating as required for vent extensions through the roof. The relief pipe shall be sized to relieve air pressure inside the ejector to atmospheric pressure, but shall not be less than 1 ½ inches (38 mm) in size.

**TABLE 916.5.1
SIZE AND LENGTH OF SUMP VENTS**

DISCHARGE CAPACITY OF PUMP (gpm)	MAXIMUM DEVELOPED LENGTH OF VENT (feet) ^a					
	Diameter of vent (inches)					
	1¼	1½	2	2½	3	4
10	No limit ^b	No limit	No limit	No limit	No limit	No limit
20	2270	No limit	No limit	No limit	No limit	No limit
40	72	160	No limit	No limit	No limit	No limit
60	31	75	270	No limit	No limit	No limit
80	16	41	150	380	No limit	No limit
100	10 ^c	25	97	250	No limit	No limit
150	Not permitted	10 ^c	44	110	370	No limit
200	Not permitted	Not permitted	20	60	210	No limit
250	Not permitted	Not permitted	10	36	132	No limit
300	Not permitted	Not permitted	10 ^c	22	88	380
400	Not permitted	Not permitted	Not permitted	10 ^c	44	210
500	Not permitted	Not permitted	Not permitted	Not permitted	24	130

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- Developed length plus an appropriate allowance for entrance losses and friction due to fittings, changes in direction and diameter. Suggested allowances shall be obtained from NSB Mono graph 31 or other approved sources. An allowance of 50 per cent of the developed length shall be assumed if a more precise value is not available.
- Actual values greater than 500 feet.
- Less than 10 feet.

**SECTION PC 917
AIR ADMITTANCE VALVES
RESERVED**

**SECTION PC 918
ENGINEERED VENT SYSTEMS**

918.1 General. Engineered vent systems shall comply with this section and Section 28-105.

918.2 Individual branch fixture and individual fixture header vents. The maximum developed length of individual fixture vents to vent branches and vent headers shall be determined in accordance with Table 918.2 for the minimum pipe diameters at the indicated vent airflow rates. The individual vent airflow rate shall be determined in accordance with the following:

$$Q_{A,b} = N_{A,b} Q_v \quad \text{(Equation 9-1)}$$

For SI: $Q_{A,b} = N_{A,b} Q_v$ (0.4719 L/s)

where:

$N_{A,b}$ = Number of fixtures per header (or vent branch), total number of fixtures connected to vent stack.

$Q_{A,b}$ = Vent branch or vent header airflow rate (cfm).

Q_v = Total vent stack airflow rate (cfm).

Q_v (gpm) = $27.8 r_s^{2/3} (1 - r_s) D^{2/3}$

Q_v (cfm) = $0.134 Q_v$ (gpm)

where:

D = Drainage stack diameter (inches).

Q_w = Design discharge load (gpm).

r_s = Waste water flow area to total area.

$$\frac{Q_w}{27.8 D^{2/3}}$$

Individual vent airflow rates are obtained by equally distributing $Q_{A,b}$ into one-half the total number of fixtures on the branch or header for more than two fixtures; for an odd number of total fixtures, decrease by one; for one fixture, apply the full value of $Q_{A,b}$.

Individual vent developed length shall be increased by 20 percent of the distance from the vent stack to the fixture vent connection on the vent branch or header.

TABLE 918.2
MINIMUM DIAMETER AND MAXIMUM LENGTH OF INDIVIDUAL BRANCH
FIXTURE VENTS AND INDIVIDUAL
FIXTURE HEADER VENTS FOR SMOOTH PIPES

DIAMETER OF VENT PIPE (inches)	INDIVIDUAL VENT AIRFLOW RATE (cubic feet per minute)																			
	Maximum developed length of vent (feet)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
½	95	25	13	8	5	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1
¾	100	88	47	30	20	15	10	9	7	6	5	4	3	3	3	2	2	2	2	1
1	-	-	100	94	65	48	37	29	24	20	17	14	12	11	9	8	7	7	6	6
1¼	-	-	-	-	-	-	-	100	87	73	62	53	46	40	36	32	29	26	23	21
1½	-	-	-	-	-	-	-	-	-	-	-	100	96	84	75	65	60	54	49	45
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100

For SI: 1 inch = 25.4 mm, 1 cubic foot per minute = 0.4719 L/s, 1 foot = 304.8 mm

918.3 A Licensed Professional Engineer shall certify design. An engineer shall also inspect and certify the system upon completion of the system.

SECTION PC 919
COMPUTERIZED VENT DESIGN

919.1 Design of vent system. The sizing, design and layout of the vent system shall be permitted to be determined by approved computer program design methods.

919.2 System capacity. The vent system shall be based on the air capacity requirements of the drainage system under a peak load condition.

919.3 Design shall be certified by a Licensed Professional Engineer. An engineer shall also inspect and certify the system upon completion of the system.

CHAPTER 10
TRAPS, INTERCEPTORS AND SEPARATORS

SECTION PC 1001
GENERAL

1001.1 Scope. This chapter shall govern the material and installation of traps, interceptors and separators.

SECTION PC 1002
TRAP REQUIREMENTS

1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a water-seal trap, except as otherwise permitted by this code. The trap shall be placed as close as possible to the fixture outlet. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm). The distance of a clothes washer standpipe above a trap shall conform to Section 802.4. A fixture shall not be double trapped.

Exceptions:

1. This section shall not apply to fixtures with integral traps.

2. *A combination plumbing fixture is permitted to be installed on one trap provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.*
3. *A grease trap intended to serve as a fixture trap in accordance with the manufacturer's installation instructions shall be permitted to serve as the trap for a single fixture or a combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm), and the developed length of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm).*

1002.2 Design of traps. *Fixture traps shall be self-scouring. Fixture traps shall not have interior partitions, except where such traps are integral with the fixture or where such traps are constructed of an approved material that is resistant to corrosion and degradation. Slip joints shall be made with an approved elastomeric gasket and shall be installed only on the trap inlet, trap outlet and within the trap seal.*

1002.3 Prohibited traps. *The following types of traps are prohibited:*

1. *Traps that depend on moving parts to maintain the seal.*
2. *Bell traps.*
3. *Crown-vented traps.*
4. *Traps not integral with a fixture and that depend on interior partitions for the seal, except those traps constructed of an approved material that is resistant to corrosion and degradation.*
5. *"S" traps.*
6. *Drum traps.*

Exception: *Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited.*

1002.4 Trap seals. *Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures. Where a trap seal is subject to loss by evaporation, a trap seal primer valve shall be installed. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.*

1002.5 Size of fixture traps. *Fixture trap size shall be sufficient to drain the fixture rapidly and not less than the size indicated in Table 709.1. A trap shall not be larger than the drainage pipe into which the trap discharges.*

1002.6 Building traps. *Building traps shall be provided with a cleanout and a relief vent or fresh air intake but in no case less than 3 inches (76 mm) on the inlet side of the trap. The size of the relief vent or fresh air intake shall not be less than one-half the diameter of the drain to which the relief vent or air intake connects. Such relief vent or fresh air intake shall be carried above grade and shall be terminated in a screened outlet located outside the building.*

1002.7 Trap setting and protection. *Traps shall be set level with respect to the trap seal and, where necessary, shall be protected from freezing.*

1002.8 Recess for trap connection. *A recess provided for connection of the underground trap, such as one serving a bathtub in slab-type construction, shall have sides and a bottom of corrosion-resistant, insect- and vermin proof construction.*

1002.9 Acid-resisting traps. *Where a vitrified clay or other brittleware, acid-resisting trap is installed underground, such trap shall be embedded in concrete extending 6 inches (152 mm) beyond the bottom and sides of the trap.*

1002.10 Plumbing in mental health centers. *In mental health centers, pipes and traps shall not be exposed.*

**SECTION PC 1003
INTERCEPTORS AND SEPARATORS**

1003.1 Where required. *Interceptors and separators shall be provided to prevent the discharge of oil, grease, sand and other substances harmful or hazardous to the building drainage system, the public sewer, or sewage treatment plant or processes.*

1003.2 Approval. *The size, type and location of each interceptor and of each separator shall be designed and installed in accordance with the manufacturer's instructions and the requirements of this section based on the anticipated conditions of use. Wastes that do not require treatment or separation shall not be discharged into any interceptor or separator.*

1003.3 Grease traps and grease interceptors. *Grease traps and grease interceptors shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.2.*

1003.3.1 Grease traps and grease interceptors required. *A grease trap or grease interceptor shall be required to receive the drainage from fixtures and equipment with grease-laden waste located in food preparation areas, such as in restaurants, hotel kitchens, hospitals, school kitchens, bars, factory cafeterias, or restaurants and clubs.*

1003.3.2 Food waste grinders. *Where food waste grinders connect to grease traps, a solids interceptor shall separate the discharge before connecting to the grease trap. Solids interceptors and grease interceptors shall be sized and rated for the discharge of the food waste grinder.*

1003.3.3 Grease trap and grease interceptor not required. *A grease trap or a grease interceptor shall not be required for individual dwelling units or any private living quarters.*

1003.3.4 Grease traps and grease interceptors. *Grease traps and grease interceptors shall conform to PDI G101, ASME A112.14.3 or ASME A112.14.4 and shall be installed in accordance with the manufacturer's instructions.*

1003.3.4.1 Grease trap capacity. *Grease traps shall have the grease retention capacity indicated in Table 1003.3.4.1 for the flow-through rates indicated.*

1003.3.4.2 Rate of flow controls. *Grease traps shall be equipped with devices to control the rate of water flow so that the water flow does not exceed the rated flow. The flow-control device shall be vented and terminate not less than 6 inches (152 mm) above the flood rim level or be installed in accordance with the manufacturer's instructions.*

**TABLE 1003.3.4.1
CAPACITY OF GREASE TRAPS**

TOTAL FLOW-THROUGH RATING (gpm)	GREASE RETENTION CAPACITY (pounds)
4	8
6	12
7	14
9	18
10	20
12	24
14	28
15	30
18	36
20	40
25	50
35	70
50	100

For SI: 1 gallon per minute = 3.785 L/m, 1 pound = 0.454 kg.

1003.4 Oil separators required. *At repair garages, car washing facilities with engine or undercarriage cleaning capability and at factories where oily and flammable liquid wastes are produced, separators shall be installed into which all oil-bearing, grease-bearing or flammable wastes shall be discharged before emptying in the building drainage system or other point of disposal.*

1003.4.1 Separation of liquids. *A mixture of treated or untreated light and heavy liquids with various specific gravities shall be separated in an approved receptacle.*

1003.4.2 Oil separator design. *Oil separators shall be designed in accordance with Sections 1003.4.2.1 and 1003.4.2.2.*

1003.4.2.1 General design requirements. *Oil separators shall have a depth of not less than 2 feet (610 mm) below the invert of the discharge drain. The outlet opening of the separator shall have not less than an 18-inch (457 mm) water seal.*

1003.4.2.2 Garages and service stations. *Where automobiles are serviced, greased, repaired or washed or where gasoline is dispensed, oil separators shall have a minimum capacity of 6 cubic feet (0.17 m³) for the first 100 square feet (9.3 m²) of area to be drained, plus 1 cubic foot (0.028 m³) for each additional 100 square feet (9.3 m²) of area to be drained into the separator. Parking garages in which servicing, repairing or washing is not conducted, and in which gasoline is not dispensed, shall not require a separator. Areas of*

commercial garages utilized only for storage of automobiles are not required to be drained through a separator.

1003.5 Sand interceptors in commercial establishments. Sand and similar interceptors for heavy solids shall be designed and located so as to be provided with ready access for cleaning, and shall have a water seal of not less than 6 inches (152 mm).

1003.6 Laundries. Commercial laundries shall be equipped with an interceptor with a wire basket or similar device, removable for cleaning, that prevents passage into the drainage system of solids 0.5 inch (12.7 mm) or larger in size, string, rags, buttons or other materials detrimental to the public sewage system.

1003.7 Bottling establishments. Bottling plants shall discharge process wastes into an interceptor that will provide for the separation of broken glass or other solids before discharging waste into the drainage system.

1003.8 Slaughterhouses. Slaughtering room and dressing room drains shall be equipped with approved separators. The separator shall prevent the discharge into the drainage system of feathers, entrails and other materials that cause clogging.

1003.9 Venting of interceptors and separators. Interceptors and separators shall be designed so as not to become air bound where tight covers are utilized. Each interceptor or separator shall be vented where subject to a loss of trap seal.

1003.10 Access and maintenance of interceptors and separators. Access shall be provided to each interceptor and separator for service and maintenance. Interceptors and separators shall be maintained by periodic removal of accumulated grease, scum, oil, or other floating substances and solids deposited in the interceptor or separator.

SECTION PC 1004

MATERIALS, JOINTS AND CONNECTIONS

1004.1 General. The materials and methods utilized for the construction and installation of traps, interceptors and separators shall comply with this chapter and the applicable provisions of Chapters 4 and 7. The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping system.

CHAPTER 11

STORM DRAINAGE

SECTION PC 1101

GENERAL

1101.1 Scope. The provisions of this chapter shall govern the materials, design, construction and installation of storm drainage. Storm Water discharge shall be in accordance with city department of environmental protection requirements.

1101.2 Where required. All roofs, paved areas, yards, courts and courtyards shall drain into a separate storm sewer system, or a combined sewer system, or to an approved place of disposal. In accordance with city department of environmental protection requirements, an approved system for beneficial collection and use of storm water may be installed in which case overflow from such a system shall be discharged to street storm sewer or street combined sewer.

1101.3 Prohibited drainage. Storm water shall not be drained into sewers intended for sewage only.

1101.4 Tests. The conductors and the building storm drain shall be tested in accordance with Section PC 312.

1101.5 Continuous flow. The size of a drainage pipe shall not be reduced in the direction of flow.

1101.6 Fittings and connections. All connections and changes in direction of the storm drainage system shall be made with approved drainage-type fittings in accordance with Table 706.3. The fittings shall not obstruct or retard flow in the system.

1101.7 Roof design. Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drains shall be assumed to be blocked.

1101.8 Cleanouts required. Cleanouts shall be installed in the storm drainage system and shall comply with the provisions of this code for sanitary drainage pipe cleanouts.

Exception: Subsurface drainage system.

1101.9 Backwater valves. Backwater valves installed in a storm drainage system shall conform to Section PC 715.

1101.10 Plastic Pipe. Plastic piping and fittings shall not be used.

Exceptions:

1. Plastic piping and fittings may be used in residential buildings five stories or less in height.
2. Corrugated polyethylene piping and fittings, with a diameter of twelve inches (305 mm) or more may be used in connection with any type of building for underground yard drainage and storm water piping when used outside of the foundation wall of the building and not connecting to any piping system from the interior of the building.

**SECTION 1102
MATERIALS**

1102.1 General. The materials and methods utilized for the construction and installation of storm drainage systems shall comply with this section and the applicable provisions of Chapter 7.

1102.2 Inside storm drainage conductors. Inside storm drainage conductors installed above ground shall conform to one of the standards listed in Table 702.1.

1102.3 Underground building storm drain pipe. Underground building storm drain pipe shall conform to one of the standards listed in Table 702.2.

1102.4 Building storm sewer pipe. Building storm sewer pipe shall conform to one of the standards listed in Table 1102.4.

**TABLE 1102.4
BUILDING STORM SEWER PIPE**

MATERIAL	STANDARD
Cast-iron pipe	ASTM A 74; ASTM A 888; CISPI 301
Concrete pipe	ASTM C 14; ASTM C 76; CAN/CSA A257.1M; CAN/CSA A257.2M
Ductile-iron pipe	AWWA C151
High density polyethylene pipe (HDPE) ^a	ASTM D 3350
Non-asbestos fiber-cement pipe	ASTM C 1449
Polyvinyl chloride (PVC) plastic pipe (Type DWV, SDR26, SDR35, SDR41, PS50 or PS100) ^a	ASTM D 2665; ASTM D 3034; ASTM F 891; CSA B182.2; CAN/CSA B182.4
Vitrified clay pipe	ASTM C 4; ASTM C 700
Stainless steel drainage Systems, Type 316L	ASME A112.3.1

a. Approved plastic sewer for piping 12 inches and larger.

1102.5 Subsoil drain pipe. Subsoil drains shall be open-jointed, horizontally split or perforated pipe conforming to one of the standards listed in Table 1102.5.

**TABLE 1102.5
SUBSOIL DRAIN PIPE**

MATERIAL	STANDARD
Cast-iron pipe	ASTM A 74; ASTM A 888; CISPI 301
Polyethylene (PE) plastic pipe	ASTM F 405
Polyvinyl chloride (PVC) Plastic pipe (type sewer pipe, PS25, PS50 or PS100)	ASTM D 2729; ASTM F 891; CSA B 182.2; CAN/CSA B182.4
Porous concrete pipe	ASTM C 654
Vitrified clay pipe	ASTM C 4; ASTM C 700
Stainless steel drainage Systems, Type 316L	ASME A112.3.1

1102.6 Roof drains. Roof drains shall conform to ASME A112.21.2M or ASME A112.3.1.

1102.7 Fittings. Pipe fittings shall be approved for installation with the piping material installed, and shall conform to the respective pipe standards or one of the standards listed in Table 1102.7. The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type.

**TABLE 1102.7
PIPE FITTINGS**

MATERIAL	STANDARD
Cast-iron	ASME B16.4; ASME B16.12; ASTM A 888; CISPI 301; ASTM A 74
Chlorinated polyvinyl chloride	ASTM F 437; ASTM F 438; ASTM F 439
	ASME B16.15; ASME
Gray iron and ductile iron	AWWA C110
High-density polyethylene (HDPE)	ASTM D 3350
Malleable iron	ASME B16.3
Plastic, general	ASTM F 409
Polyethylene (PE) plastic	ASTM D 2609
Polyvinyl chloride (PVC) plastic	ASTM D 2464; ASTM D 2466; ASTM D 2467; CSA B137.2; ASTM D 2665; ASTM F
Steel	ASME B16.9; ASME B16.11; ASME B16.28
Stainless steel drainage Systems, Type 316L	ASME A112.3.1

**SECTION PC 1103
TRAPS**

1103.1 Main trap. Leaders and storm drains connected to a combined sewer shall be trapped. Individual storm water traps shall be installed on the storm water drain branch serving each conductor, or a single trap shall be installed in the main storm drain just before its connection with the combined building sewer or the public sewer. A hooded catch basin located within the street line shall be the equivalent of a building house trap for the connection to a street combined sewer.

1103.2 Material. Storm water traps shall be of the same material as the piping system to which they are attached.

1103.3 Size. Traps for individual conductors shall be the same size as the horizontal

drain to which they are connected.

1103.4 Cleanout. An accessible cleanout shall be installed on the building side of the trap.

SECTION PC 1104 CONDUCTORS AND CONNECTIONS

1104.1 Prohibited use. Conductor pipes shall not be used as soil, waste or vent pipes, and soil, waste or vent pipes shall not be used as conductors.

1104.2 Combining storm with sanitary drainage. The sanitary and storm drainage systems of a structure shall be entirely separate except for minor modifications to existing buildings having combined systems. Where a combined building drain is utilized, the building storm drain shall be connected in the same horizontal plane through a single-wye fitting to the combined sewer at least 10 feet (3048 mm) downstream from any soil stack. If a separate city storm sewer is not available, building sanitary drains shall be separate and shall only be permitted to connect to common building combined sewer downstream of building house trap.

1104.3 Clear water drains. Drains carrying clear water, i.e. air conditioning drips, pump drips, cooling water, etc. may discharge into the storm water drainage system through an indirect waste connection discharging into a trapped funnel or raised lip floor drain.

SECTION PC 1105 ROOF DRAINS

1105.1 Strainers. Roof drains shall have strainers extending not less than 4 inches (102 mm) above the surface of the roof immediately adjacent to the roof drain. Strainers shall have an available inlet area, above roof level, of not less than one and one-half times the area of the conductor or leader to which the drain is connected.

1105.2 Flat decks. Roof drain strainers for use on sun decks, parking decks and similar areas that are normally serviced and maintained shall comply with Section 1105.1 or shall be of the flat-surface type, installed level with the deck, with an available inlet area not less than two times the area of the conductor or leader to which the drain is connected.

1105.3 Roof drain flashings. The connection between roofs and roof drains which pass through the roof and into the interior of the building shall be made water tight by the use of approved flashing material.

SECTION 1106 SIZE OF CONDUCTORS, LEADERS

1106.1 General. The size of the vertical conductors and leaders, gutters, building storm drains, building storm sewers, and any horizontal branches of such drains or sewers shall be based on the 100-year hourly rainfall rate of 3 inches (76 mm) per hour. Sizing for secondary and combined primary and secondary conductors, leaders and drains shall be in accordance with Section PC 1107.

1106.2 Vertical conductors and leaders. Vertical conductors and leaders shall be sized for the maximum projected roof area, in accordance with Table 1106.2.

**TABLE 1106.2
SIZE OF VERTICAL CONDUCTORS AND LEADERS**

DIAMETER OF OF LEADER (inches)^a	HORIZONTALLY PROJECTED ROOF AREA (square feet)
	Rainfall rate (inches per hour)
	3
2	960
3	2,930
4	6,130
5	11,530
6	17,995
8	38,660

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

a. Sizes indicated are the diameter of circular piping. This table is applicable to piping of other shapes provided the cross-sectional shape fully encloses a circle of the diameter indicated in this table.

1106.3 Building storm drains and sewers. *The size of the building storm drain, building storm sewer and their horizontal branches having a slope of one-half unit or less vertical in 12 units horizontal (4-percent slope) shall be based on the maximum projected roof area in accordance with Table 1106.3. The minimum slope of horizontal branches shall be one-eighth unit vertical in 12 units horizontal (1-percent slope) unless otherwise approved.*

**TABLE 1106.3
SIZE OF HORIZONTAL STORM DRAINAGE PIPING**

SIZE OF HORIZONTAL PIPING (inches)	HORIZONTALLY PROJECTED ROOF AREA (square feet)	
	Rainfall rate (inches per hour)	
	3	6
<i>¹/₈ unit vertical in 12 units horizontal (1-percent slope)</i>		
3	1,096	548
4	2,506	1,253
5	4,453	2,227
6	7,133	3,566
8	15,330	7,600
10	27,600	13,800
12	44,400	22,200
15	72,800	39,650
<i>¹/₄ unit vertical in 12 units horizontal (2-percent slope)</i>		

3	1,546	773
4	3,533	1,766
5	6,293	3,146
6	10,066	5,033
8	21,733	10,866
10	38,950	19,450
12	62,600	31,350
15	112,000	56,000
<i>½ unit vertical in 12 units horizontal (4-percent slope)</i>		
3	2,295	1,096
4	5,010	2,500
5	8,900	4,450
6	13,700	7,140
8	30,650	15,320
10	55,200	27,600
12	88,800	44,400
15	158,800	79,250

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

1106.4 Vertical walls. *In sizing roof drains and storm drainage piping, one-half of the area of any vertical wall that diverts rainwater to the roof shall be added to the projected roof area for inclusion in calculating the required size of vertical conductors, leaders and horizontal storm drainage piping.*

1106.5 Parapet wall scupper location. *Parapet wall roof drainage scupper and overflow scupper location shall comply with the requirements of the New York city building code.*

1106.6 Size of roof gutters. *The size of semicircular gutters shall be based on the maximum projected roof area in accordance with Table 1106.6.*

TABLE 1106.6
SIZE OF SEMICIRCULAR ROOF GUTTERS

DIAMETER OF GUTTERS (inches)	HORIZONTALLY PROJECTED ROOF AREA (square feet)
	Rainfall rate (inches per hour)
	3
<i>1/16 unit vertical in 12 units horizontal (0.5-percent slope)</i>	
3	226
4	480
5	834
6	1,280
7	1,840
8	
10	
<i>1/8 unit vertical 12 units horizontal (1-percent slope)</i>	
3	320
4	681
5	1,172
6	1,815
7	2,600
8	3,740
10	6,800
<i>1/4 unit vertical in 12 units horizontal (2-percent slope)</i>	
3	454
4	960
5	1,668
6	2,560
7	3,860
8	5,310
10	9,600
<i>1/2 unit vertical in 12 units horizontal (4-percent)</i>	
3	640
4	1,360
5	2,360
6	3,695
7	5,200
8	7,460
10	13,330

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

SECTION PC 1107 SECONDARY (EMERGENCY) ROOF DRAINS

1107.1 Secondary drainage required. Secondary (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. The inlet elevation of secondary (overflow) drains and the invert elevation of overflow scuppers should be not less than 2 inches (51 mm) or more than 4 inches (102 mm) above the low point of the (adjacent to) roof surface unless a safer water depth loading, including the required hydraulic head to maintain required flow rate out of the overflow drainage system that has been determined by the structural design.

1107.2 Primary and secondary storm systems. Where practical secondary roof drain systems shall have the end point of discharge separate from the primary system. Discharge shall be above grade, in a location which would normally be observed by the building occupants or maintenance personnel. Where separate systems are impractical and to prevent water from flowing over sidewalk or pedestrian walkways, secondary drainage system may tie into the primary drainage system in the vertical conductors.

1107.3 Sizing of secondary drains. Secondary (emergency) roof drain systems shall be sized in accordance with Section PC 1106 based on the rainfall rate of 3 inches (76 mm) per hour. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). Where secondary drainage systems tie into primary drainage systems, the combined primary and secondary system shall be sized based on their combined rainfall rate of 6 inches (152 mm) per hour.

SECTION PC 1108 COMBINED SANITARY AND STORM SYSTEM

1108.1 Size of combined drains and sewers. The size of a combination sanitary and storm drain or sewer shall be computed in accordance with the method in Section 1106.3. The fixture units shall be converted into an equivalent projected roof or paved area. Where the total fixture load on the combined drain is less than or equal to 256 fixture units, the equivalent drainage area in horizontal projection shall be taken as 1333 square feet (124m²). Where the total fixture load exceeds 256 fixture units, each additional fixture unit shall be considered the equivalent of 5.2 square feet (.48m²) of drainage area. These values are based on a rainfall rate of 3 inch (75 mm) per hour.

SECTION PC 1109 VALUES FOR CONTINUOUS FLOW

1109.1 Equivalent roof area. Where there is a continuous or semicontinuous discharge into the building storm drain or building storm sewer, such as from a pump, ejector, air conditioning plant or similar device, each gallon per minute of such discharge shall be computed as being equivalent to 32 square feet (2.97 m²) of roof area,

based on a rainfall rate of 3 inches (75 mm) per hour.

**SECTION PC 1110
CONTROLLED FLOW ROOF DRAIN SYSTEMS**

1110.1 General. *The roof of a structure shall be designed for the storage of water where the storm drainage system is engineered for controlled flow. The controlled flow roof drain system shall be an engineered system in accordance with this section and Section 28-105. The controlled flow system shall be designed based on the design rainfall rate in accordance with Section 1106.1.*

1110.2 Control devices. *The control devices shall be installed so that the rate of discharge of water per minute shall not exceed the values for continuous flow as indicated in Section 1109.1.*

1110.3 Installation. *Runoff control shall be by control devices. Control devices shall be protected by strainers.*

1110.4 Minimum number of roof drains. *Not less than two roof drains shall be installed in roof areas 10,000 square feet (929 m²) or less and not less than four roof drains shall be installed in roofs over 10,000 square feet (929 m²) in area.*

**SECTION PC 1111
SUBSOIL DRAINS**

1111.1 Subsoil drains. *Subsoil drains shall be open-jointed, horizontally split or perforated pipe conforming to one of the standards listed in Table 1102.5. Such drains shall not be less than 4 inches (102 mm) in diameter. Where the building is subject to backwater, the subsoil drain shall be protected by an accessibly located backwater valve. Where subsoil drainage is discharged into a public sewer, the sub-soil drains shall discharge into a readily accessible silt and sand interceptor before being connected into the gravity drainage or sump system. Subsoil drainage shall discharge to a trapped area drain, sump, dry well or approved location above ground. The subsoil sump shall not be required to have either a gas-tight cover or a vent. The sump and pumping system shall comply with Section 1113.1.*

**SECTION 1112
BUILDING SUBDRAINS**

1112.1 Building subdrains. *Building subdrains located below the public sewer level shall discharge into a sump or receiving tank, the contents of which shall be automatically lifted and discharged into the drainage system as required for building sumps. The sump and pumping equipment shall comply with Section 1113.1.*

**SECTION PC 1113
SUMPS AND PUMPING SYSTEMS**

1113.1 Pumping system. *The sump pump, pit and discharge piping shall conform to Sections 1113.1.1 through 1113.1.4.*

1113.1.1 Pump capacity and head. *The sump pump shall be of a capacity and head appropriate to anticipated use requirements.*

1113.1.2 Sump pit. *The sump pit shall not be less than 18 inches (457 mm) in diameter and 24 inches (610 mm) deep, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, steel, plastic, cast-iron, concrete or other approved material, with a removable cover adequate to support anticipated loads in the area of use. The pit floor shall be solid and provide permanent support for the pump.*

1113.1.3 Electrical. *Electrical service outlets, when required, shall meet the requirements of the New York city electrical code.*

1113.1.4 Piping. *Discharge piping shall meet the requirements of Section 1102.2, 1102.3 or 1102.4 and shall include a gate valve and a full flow check valve. Pipe and fittings shall be the same size as, or larger than, pump discharge tapping.*

Exception: *In one- and two-family dwellings, only a check valve shall be required, located on the discharge piping from the pump or ejector.*

CHAPTER 12

SPECIAL PIPING AND STORAGE SYSTEMS

SECTION PC 1201

GENERAL

1201.1 Scope. *The provisions of this chapter shall govern the design and installation of piping and storage systems for nonflammable medical gas systems and nonmedical oxygen systems. All maintenance and operations of such systems shall be in accordance with the New York city fire code.*

SECTION PC 1202

MEDICAL GASES

1202.1 Nonflammable medical gases. *Nonflammable medical gas systems, inhalation anesthetic systems and vacuum piping systems shall be designed and installed in accordance with NFPA 99C.*

Exceptions:

- 1. This section shall not apply to portable systems or cylinder storage.*
- 2. Vacuum system exhaust shall comply with the New York city mechanical code.*

SECTION PC 1203

OXYGEN SYSTEMS

1203.1 Design and installation. *Nonmedical oxygen systems shall be designed and installed in accordance with NFPA 50 and NFPA 51.*

CHAPTER 13

REFERENCED STANDARDS

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Section 102.8.

ANSI		American National Standards Institute 25 West 43 rd Street, Fourth Floor New York, NY 10036
Standard Reference Number	Title	Referenced in code section number
Z4.3 – 95	Minimum requirements for Nonsewered Waste-Disposal Systems	311.1
Z21.22 – 90	Relief Valves for Hot Water Supply Systems	504.2, 504.4, 504.5
Z124.1 – 95	Plastic Bathtub Units	407.1
Z124.2 – 95	Plastic Shower Receptors and Shower Stalls	417.1
Z124.3 – 95	Plastic Lavatories	416.1, 416.2
Z124.4 – 96	Plastic Water Closet Bowls and Tanks	420.1
Z124.6 – 97	Plastic Sinks	415.1, 418.1
ARI		Air-Conditioning & Refrigeration Institute 4100 North Fairfax Drive, Suite 200 Arlington, VA 22203
Standard Reference Number	Title	Referenced in code section number
1010 – 94	Self-Contained, Mechanically-Refrigerated Drinking-Water Coolers	410.1
ASME		American Society of Mechanical Engineers Three Park Avenue New York, NY 10016-5990
Standard Reference Number	Title	Referenced in code section number
A112.1.2 – 1991(R1998)	Air Gaps in Plumbing Systems	Table 608.1, 608.13.1
A112.1.3 – 2000	Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances	608.13.1, Table 608.1
A112.3.1 – 1993	Performance Standard and Installation Procedures for Stainless Steel Drainage Systems or Sanitary, Storm and Chemical Applications, Above and Below Ground	412.1, Table 702.1, Table 702.2, Table 702.3, Table 702.4, 708.2, Table 1102.4, Table 1102.5, 1102.6, Table 1102.7
A112.3.4 – 2000		
A112.4.1 – 1993 (R1998)	Macerating Toilet Systems and Related Components	712.4.1
A112.4.3 – 1999	Water Heater Relief Valve Drain Tubes	504.6.2
A112.6.1M – 1997	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	405.4
A112.6.2 – 2000	Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use	405.4.3
A112.6.3 – 2001	Framing-Affixed Supports for Off-the-Floor Water Closets with Concealed Tanks	405.4.3
A112.6.7 – 2001	Floor and Trench Drains	412.1
A112.14.1 – 1975(R1998)	Enameled and Epoxy-coated Cast-iron and PVC plastic Sanitary Floor Sinks	427.1
A112.14.3 – 2000	Backwater-Valves	715.2
A112.14.4 – 2001	Grease Interceptors	1003.3.4
A112.18.1 – 2000	Grease Removal Devices	1003.3.4
A112.18.3M – 1996	Plumbing Fixture Fittings	424.1
A112.18.7 – 1999	Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings	424.4
A112.19.1M – 1994(R1999)	Deck mounted Bath/Shower transfer Valves with Integral Backflow Protection	424.6
A112.19.2M – 1998	Enameled Cast Iron Plumbing Fixtures	407.1, 410.1, 415.1, 416.1, 418.1
A112.19.3M – 1987(R1996)	Vitreous China Plumbing Fixtures	401.2, 405.9, 408.1, 410.1, 416.1, 418.1, 419.1, 420.1
A112.19.4M – 1994(R1999)	Stainless Steel Plumbing Fixtures (Designed for Residential Use)	405.9, 415.1, 416.1, 418.1
A112.19.5 – 1999	Porcelain Enameled Formed Steel Plumbing Fixtures	407.1, 416.1, 418.1
A112.19.6 – 1995	Trim for Water-Closet Bowls, Tanks, and Urinals	425.4
A112.19.7M – 1995	Hydraulic Performance Requirements for Water Closets and Urinals	419.1, 420.1
	Whirlpool Bathtub Appliances	421.1
A112.19.8M – 1987(R1996)	Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances	421.4
A112.19.9M – 1998	Non-Vitreous Ceramic Plumbing Fixtures	407.1, 408.1, 410.1, 415.1, 416.1, 417.1, 418.1, 420.1
A112.19.12 – 2000	Wall Mounted and Pedestal Mounted, Adjustable and Pivoting Lavatory and Sink Carrier Systems	416.4, 418.3
A112.19.13 – 2001	Electrohydraulic Water Closets	420.1
A112.19.15 – 2001	Bathtub/Whirlpool Bathtubs with Pressure Sealed Doors	407.4, 421.5
A112.19.21.2M – 1983	Roof Drains	1102.6
A112.36.2M – 1991(R1998)	Cleanouts	708.2
B1.20.1 – 1983(R1999)	Pipe Threads, General Purpose (inch)	605.12.3, 605.14.4, 705.2.3, 705.4.3, 705.9.4, 705.12.1, 705.14.3
B16.3 – 1999	Malleable Iron Threaded Fittings Classes 150 and 300	Table 702.4, Table 1102.7
B16.4 – 1998	Gray Iron Threaded Fittings Classes 125 and 250	Table 605.5, Table 702.4, Table 1102.7
B16.9 – 1993	Factory-Made Wrought Steel Butt-welding Fittings	Table 605.5, Table 1102.7
B16.11 – 1996	Forged Fittings, Socket-Welding and Threaded	Table 605.5, Table 1102.7
B16.12 – 1998	Cast-Iron Threaded Drainage Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.15 – 1985(R1994)	Cast Bronze Threaded Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.18 – 1984(R1994)	Cast Copper Alloy Solder Joint Pressure Fittings	Table 605.5, Table 702.4
B16.22 – 1995	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings	Table 605.5, Table 702.4
B16.23 – 1992	Cast Copper Alloy Solder Joint Drainage Fittings DWV	Table 605.5, Table 702.4
B16.26 – 1988	Cast Copper Alloy Fittings for Flared Copper Tubes	Table 605.5, Table 702.4
B16.28 – 1994	Wrought Steel Butt-welding Short Radius Elbows and Returns	Table 605.5, Table 1102.7
B16.29 – 1994	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings – DWV	Table 605.5, Table 702.4
ASSE		American Society of Sanitary Engineering 901 Canterbury Road, Suite A Westlake, OH 44145
Standard Reference Number	Title	Referenced in code section number
1001 – 90	Performance Requirements for Pipe Applied Atmospheric Type Vacuum Breakers	425.2, Table 608.1, 608.13.6, 608.16.4.1
1002 – 99	Performance Requirements for Water Closet Flush Tank Ball Cocks	425.3.1, Table 608.1
1003 – 95	Performance Requirements for Water Pressure Reducing Valves	604.8
1004 – 90	Performance Requirements for Commercial Dishwashing Machines	409.1
1005 – 99	Performance Requirements for Water Heater Drain Valves	501.3
1006 – 89	Performance Requirements for Residential Use (Household) Dishwashers	409.1

1007 – 92	Performance Requirements for Home Laundry Equipment	406.1, 406.2
1008 – 89	Performance Requirements for Household Food Waste Disposer Units	413.1
1010 – 98	Performance Requirements for Water Hammer Arresters	604.9
1011 – 95	Performance Requirements for Hose Connection Vacuum Breakers	Table 608.1, 608.13.6
1012 – 95	Performance Requirements for Backflow Preventers with Intermediate Atmospheric Vent	Table 608.1, 608.13.3, 608.16.2
1013 – 99	Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers	Table 608.1, 608.13.2, 608.16.2
1014 – 90	Performance Requirements for Handheld Showers	424.2
1015 – 99	Performance Requirements for Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies	Table 608.1, 608.13.7
1016 – 96	Performance Requirements for Individual Thermostatic, Pressure Balancing and Combination Control Valves for Bathing Facilities	424.3, 607.4, 613.1
1017 – 99	Performance Requirements for Temperature Actuated Mixing Valves for Hot Water Distribution Systems	424.3, 501.2, 613.1
1018 – 86	Performance Requirements for Trap Seal Primer Valves; Water Supply Fed	1002.4
1019 – 97	Performance Requirements for Wall Hydrants, Freezeless, Automatic Draining, Anti-Backflow Types	Table 608.1, 608.13.6
1020 – 98	Performance Requirements for Pressure Vacuum Breaker Assembly	Table 608.1, 608.13.5
1022 – 98	Performance Requirements for Backflow Preventer for Carbonated Beverage Machines	Table 608.1, 608.16.1
1024 – 98	Performance Requirements for Dual Check Valve Type Backflow Preventers (for Residential Supply Service or Individual Outlets)	605.3.1, 608.1
1035 – 95	Performance Requirements for Laboratory Faucet Backflow Preventers	Table 608.1, 608.13.6
1037 – 90	Performance Requirements for Pressurized Flushing Devices for Plumbing Fixtures	425.2
1044 – 86	Performance Requirements for Trap Seal Primer Valves; Drainage Type	1002.4
1047 – 99	Performance Requirements for Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies	Table 608.1, 608.13.2
1048 – 99	Performance Requirements for Double Check Detector Fire Protection Backflow Prevention Assemblies	Table 608.1, 608.13.7
1052 – 94	Performance Requirements for Hose Connection Backflow Preventers	Table 608.1, 608.13.6
1055 – 98	Performance Requirements for Backflow Devices for Chemical Dispensing Systems	608.13.9
1056 – 95	Performance Requirements for Back Siphonage Vacuum Breaker Table	608.1, 608.13.5, 608.13.8
1060 – 96	Performance Requirements for Outdoor Enclosures for Backflow Prevention Assemblies	608.14.1
1062 – 97	Performance Requirements for Temperature Actuated, Flow Reduction Valves to Individual Fixture Fittings	424.5
1066 – 97	Performance Requirements for Individual Pressure Balancing Valves for Individual Fixture Fittings	604.11
5013 – 98	Performance Requirements for Testing Reduced Pressure Principle Backflow Preventers (RP) and Reduced Pressure Fire Protection Principle Backflow Preventers(RFP)	312.9.2
5015 – 98	Performance Requirements for Testing Double Check Backflow Prevention Assemblies (DC) and Double Check Fire Protection Prevention Assemblies (DCF)	312.9.2
5020 – 98	Performance Requirements for Testing Pressure Vacuum Breaker Assembly (PVBA)	312.9.2
5047 – 98	Performance Requirements for Testing Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies (RPDF)	312.9.2
5048 – 98	Performance Requirements for Testing Double Check Detector Fire Protection Backflow Prevention Assemblies (DCDF)	312.9.2
5052 – 98	Performance Requirements for Testing Hose Connection Backflow Preventers	312.9.2
5056 – 98	Performance Requirements for Testing Spill Resistant Vacuum Breaker	312.9.2

ASTM ASTM International
 100 Barr Harbor Drive
 West Conshohocken, PA 19428-2959

Standard Reference Number	Title	Referenced in code section number
A 53—01	Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless	Table 702.1
A 74—98	Specification for Cast Iron Soil Pipe and Fittings	Table 702.1, Table 702.2, Table 702.3, Table 702.4, 708.2, 708.7, Table 1102.4, Table 1102.5, Table 1102.7
A312—01	Specification for Seamless and Welded Austenitic Stainless Steel Pipes	Table 605.4, Table 605.5
A 778—01	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	Table 605.4, Table 605.5
A 888—98e1	Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Application	Table 702.1, Table 702.2, Table 702.3, Table 702.4, 708.7, Table 1102.4, Table 1102.5, Table 1102.7
B 32—00	Specification for Solder Metal	605.14.3, 605.15.4, 705.9.3, 705.10.3
B 42—98	Specification for Seamless Copper Pipe, Standard Sizes	Table 605.3, Table 605.4, Table 702.1
B 43—98	Specification for Seamless Red Brass Pipe, Standard Sizes	Table 605.3, Table 605.4, Table 702.1
B 75—99	Specification for Seamless Copper Tube	Table 605.3, Table 605.4, Table 702.1, Table 702.2, Table 702.3
B 88—99e1	Specification for Seamless Copper Water Tube	Table 605.3, Table 605.4, Table 702.1, Table 702.2, Table 702.3
B 152/B 152M—00	Specification for Copper Sheet, Strip Plate and Rolled Bar	402.3, 425.3.3, 902.2
B 251—97	Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube	Table 605.3, Table 605.4, Table 702.1, Table 702.2, Table 702.3
B 302—00	Specification for Threadless Copper Pipe, Standard Sizes	Table 605.3, Table 605.4, Table 702.1
B 306—99	Specification for Copper Drainage Tube (DWV)	Table 702.1, Table 702.2
B 447—00	Specification for Welded Copper Tube	Table 605.3, Table 605.4
B 687—99	Specification for Brass, Copper, and Chromium-Plated Pipe Nipples	Table 605.8
B 813—00e01	Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	605.14.3, 605.15.4, 705.9.3, 705.10.3
B 828—00	Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	605.14.3, 605.15.4, 705.9.3, 705.10.3
C 4—00	Specification for Clay Drain Tile and Perforated Clay Drain Tile	Table 702.3, Table 1102.4, Table 1102.5
C 14—99	Specification for Concrete Sewer, Storm Drain, and Culvert Pipe	Table 702.3, Table 1102.4
C 76—00	Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	Table 702.3, Table 1102.4
C 425—01	Specification for Compression Joints for Vitrified Clay Pipe and Fittings	705.15, 705.16
C 443—01	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	705.6, 705.16
C 564—97	Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings	705.5.2, 705.5.3, 705.16
C 654—03	Standard Specification for Porous Concrete Pipe	Table 1102.5

C 700—00	Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated	Table 702.3, Table 1102.4,
C 1053—00	Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications	Table 702.1, Table 702.4
C 1173—97	Specification for Flexible Transition Couplings for Underground Piping System	705.2.1, 705.6, 705.14.1, 705.15, 705.16
C 1277—97	Specification for Shielded Coupling Joining Hubless Cast Iron Soil Pipe and Fittings	705.5.3
C 1440—99	Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste, and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems	705.16
C 1449/C1449M-05	Standard Specification for Non-Asbestos Fiber-Cement Nonpressure Sewer Pipe	Table 1102.4
C 1460—00	Specification for Shielded Transition Couplings for Use with Dissimilar DWV Pipe and Fittings Above Ground	705.16
C 1461—00	Specification for Mechanical Couplings Using Thermoplastic Elastomeric (TPE) Gaskets for Joining Drain, Waste, and Vent (DWV) Sewer, Sanitary and Storm Plumbing Systems for Above and Below Ground Use	705.16
D 1869—95(2000)	Specification for Rubber Rings for Asbestos-Cement Pipe	605.23, 705.3, 705.16
D 2235—01	Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings	705.2.2
D 2464—99	Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Table 1102.7
D 2466—01	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	Table 1102.7
D 2467—99	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Table 1102.7
D 2564—96a	Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems	705.14.2
D 2609—00	Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe	Table 1102.7
D 2657—97	Standard Practice for Heat Fusion-Joining of Polyolefin Pipe and Fitting	Table 702.1, Table 702.4
D 2661—01	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings	Table 702.1, Table 702.4, 705.2.2
D 2665—00	Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Table 702.1, Table 702.4, Table 1102.4, Table 1102.7
D 2729—96a	Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Table 1102.5
D 2855—96	Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings	705.14.2
D 3034—00	Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Table 1102.4
D 3212—96a	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals	705.2.1, 705.14.1
D 3311—94	Specification for Drain, Waste and Vent (DWV) Plastic Fittings Patterns	Table 702.1, Table 702.4
D 3350—02a	Specification for High Density Polyethylene pipe (HDPE)	Table 1102.4, Table 1102.7
F 405—97 F	Specification for Corrugated Polyethylene (PE) Tubing and Fittings	Table 1102.5
F 409 - 99a	Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings	424.1.2, Table 1102.7
F 437-99	Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Table 1102.7
F 438-01	Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	Table 1102.7
F 439-01	Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Table 1102.7
F 477—99	Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe	605.22, 705.16
F 628—01	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core	Table 702.1, 705.2.2
F 656—96a	Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	705.14.2
F 891 - 00	Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core	Table 1102.4, Table 1102.5
F1866 - 98	Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	Table 702.1, Table 702.4, Table 1102.7

AWS		American Welding Society 550 N.W. LeJeune Road Miami, FL 33126
Standard Reference Number	Title	Referenced in code section number
A5.8 – 92	Specifications for Filler Metals for Brazing and Braze Welding	605.12.1, 605.14.1, 605.15.1, 705.4.1, 705.9.1, 705.10.1
AWWA		American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
Standard Reference Number	Title	Referenced in code section number
C104—95	Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water	605.3, 605.5
C110—98	Standard for Ductile-Iron and Gray-Iron Fittings, 3 Inches through 48 Inches, for Water	Table 605.5, Table 702.4, Table 1102.7
C111—00	Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	
C115—99	Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges	Table 605.3
C151—02	Standard for Ductile-Iron Pipe, Centrifugally Cast for Water	Table 605.3, Table 702.1, Table 702.2, Table 702.3, Table 1102.4
C153—00	Standard for Ductile-Iron Compact Fittings for Water Service	Table 605.5
C510—00	Double Check Valve Backflow Prevention Assembly	Table 608.1, 608.13.7
C511—00	Reduced-Pressure Principle Backflow Prevention Assembly	
C651—99	Disinfecting Water Mains	
C652—92	Disinfection of Water-Storage Facilities	610.1
CISPI		Cast Iron Soil Pipe Institute 5959 Shallowford Road, Suite 419 Chattanooga, TN 37421
Standard Reference Number	Title	Referenced in code section number
301 – 00	Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications	Table 702.1, Table 702.2, Table 702.3, Table 702.4, 708.7, Table 1102.4, Table 1102.5, Table 1102.7
310 – 97	Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications	705.5.3
CSA		Canadian Standards Association 178 Rexdale Blvd. Rexdale (Toronto), Ontario, Canada M9W 1R3
Standard Reference Number	Title	Referenced in code section number
B45.1 – 99	Ceramic Plumbing Fixtures	408.1, 416.1, 418.1, 419.1
B45.2 – 99	Enameled Cast-Iron Plumbing Fixtures	407.1, 415.1, 416.1, 418
B45.3 – 99	Porcelain Enameled Steel Plumbing Fixtures	407.1, 416.1, 418.1
B45.4 – 99	Stainless-Steel Plumbing Fixtures	415.1, 416.1, 418.1, 420.1
B45.5 – 99	Plastic Plumbing Fixtures	407.1, 416.2, 417.1, 419.1, 420.1, 421.1
B45.9 – 99		
B45.10 – 01		
B64.7 – 97		
B79 – 94(2000)	Macerating Systems and Related Components	712.4.1
B125 – 98		
B137.2 – 99		
B137.3 – 99	Hydromassage Bathtubs	421.1
B181 – 99		
B181.2 – 99		
B182.1 – 99	Vacuum Breakers, Laboratory Faucet Type (LFVB)	Table 608.1, 608.13.6 Floor, 412.1
B182.2 – 99	Area and Shower Drains, and Cleanouts for Residential Construction	
CAN/CSA A257.1M – 92		
CAN/CSA A257.2M – 92	Plumbing Fittings	424.1, 424.2, 424.3, 425.3.1, 425.5, Table 608.1
CAN/CSA A257.3M – 92	PVC Injection-Moulded Gasketed Fittings for Pressure Applications	Table 1102.7
CAN/CSA B64.1.1 – 01		
CAN/CSA B64.2 – 01		
CAN/CSA B64.2.2 – 01		
CAN/CSA B64.3 – 01	Rigid Poly (Vinyl Chloride) (PVC) Pipe for Pressure	
CAN/CSA B64.4 – 01		
CAN/CSA B64.10 – 01		
CAN/CSA B181.3 – 99	Applications	705.14.2
CAN/CSA B182.4 – 99		
CAN/CSA B602 – 99		
	ABS Drain, Waste, and Vent Pipe and Pipe Fittings	Table 702.1, Table 702.4, 705.2.2, 715.2
	PVC Drain, Waste, and Vent Pipe and Pipe Fittings—with Revisions through December 1993	705.14.2, 715.2
	Plastic Drain and Sewer Pipe and Pipe Fittings	705.14.2

PVC Sewer Pipe and Fittings (PSM Type)	Table 1102.4, Table 1102.5
Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	Table 702.3, Table 1102.4
Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	Table 702.3, Table 1102.4
Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets	705.6, 705.16
Vacuum Breakers, Atmospheric Type (AVB)	425.2, Table 608.1, 608.13.6
Vacuum Breakers, Hose Connection Type (HCVB)	Table 608.1, 608.13.6
Vacuum Breakers, Hose Connection Type (HCVB) with Automatic Draining Feature	Table 608.1, 608.13.6
Backflow Preventers, Dual Check Valve Type with Atmospheric Port (DCAP)	Table 608.1, 608.16.2
Backflow Preventers, Reduced Pressure Principle Type (RP)	Table 608.1, 608.13.2, 608.16.2
Manual for the Selection, Installation, Maintenance and Field Testing of Backflow Prevention Devices	312.9.2
Polyolefin Laboratory Drainage Systems	Table 702.1
Profile PVC Sewer Pipe and Fittings	Table 1102.4, Table 102.5
Mechanical Couplings for Drain, Waste, and Vent Pipe and Sewer Pipe	705.2.1, 705.5.3, 705.6, 705.14.1, 705.15, 705.16

FS Federal Specification
1941 Jefferson Davis Highway, Suite 104
Arlington, VA 22202

Standard Reference Number	Title	Referenced in code section number
TT-P-1536A(1975)	Federal Specification for Plumbing Fixture Setting Compound	405.4

* Standards are available from the Supt. of Documents, U.S. Government Printing Office, Washington, DC 20402-9325.

IAPMO International Association of Plumbing and Mechanical Officials
5001 E. Philadelphia Street
Ontario, CA 91761

Standard Reference Number	Title	Referenced in code section number
PS48 - 92	Material Safety Data Verification for Plumbing Products	605.6
PS74 - 95	Reinforced Water Connectors	605.6

ISEA Industry Safety Equipment Association
1901 N. Moore Street, Suite 808
Arlington, VA 22209

Standard Reference Number	Title	Referenced in code section number
Z358.1 - 98	Emergency eyewash and shower equipment	411.1

NFPA National Fire Protection Association
Batterymarch Park
Quincy, MA 02269

Standard Reference Number	Title	Referenced in code section number
50 - 01	Bulk Oxygen Systems at Consumer Sites	1203.1
51 - 97	Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes	1203.1
99C - 99	Gas and Vacuum Systems	1202.1

NSF National Sanitation Foundation
789 Dixboro Road
Ann Arbor, MI 48105

Standard Reference Number	Title	Referenced in code section number
3-1996	Commercial Spray-Type Dishwashing and Glasswashing Machines	409.1
18-2000	Manual Food and Beverage Dispensing Equipment	426.1
14-1999	Plastic Piping System Components and Related Materials	303.3, 611.3
42-2000	Drinking Water Treatment Units - Aesthetic Effects	611.1, 611.3
44-2000	Residential Cation Exchange Water Softeners	611.1, 611.3
53-2001	Drinking Water Treatment Units - Health Effects	611.1, 611.3
58-2001	Reverse Osmosis Drinking Water Treatment Systems	611.2, 611.3
61-2001	Drinking Water System Components - Health Effects	410.1, 424.1, 605.3, 605.4, 605.5, 611.3
62-1999	Drinking Water Distillation Systems	611.1

NYC/NYS		New York City Codes / New York State Codes/New York City Agencies	
Standard Reference Number	Title	Referenced in code section number	
	New York city building code based on 2003 IBC	201.3, 305.4, 307.1, 307.2, 307.3, 308.2, 309.1, 310.1, 310.3, 403.1, Table 403.1, 404.1, 407.3, 417.6, 502.4, 606.5.2, 1106.5	
	New York city department of environmental protection	302.2, 312.9.2, 603.2.1, 701.2, 701.5, 803.2, 1101.1, 1101.2	
	New York city electrical code based on 2002 NEC	201.3, 502.1, 504.3, 1113.1.3	
	New York city fire code	201.3, 1201.1	
	New York city fuel gas code based on 2003 IFGC	101.2, 201.3, 502.1	
	New York city mechanical code based on 2003 IMC	201.3, 307.6, 310.1, 422.9, 502.1, 612.1, 1202.1	
	New York city residential code based on 2003 IRC	101.2	
	New York state energy conservation construction code	313.1, 607.2, 607.2.1	

PDI		Plumbing and Drainage Institute 45 Bristol Drive, Suite 101 South Easton, MA 02375	
Standard Reference Number	Title	Referenced in code section number	
G 101(1998)	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data	1003.3.4	
WH 201(1992)	Water Hammer Arrestor Standard	604.9	

APPENDIX A
PLUMBING PERMIT FEE SCHEDULE
Reserved

APPENDIX B
RATES OF RAINFALL FOR VARIOUS CITIES
Reserved

APPENDIX C
WATER CONSERVATION SYSTEMS

Note: Section 301.3 of this code requires all plumbing fixtures that receive water or waste to discharge to the sanitary drainage system of the structure. In order to allow for the utilization of a water recycling system, section 301.3 should be revised to read as follows:

301.3 Connections to drainage system. *All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems provided for in Chapter 8.*

Exception: *Lavatories shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved water recycling system.*

PC C101
WATER RECYCLING SYSTEMS

C101.1 General. Water recycling systems shall receive storm water captured from roofs and balconies, condensate reclamation systems, gray water discharge only of lavatories from public restrooms in commercial office buildings, and the treated effluent from an approved black water treatment system as regulated by Department of Health and Mental Hygiene. Recycled water shall be utilized only for flushing water closets and urinals, cooling tower makeup and irrigation systems that are located in the same lot as the water recycling system. Recycled water shall be considered non-potable. Such systems shall comply with sections C101.2 through C101.12.

C101.2 Definitions. The following terms shall have the meanings shown herein.

BLACK WATER. *Waste water discharged from water closets, urinals and any other fixtures discharging animal or vegetable matter in suspension or solution.*

GRAY WATER. *Waste water discharged from lavatories, bathtubs, showers, clothes washers and laundry sinks.*

C101.3 Installation. *All drain, waste and vent piping associated with gray or black water recycling systems shall be installed in full compliance with this code.*

C101.4 Reservoir. *Water captured for recycling purposes shall be collected in an approved reservoir constructed of durable, nonabsorbent and corrosion-resistant materials. The reservoir shall be a closed and gas-tight vessel. Access openings shall be provided to allow inspection and cleaning of the reservoir interior. The holding capacity of the reservoir shall be a minimum of twice the volume of water required to meet the daily flushing requirements of the fixtures supplied with recycled water, but not less than*

50 gallons (189 L).

C101.5 Filtration. All water entering the reservoir shall pass through an approved filter such as a media, sand or diatomaceous earth filter. Filter may be installed in a sidestream arrangement sized to filter the entire volume of the tank at a rate equal to four times the recycled water in a one-hour period.

C101.6 Disinfection. Recycled water shall be disinfected by an approved method that employs ultraviolet or one or more disinfectants such as chlorine, iodine or ozone.

C101.7 Makeup water. Potable water shall be supplied as a source of makeup water for the recycled water system. The potable water supply shall be protected against backflow in accordance with Section PC 608. There shall be a full-open valve on the makeup water supply line to the reservoir.

C101.8 Overflow. The collection reservoir shall be equipped with an overflow pipe of the same diameter as the influent pipe for the captured water. The overflow shall be directly connected to the building house drainage system.

C101.9 Drain. A drain shall be located at the lowest point of the collection reservoir and shall be directly connected to the sanitary drainage system. The drain shall be a minimum of 4 inch (102 mm) diameter and shall be provided with a full-open valve.

C101.10 Vent required. The reservoir shall be provided with a vent sized in accordance with Chapter 9 based on the size of the reservoir influent pipe.

C101.11 Coloring. The recycled water shall be dyed blue or green with a food grade vegetable dye before such water is supplied to the fixtures.

C101.12 Identification. All recycled water distribution piping and reservoirs shall be identified as containing nonpotable water. Piping identification shall be in accordance with Section 608.8.

PC C102 WATERLESS URINALS

C102.1 Waterless urinals. Approved waterless urinals may be utilized only as part of an approved building water conservation plan.

APPENDIX D DEGREE DAY AND DESIGN TEMPERATURES RESERVED

APPENDIX E SIZING OF WATER PIPING SYSTEM

SECTION PC E101 GENERAL

E101.1 Scope.

E101.1.1 This appendix outlines two procedures for sizing a water piping system (see Section E103.3). The design procedures are based on the minimum static pressure available from the supply source, the head charges in the system caused by friction and elevation, and the rates of flow necessary for operation of various fixtures.

SECTION PC E102 INFORMATION REQUIRED

E102.1 Preliminary. Obtain the necessary information regarding the minimum daily

static service pressure in the area where the building is to be located. If the building supply is to be metered, obtain information regarding friction loss relative to the rate of flow for meters in the range of sizes likely to be used. Friction loss data can be obtained from most manufacturers of water meters.

E102.2 Demand load.

E102.2.1 Estimate the supply demand of the building main and the principal branches and risers of the system by totaling the corresponding demand from the applicable part of Table E 103.3(3).

E102.2.2 Estimate continuous supply demands in gallons per minute (L/m) for lawn sprinklers, air conditioners, etc., and add the sum to the total demand for fixtures. The result is the estimated supply demand for the building supply.

SECTION PC E103
SELECTION OF PIPE SIZE

E103.1 General. Decide from Table 604.3 what is the desirable minimum residual pressure that should be maintained at the highest fixture in the supply system. If the highest group of fixtures contains flush valves, the pressure for the group should not be less than 15 psi (103.4 kPa) flowing. For flush tank supplies, the available pressure should not be less than 8 psi (55.2 kPa) flowing, except blowout action fixtures must not be less than 25 psi (172.4 kPa) flowing.

E103.2 Pipe sizing.

E103.2.1 Pipe sizes can be selected according to the following procedure or by other design methods conforming to acceptable engineering practice and approved by the department. The sizes selected must not be less than the minimum required by this code.

E103.2.2 Water pipe sizing procedures are based on a system of pressure requirements and losses, the sum of which must not exceed the minimum pressure available at the supply source. These pressures are as follows:

1. Pressure required at fixture to produce required flow. See Section 604.3 and Section 604.5.
2. Static pressure loss or gain (due to head) is computed at 0.433 psi per foot (9.8 kPa/m) of elevation change.

Example: Assume that the highest fixture supply outlet is 20 feet (6096 mm) above or below the supply source. This produces a static pressure differential of 8.66 psi (59.8 kPa) loss.

3. Loss through water meter. The friction or pressure loss can be obtained from meter manufacturers.
4. Loss through taps in water main. (See Table E103.3.4(4))
5. Losses through special devices such as filters, softeners, backflow prevention devices and pressure regulators. These values must be obtained from the manufacturers.
6. Loss through valves and fittings. Losses for these items are calculated by converting to equivalent length of piping and adding to the total pipe length. (See Tables E103.3(5) and E103.3(6))
7. Loss due to pipe friction can be calculated when the pipe size, the pipe length and the flow through the pipe are known. With these three items, the friction loss can be determined using Figures E103.3(2) through E103.3(7). For piping flow charts not included, use manufacturers' tables and velocity recommendations.

Note: For the purposes of all examples, the following metric conversions are applicable:

1 cubic foot per minute = 0.4719 L/s

1 square foot = 0.0929 m²

1 degree = 0.0175 rad

1 pound per square inch = 6.895 kPa

1 inch = 25.4 mm

1 foot = 304.8 mm

1 gallon per minute = 3.785 L/m

E103.3 Segmented loss method. The size of water service mains, branch mains and risers by the segmented loss method, must be determined according to water supply demand gpm (L/m), available water pressure psi (kPa) and friction loss caused by the water meter and developed length of pipe feet (m), including equivalent length of fittings. This design procedure is based on the following parameters:

Calculate the friction loss through each length of the pipe.

Based on a system of pressure losses, the sum of which must not exceed the minimum pressure available at the street main or other source of supply.

Pipe sizing shall be based on (1) estimated peak demand, (2) total pressure losses caused by difference in elevation, equipment, developed length and pressure required at most remote fixture, (3) loss through taps in water main, (4) losses through fittings, filters, backflow prevention devices, valves and pipe friction.

Because of the variable conditions encountered in hydraulic design, it is impractical to specify definite and detailed rules for sizing of the water piping system. Current sizing methods do not address the differences in the probability of use and flow characteristics of fixtures between types of occupancies.

Creating an exact model of predicting the demand for a building is impossible and final studies assessing the impact of water conservation on demand are not yet complete. The following steps are necessary for the segmented loss method.

1. **Preliminary.** Obtain the necessary information regarding the minimum daily static service pressure in the area where the building is to be located. If the building supply is to be metered, obtain information regarding friction loss relative to the rate of flow for meters in the range of sizes to be used. Friction loss data can be obtained from manufacturers of water meters. It is essential that enough pressure be available to overcome all system losses caused by friction and elevation so that plumbing fixtures operate properly. Section 604.6 requires the water distribution system to be designed for the minimum pressure available taking into consideration pressure fluctuations. The lowest pressure must be selected to guarantee a continuous, adequate supply of water. The lowest pressure in the public main usually occurs in the summer because of lawn sprinkling and supplying water for air-conditioning cooling towers. Future demands placed on the public main as a result of large growth or expansion should also be considered. The available pressure will decrease as additional loads are placed on the public system.
2. **Demand load.** Estimate the supply demand of the building main and the principal branches and risers of the system by totaling the corresponding demand from the applicable part of Table E103.3(3). When estimating peak demand sizing methods typically use water

supply fixture units (see Table E103.3(2)). This numerical factor measures the load-producing effect of a single plumbing fixture of a given kind. The use of such fixture units can be applied to a single basic probability curve (or table), found in the various sizing methods (Table E103.3(3)). The fixture units are then converted into gallons per minute (L/m) flow rate for estimating demand.

- 2.1. Estimate continuous supply demand in gallons per minute (L/m) for lawn sprinklers, air conditioners, etc., and add the sum to the total demand for fixtures. The result is the estimated supply demand for the building supply. Fixture units cannot be applied to constant use fixtures such as hose bibbs, lawn sprinklers and air conditioners. These types of fixtures must be assigned the gallon per minute (L/m) value.
3. **Selection of pipe size.** This water pipe sizing procedure is based on a system of pressure requirements and losses, the sum of which must not exceed the minimum pressure available at the supply source. These pressures are as follows:
 - 3.1. Pressure required at the fixture to produce required flow. See Section 604.3 and Section 604.5.
 - 3.2. Static pressure loss or gain (due to head) is computed at 0.433 psi per foot (9.8 kPa/m) of elevation change.
 - 3.3. Loss through a water meter. The friction or pressure loss can be obtained from the manufacturer.
 - 3.4. Loss through taps in water main (see Table E103.3(4)).
 - 3.5. Losses through special devices such as filters, softeners, backflow prevention devices and pressure regulators. These values must be obtained from the manufacturers.
 - 3.6. Loss through valves and fittings. Losses for these items are calculated by converting to equivalent length of piping and adding to the total pipe length. (see Tables E103.3(5) and E103.3(6)).
 - 3.7. Loss due to pipe friction can be calculated when the pipe size, the pipe length and the flow through the pipe are known. With these three items, the friction loss can be determined using Figures E103.3(2) through E103.3(7). When using charts, use pipe inside diameters. For piping flow charts not included, use manufacturers' tables and velocity recommendations. Before attempting to size any water supply system, it is necessary to gather preliminary information which includes available pressure, piping material, select design velocity, elevation differences and developed length to most remote fixture. The water supply system is divided into sections at major changes in elevation or where branches lead to fixture groups. The peak demand must be determined in each part of the hot and cold water supply system which includes the corresponding water supply fixture unit and conversion to gallons per minute (L/m) flow rate to be expected through each section. Sizing methods require the determination of the "most hydraulically remote" fixture to compute the pressure loss caused by pipe and fittings.

The hydraulically remote fixture represents the most downstream fixture along the circuit of piping requiring the most available pressure to operate properly. Consideration must be given to all pressure demands and losses, such as friction caused by pipe, fittings and equipment, elevation and the residual pressure required by Table 604.3. The two most common and frequent complaints about the water supply system operation are lack of adequate pressure and noise.

Problem: What size Type L copper water pipe, service and distribution will be required to serve a two-story factory building having on each floor, back-to-back, two toilet rooms each equipped with hot and cold water? The highest fixture is 21 feet (6401 mm) above the street main, which is tapped with a 2-inch (51 mm) corporation cock at which point the minimum pressure is 55 psi (379.2 kPa). In the building basement, a 2-inch (51 mm) meter with a maximum pressure drop of 11 psi (75.8 kPa) and 3-inch (76 mm) reduced pressure principle backflow preventer with a maximum pressure drop of 9 psi (621 kPa) are to be installed. The system is shown by Figure E103.3(1). To be determined are the pipe sizes for the service main and the cold and hot water distribution pipes.

Solution: *A tabular arrangement such as shown in Table E103.3(1) should first be constructed. The steps to be followed are indicated by the tabular arrangement itself as they are in sequence, columns 1 through 10 and lines A through L.*

Step 1

Columns 1 and 2: *Divide the system into sections breaking at major changes in elevation or where branches lead to fixture groups. After point B (see Figure E103.3(1)), separate consideration will be given to the hot and cold water piping. Enter the sections to be considered in the service and cold water piping in Column 1 of the tabular arrangement. Column 1 of Table E103.3(1) provides a line-by-line recommended tabular arrangement for use in solving pipe sizing.*

The objective in designing the water supply system is to ensure an adequate water supply and pressure to all fixtures and equipment. Column 2 provides the pounds per square inch (psi) to be considered separately from the minimum pressure available at the main. Losses to take into consideration are the following: the differences in elevations between the water supply source and the highest water supply outlet, meter pressure losses, the tap in main loss, special fixture devices such as water softeners and prevention devices and the pressure required at the most remote fixture outlet. The difference in elevation can result in an increase or decrease in available pressure at the main. Where the water supply outlet is located above the source, this results in a loss in the available pressure and is subtracted from the pressure at the water source. Where the highest water supply outlet is located below the water supply source, there will be an increase in pressure that is added to the available pressure of the water source.

Column 3: According to Table E103.3(3), determine the gpm (L/m) of flow to be expected in each section of the system. These flows range

from 28.6 to 108 gpm. Load values for fixtures must be determined as water supply fixture units and then converted to a gallon-per-minute (gpm) rating to determine peak demand. When calculating peak demands, the water supply fixture units are added and then converted to the gallon-per-minute rating. For continuous flow fixtures such as hose bibbs and lawn sprinkler systems, add the gallon-per-minute demand to the intermittent demand of fixtures. For example, a total of 120 water supply fixture units is converted to a demand of 48 gallons per minute. Two hose bibbs x 5 gpm demand = 10 gpm. Total gpm rating = 48.0 gpm + 10 gpm = 58.0 gpm demand.

Step 2

Line A: Enter the minimum pressure available at the main source of supply in Column 2. This is 55 psi (379.2 kPa). The local water authorities generally keep records of pressures at different times of day and year. The available pressure can also be checked from nearby buildings or from fire department hydrant checks.

Line B: Determine from Section 604.3 the highest pressure required for the fixtures on the system, which is 15 psi (103.4 kPa), to operate a flushometer valve. The most remote fixture outlet is necessary to compute the pressure loss caused by pipe and fittings, and represents the most downstream fixture along the circuit of piping requiring the available pressure to operate properly as indicated by Table 604.3.

Line C: Determine the pressure loss for the meter size given or assumed. The total water flow from the main through the service as determined in Step 1 will serve to aid in the meter selected. There are three common types of water meters; the pressure losses are determined by the American Water Works Association Standards for displacement type, compound type and turbine type. The maximum pressure loss of such devices takes into consideration the meter size, safe operating capacity (gpm) and maximum rates for continuous operations (gpm). Typically, equipment imparts greater pressure losses than piping.

Line D: Select from Table E103.3(4) and enter the pressure loss for the tap size given or assumed. The loss of pressure through taps and tees in pounds per square inch (psi) are based on the total gallon-per-minute flow rate and size of the tap.

Line E: Determine the difference in elevation between the main and source of supply and the highest fixture on the system. Multiply this figure, expressed in feet, by 0.43 psi (2.9 kPa). Enter the resulting psi loss on Line E. The difference in elevation between the water supply source and the highest water supply outlet has a significant impact on the sizing of the water supply system. The difference in elevation usually results in a loss in the available pressure because the water supply outlet is generally located above the water supply source. The loss is caused by the pressure required to lift the water to the outlet. The pressure loss is subtracted from the pressure at the water source. Where the highest water supply outlet is located below the water source, there will be an increase in pressure which is added to the available pressure of the water source.

Lines F, G and H: The pressure losses through filters, backflow prevention devices or other special fixtures must be obtained from the manufacturer or estimated and entered on these lines. Equipment such as backflow prevention devices, check valves, water softeners, instantaneous or tankless water heaters, filters and strainers can impart a much greater pressure loss than the piping. The pressure losses can range from 8 psi to 30 psi.

Step 3

Line I: The sum of the pressure requirements and losses that affect the overall system (Lines B through H) is entered on this line. Summarizing the steps, all of the system losses are subtracted from the minimum water pressure. The remainder is the pressure available for friction, defined as the energy available to push the water through the pipes to each fixture. This force can be used as an average pressure loss, as long as the pressure available for friction is not exceeded. Saving a certain amount for available water supply pressures as an area incurs growth, or because of aging of the pipe or equipment added to the system is recommended.

Step 4

Line J: Subtract Line I from Line A. This gives the pressure that remains available from overcoming friction losses in the system. This figure is a guide to the pipe size that is chosen for each section, incorporating the total friction losses to the most remote outlet (measured length is called developed length).

Exception: When the main is above the highest fixture, the resulting psi must be considered a pressure gain (static head gain) and omitted from the sums of Lines B through H and added to Line J.

The maximum friction head loss that can be tolerated in the system during peak demand is the difference between the static pressure at the highest and most remote outlet at no-flow conditions and the minimum flow pressure required at that outlet. If the losses are within the required limits, then every run of pipe will also be within the required friction head loss. Static pressure loss is the most remote outlet in feet \times 0.433 = loss in psi caused by elevation differences.

Step 5

Column 4: Enter the length of each section from the main to the most remote outlet (at Point E). Divide the water supply system into sections breaking at major changes in elevation or where branches lead to fixture groups.

Step 6

Column 5: When selecting a trial pipe size, the length from the water service or meter to the most remote fixture outlet must be measured to determine the developed length. However, in systems having a flush valve or temperature controlled shower at the top most floors the developed length would be from the water meter to the most remote flush valve on the system. A rule of thumb is that size will become progressively smaller as the system extends farther from the main

source of supply. Trial pipe size may be arrived at by the following formula:

Line J (Pressure available to overcome pipe friction) \times 100/equivalent length of run total developed length to most remote fixture \times percentage factor of 1.5 (note: a percentage factor is used only as an estimate for friction losses imposed for fittings for initial trial pipe size) = psi (average pressure drops per 100 feet of pipe).

For trial pipe size see Figure E 103.3(3) (Type L copper) based on 2.77 psi and a 108 gpm = 2½ inches. To determine the equivalent length of run to the most remote outlet, the developed length is determined and added to the friction losses for fittings and valves. The developed lengths of the designated pipe sections are as follows:

A – B	54 feet
B – C	8 feet
C – D	13 feet
D – E	150 feet

Total developed length = 225 feet

The equivalent length of the friction loss in fittings and valves must be added to the developed length (most remote outlet). Where the size of fittings and valves is not known, the added friction loss should be approximated. A general rule that has been used is to add 50 percent of the developed length to allow for fittings and valves. For example, the equivalent length of run equals the developed length of run (225 ft \times 1.5 = 338 feet). The total equivalent length of run for determining a trial pipe size is 338 feet.

Example: 9.36 (pressure available to overcome pipe friction) \times 100/ 338 (Equivalent length of run = 225 \times 1.5) = 2.77 psi (average pressure drop per 100 feet of pipe).

Step 7

Column 6: Select from Table E103.3(6) the equivalent lengths for the trial pipe size of fittings and valves on each pipe section. Enter the sum for each section in Column 6. (The number of fittings to be used in this example must be an estimate.) The equivalent length of piping is the developed length plus the equivalent lengths of pipe corresponding to friction head losses for fittings and valves. Where the size of fittings and valves is not known, the added friction head losses must be approximated. An estimate for this example is as follows:

COLD WATER PIPE SECTION	FITTINGS / VALVES	PRESSURE LOSS EXPRESSED AS EQUIVALENT LENGTH OF TUBE (FEET)	HOT WATER PIPE SECTION	FITTINGS / VALVES	PRESSURE LOSS EXPRESSED AS EQUIVALENT LENGTH OF TUBE (FEET)
A-B	3 - 2 1/2" Gate valves	3	A-B	3 - 2 1/2" Gate valves	3
	1 - 2 1/2" Side branch tee	12		1 - 2 1/2" Side branch tee	12
B-C	1 - 2 1/2" Straight run tee	0.5	B-C	1 - 2" Straight run tee	7
C-F	1 - 2 1/2" Side branch tee	12	C-F	1 - 2" 90-degree ell	0.5
				1 - 1 1/2" Side branch tee	7
C-D	1 - 2 1/2" 90-degree ell	7	C-D	1 - 1/2" 90 degree ell	4
D-E	1 - 2 1/2" Side branch tee	12	D-E	1 - 1 1/2" Side branch tee	7

Step 8

Column 7: Add the figures from Column 4 and Column 6, and enter in Column 7. Express the sum in hundreds of feet.

Step 9

Column 8: Select from Figure E103.3(3) the friction loss per 100 feet (30 480 mm) of pipe for the gallon-per-minute flow in a section (Column 3) and trial pipe size (Column 5). Maximum friction head loss per 100 feet is determined on the basis of total pressure available for friction head loss and the longest equivalent length of run. The selection is based on the gallon-per-minute demand, the uniform friction head loss, and the maximum design velocity. Where the size indicated by hydraulic table indicates a velocity in excess of the selected velocity, a size must be selected which produces the required velocity.

Step 10

Column 9: Multiply the figures in Columns 7 and 8 for each section and enter in Column 9.

Total friction loss is determined by multiplying the friction loss per 100 feet (30 480 mm) for each pipe section in the total developed length by the pressure loss in fittings expressed as equivalent length in feet. Note: section C-F should be considered in the total pipe friction losses only if greater loss occurs in section C-F than in pipe section D-E. section C-F is not considered in the total developed length. Total friction loss in equivalent length is determined as follows:

PIPE SECTIONS	FRICTION LOSS EQUIVALENT LENGTH (feet)	
	Cold Water	Hot Water
A-B	$0.69 \times 3.2 = 2.21$	$0.69 \times 3.2 = 2.21$
B-C	$0.085 \times 3.1 = 0.26$	$0.16 \times 1.4 = 0.22$
C-D	$0.20 \times 1.9 = 0.38$	$0.17 \times 3.2 = 0.54$
D-E	$1.62 \times 1.9 = 3.08$	$1.57 \times 3.2 = 5.02$
Total pipe friction losses (Line K)	5.93	7.99

Step 11

Line K: Enter the sum of the values in Column 9. The value is the total friction loss in equivalent length for each designated pipe section.

Step 12

Line L: Subtract Line J from Line K and enter in Column 10.

The result should always be a positive or plus figure. If it is not, repeat the operation using Columns 5, 6, 8 and 9 until a balance or near balance is obtained. If the difference between Lines J and K is a high positive number, it is an indication that the pipe sizes are too large and should be reduced, thus saving materials. In such a case, the operations using Columns 5, 6, 8 and 9 should again be repeated.

The total friction losses are determined and subtracted from the pressure available to overcome pipe friction for trial pipe size. This number is critical as it provides a guide to whether the pipe size selected is too large and the process should be repeated to obtain an economically designed system.

Answer: The final figures entered in Column 5 become the design pipe size for the respective sections. Repeating this operation a second time using the same sketch but considering the demand for hot water, it is possible to size the hot water distribution piping. This has been worked up as a part of the overall problem in the tabular arrangement used for sizing the service and water distribution piping. Note that consideration must be given to the pressure losses from the street main to the water heater (section A-B) in determining the hot water pipe sizes.

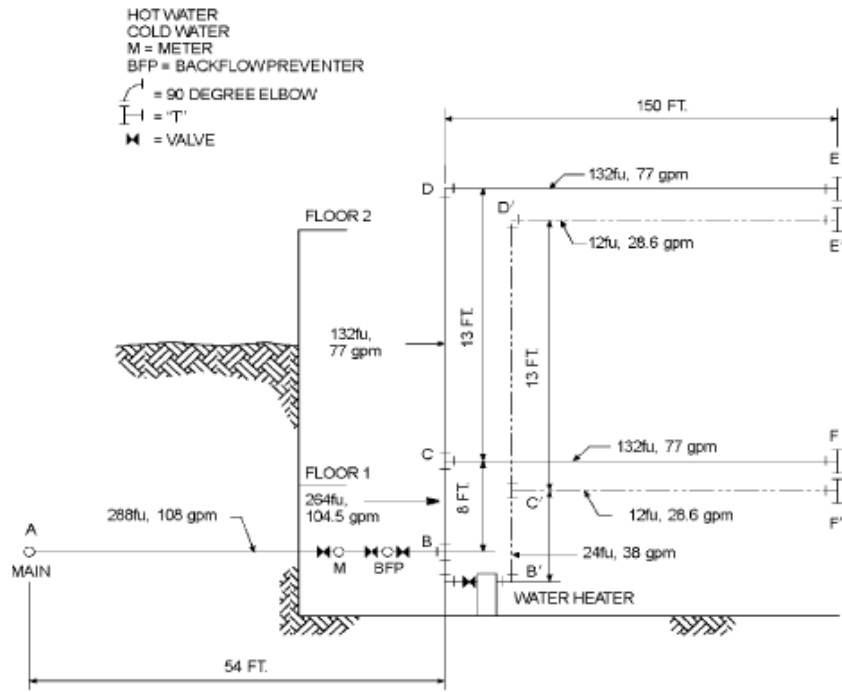
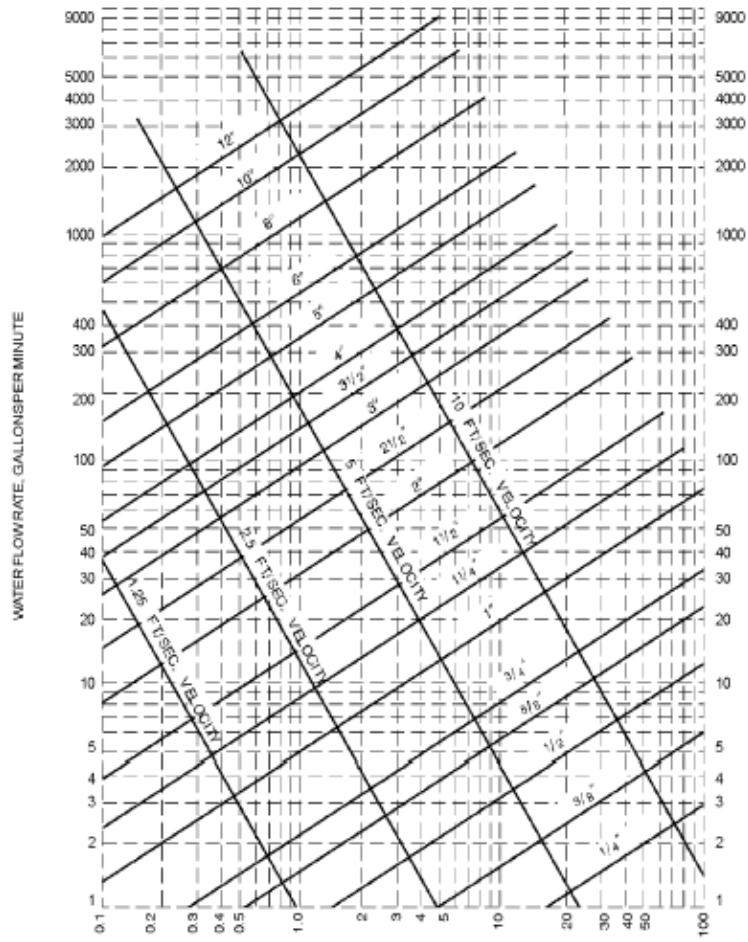


FIGURE E103.3(1)
 EXAMPLE-SIZING

For SI: 1 foot = 304.8 mm, 1 gpm = 3.785 L/m.



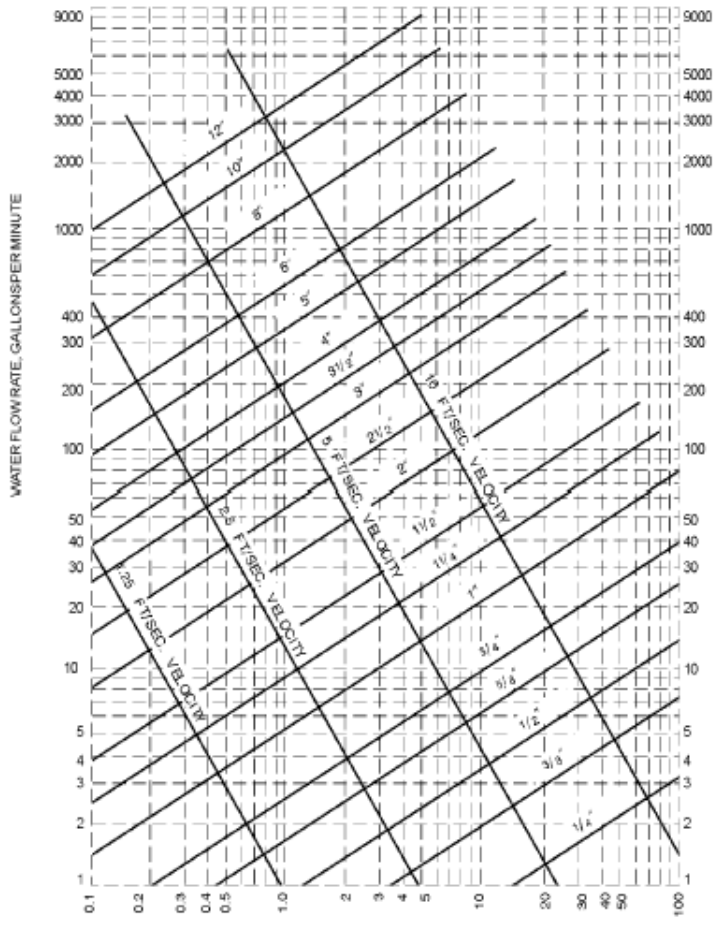
PRESSURE DROP PER 100 FEET OF TUBE, POUNDS PER SQUARE INCH

Note: Fluid velocities in excess of 5 to 8 feet/second are not usually recommended.

FIGURE E103.3(2)
 FRICTION LOSS IN SMOOTH PIPE^a
 (TYPE K, ASTM B 88 COPPER TUBING)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gpm = 3.785 L/m, 1 psi = 6.895 kPa,
 1 foot per second = 0.305 m/s.

a. This chart applies to smooth new copper tubing with recessed (Streamline) soldered joints and to the actual sizes of types indicated on the diagram.



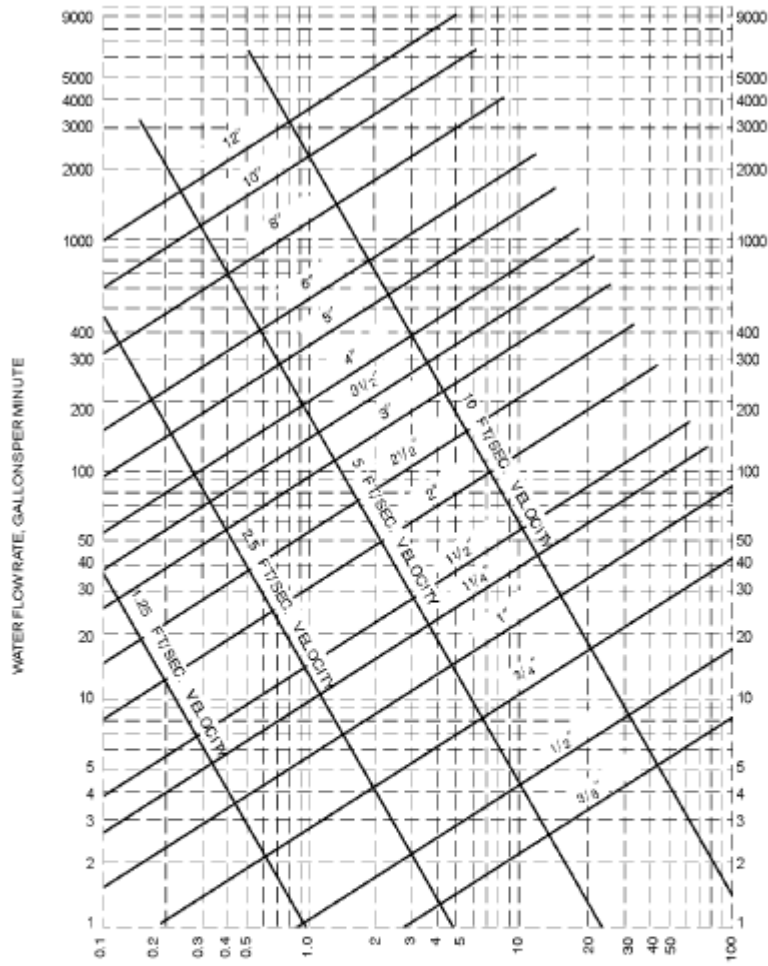
PRESSURE DROP PER 100 FEET OF TUBE, POUNDS PER SQUARE INCH

Note: Fluid velocities in excess of 5 to 8 feet/second are not usually recommended.

FIGURE E103.3(3)
 FRICTION LOSS IN SMOOTH PIPE^a
 (TYPE L, ASTM B 88 COPPER TUBING)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gpm = 3.785 L/min, 1 psi = 6.895 kPa,
 1 foot per second = 0.305 m/s.

a. This chart applies to smooth new copper tubing with recessed (Streamline) soldered joints and to the actual sizes of types indicated on the diagram.



PRESSURE DROP PER 100 FEET OF TUBE, POUNDS PER SQUARE INCH
 Note: Fluid velocities in excess of 5 to 8 feet/second are not usually recommended.

FIGURE E103.3(4)
FRICTION LOSS IN SMOOTH PIPE^a
(TYPE M, ASTM B 88 COPPER TUBING)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gpm = 3.785 L/m, 1 psi = 6.895 kPa,
 1 foot per second = 0.305 m/s.

a. This chart applies to smooth new copper tubing with recessed (Streamline) soldered joints and to the actual sizes of types indicated on the diagram.

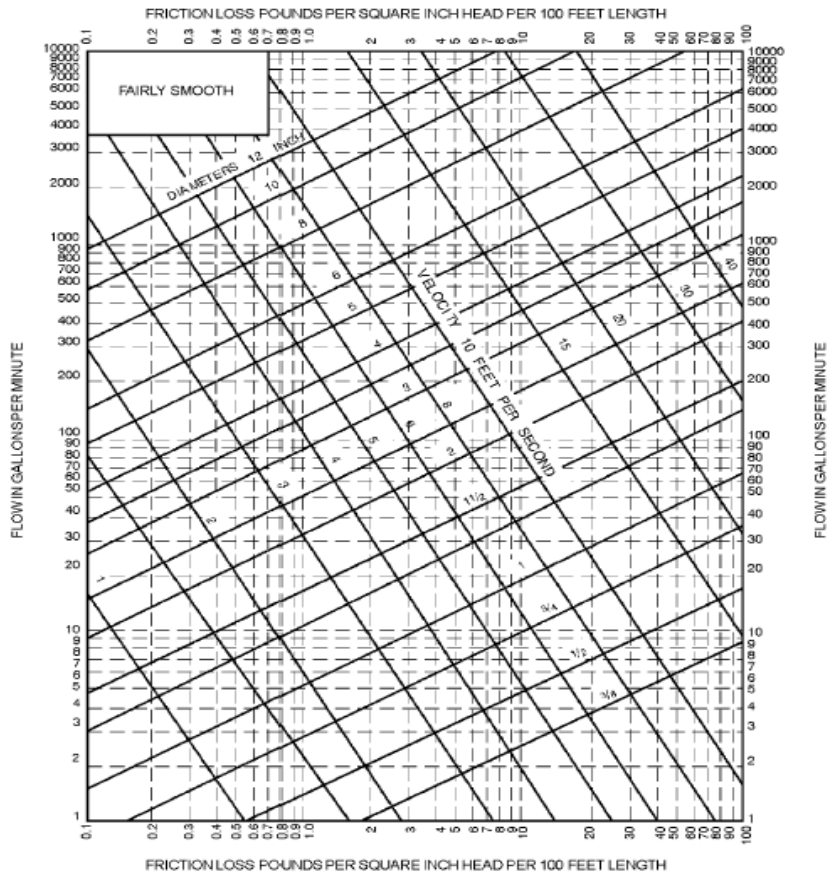


FIGURE E103.3(5)
FRICTION LOSS IN FAIRLY SMOOTH PIPE^a

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gpm = 3.785 L/m, 1 psi = 6.895 kPa,
 1 foot per second = 0.305 m/s.

a. This chart applies to smooth new steel (fairly smooth) pipe and to actual diameters of standard-weight pipe.

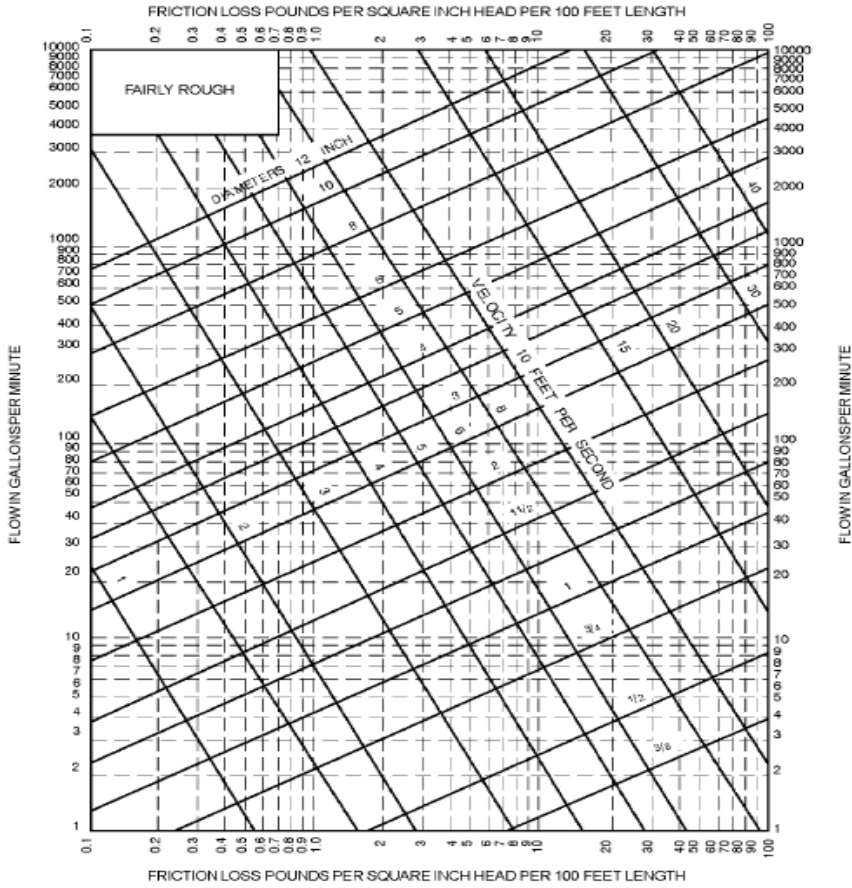


FIGURE E103.3(6)
FRICITION LOSS IN FAIRLY ROUGH PIPE^a

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gpm = 3.785 L/m, 1 psi = 6.895 kPa,
 1 foot per second = 0.305 m/s.

- a. This chart applies to fairly rough pipe and to actual diameters which in general will be less than the actual diameters of the new pipe of the same kind.

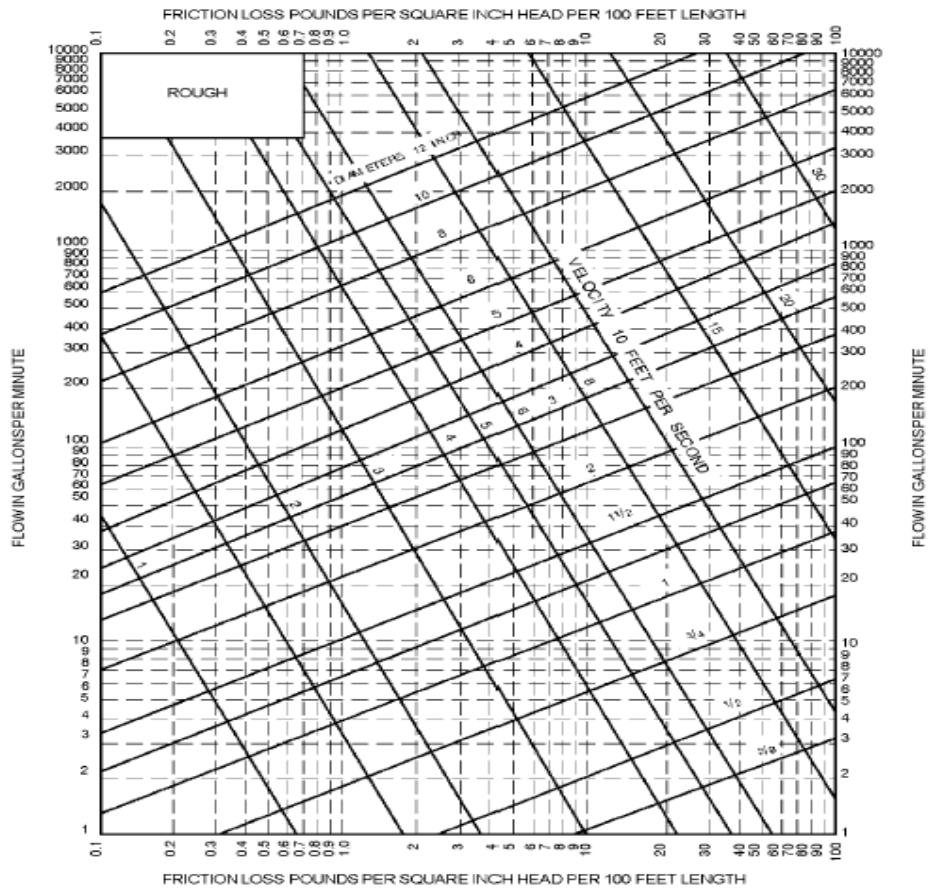


FIGURE E103.3(7)
FRICITION LOSS IN FAIRLY ROUGH PIPE^a

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gpm = 3.785 L/m, 1 psi = 6.895 kPa,
 1 foot per second = 0.305 m/s.

a. This chart applies to very rough pipe and existing pipe and to their actual diameters.

TABLE E103.3(2)
LOAD VALUES ASSIGNED TO FIXTURES^a

FIXTURE	OCCUPANCY	TYPE OF SUPPLY CONTROL	LOAD VALUES, IN WATER SUPPLY FIXTURE UNITS (wsfu)		
			Cold	Hot	Total
Bathroom group	Private	Flush tank	2.7	1.5	3.6
Bathroom group	Private	Flush valve	6.0	3.0	8.0
Bath tub	Private	Faucet	1.0	1.0	1.4
Bath tub	Public	Faucet	3.0	3.0	4.0
Bidet	Private	Faucet	1.5	1.5	2.0
Combination fixture	Private	Faucet	2.25	2.25	3.0
Dishwashing machine	Private	Automatic	—	1.4	1.4
Drinking fountain	Offices, etc.	³ / ₈ " valve	0.25	—	0.25
Kitchen sink	Private	Faucet	1.0	1.0	1.4
Kitchen sink	Hotel, restaurant	Faucet	3.0	3.0	4.0
Laundry trays (1 to 3)	Private	Faucet	1.0	1.0	1.4
Lavatory	Private	Faucet	0.5	0.5	0.7
Lavatory	Public	Faucet	1.5	1.5	2.0
Service sink	Offices, etc.	Faucet	2.25	2.25	3.0
Shower head	Public	Mixing valve	3.0	3.0	4.0
Shower head	Private	Mixing valve	1.0	1.0	1.4
Urinal	Public	1 " flush valve	10.0	—	10.0
Urinal	Public	³ / ₄ " flush valve	5.0	—	5.0
Urinal	Public	Flush tank	3.0	—	3.0
Washing machine (8 lb)	Private	Automatic	1.0	1.0	1.4
Washing machine (8 lb)	Public	Automatic	2.25	2.25	3.0
Washing machine (15 lb)	Public	Automatic	3.0	3.0	4.0
Water closet	Private	Flush valve	6.0	—	6.0
Water closet	Private	Flush valve	2.2	—	2.2
Water closet	Public	Flush valve	10.0	—	10.0
Water closet	Public	Flush valve	5.0	—	5.0
Water closet	Public or private	Flushometer tank	2.0	—	2.0

For SI: 1 inch = 25.4 mm, 1 pound = 0.454 kg.

- a. For fixtures not listed, loads should be assumed by comparing the fixture to one listed using water in similar quantities and at similar rates. The assigned loads for fixtures with both hot and cold water supplies are given for separate hot and cold water loads and for total load. The separate hot and cold water loads being three-fourths of the total load for the fixture in each use.

TABLE E103.3(3)
TABLE FOR ESTIMATING DEMAND

SUPPLY SYSTEMS PREDOMINANTLY FOR FLUSH TANKS			SUPPLY SYSTEMS PREDOMINANTLY FOR FLUSH VALVES		
Load	Demand		Load	Demand	
(Water supply fixture units)	(Gallons per minute)	(Cubic feet per minute)	(Water supply fixture units)	(Gallons per minute)	(Cubic feet per minute)
1	3.0	0.04104	—	—	—
2	5.0	0.0684	—	—	—
3	6.5	0.86892	—	—	—
4	8.0	1.06944	—	—	—
5	9.4	1.256592	5	15.0	2.0052
6	10.7	1.430376	6	17.4	2.326032
7	11.8	1.577424	7	19.8	2.646364
8	12.8	1.711104	8	22.2	2.967696
9	13.7	1.831416	9	24.6	3.288528
10	14.6	1.951728	10	27.0	3.60936
11	15.4	2.058672	11	27.8	3.716304
12	16.0	2.13888	12	28.6	3.823248
13	16.5	2.20572	13	29.4	3.930192
14	17.0	2.27256	14	30.2	4.037136
15	17.5	2.3394	15	31.0	4.14408
16	18.0	2.90624	16	31.8	4.241024
17	18.4	2.459712	17	32.6	4.357968
18	18.8	2.513184	18	33.4	4.464912
19	19.2	2.566656	19	34.2	4.571856
20	19.6	2.620128	20	35.0	4.6788
25	21.5	2.87412	25	38.0	5.07984
30	23.3	3.114744	30	42.0	5.61356
35	24.9	3.328632	35	44.0	5.88192
40	26.3	3.515784	40	46.0	6.14928
45	27.7	3.702936	45	48.0	6.41664
50	29.1	3.890088	50	50.0	6.684
60	32.0	4.27776	60	54.0	7.21872
70	35.0	4.6788	70	58.0	7.75344
80	38.0	5.07984	80	61.2	8.181216
90	41.0	5.48088	90	64.3	8.595624
100	43.5	5.81508	100	67.5	9.0234
120	48.0	6.41664	120	73.0	9.75864
140	52.5	7.0182	140	77.0	10.29336
160	57.0	7.61976	160	81.0	10.82808
180	61.0	8.15448	180	85.5	11.42964
200	65.0	8.6892	200	90.0	12.0312
225	70.0	9.3576	225	95.5	12.76644
250	75.0	10.026	250	101.0	13.50168
275	80.0	10.6944	275	104.5	13.96956
300	85.0	11.3628	300	108.0	14.43744
400	105.0	14.0364	400	127.0	16.97736
500	124.0	16.57632	500	143.0	19.11624
750	170.0	22.7256	750	177.0	23.66136
1,000	208.0	27.80544	1,000	208.0	27.80544
1,250	239.0	31.94952	1,250	239.0	31.94952
1,500	269.0	35.95992	1,500	269.0	35.95992
1,750	297.0	39.70296	1,750	297.0	39.70296
2,000	325.0	43.446	2,000	325.0	43.446

2,500	380.0	50.7984	2,500	380.0	50.7984
3,000	433.0	57.88344	3,000	433.0	57.88344
4,000	535.0	70.182	4,000	525.0	70.182
5,000	593.0	79.27224	5,000	593.0	79.27224

TABLE E103.3(4)
LOSS OF PRESSURE THROUGH TAPS AND TEES IN POUNDS PER SQUARE
INCH (psi)

GALLONS PER MINUTE	SIZE OF TAP OR TEE (inches)						
	3/8	1/2	1	1 1/4	1 1/2	2	3
10	1.35	0.64	0.18	0.08	—	—	—
20	5.38	2.54	0.77	0.31	0.14	—	—
30	12.10	5.72	1.62	0.69	0.33	0.10	—
40	—	10.20	3.07	1.23	0.58	0.18	—
50	—	15.90	4.49	1.92	0.91	0.28	—
60	—	—	6.46	2.76	1.31	0.40	—
70	—	—	8.79	3.76	1.78	0.55	0.10
80	—	—	11.50	4.90	2.32	0.72	0.13
90	—	—	14.50	6.21	2.94	0.91	0.16
100	—	—	17.94	7.67	3.63	1.12	0.21
120	—	—	25.80	11.00	5.23	1.61	0.30
140	—	—	35.20	15.00	7.12	2.20	0.41
150	—	—	—	17.20	8.16	2.52	0.47
160	—	—	—	19.60	9.30	2.92	0.54
180	—	—	—	24.80	11.80	3.62	0.68
200	—	—	—	30.70	14.50	4.48	0.84
225	—	—	—	38.80	18.40	5.60	1.06
250	—	—	—	47.90	22.70	7.00	1.31
275	—	—	—	—	27.40	7.70	1.59
300	—	—	—	—	32.60	10.10	1.88

For SI: 1 inch = 25.4 mm, 1 pound per square inch = 6.895 kpa, 1 gallon per minute = 3.785 L/m.

TABLE E103.3(5)
ALLOWANCE IN EQUIVALENT LENGTHS OF PIPE FOR FRICTION LOSS IN VALVES AND THREADED FITTINGS (feet)

FITTING OR VALVE	PIPE SIZE (inches)							
	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
45-degree elbow	1.2	1.5	1.8	2.4	3.0	4.0	5.0	6.0
90-degree elbow	2.0	2.5	3.0	4.0	5.0	7.0	8.0	10.0
Tee, run	0.6	0.8	0.9	1.2	1.5	2.0	2.5	3.0
Tee, branch	3.0	4.0	5.0	6.0	7.0	10.0	12.0	15.0
Gate valve	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0
Balancing valve	0.8	1.1	1.5	1.9	2.2	3.0	3.7	4.5
Plug-type cock	0.8	1.1	1.5	1.9	2.2	3.0	3.7	4.5
Check valve, swing	5.6	8.4	11.2	14.0	16.8	22.4	28.0	33.6
Globe valve	15.0	20.0	25.0	35.0	45.0	55.0	65.0	80.0
Angle valve	8.0	12.0	15.0	18.0	22.0	28.0	34.0	40.0

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad.

TABLE E103.3(6)
PRESSURE LOSS IN FITTINGS AND VALVES EXPRESSED AS EQUIVALENT LENGTH OF TUBE ^a (feet)

NOMINAL OR STANDARD (inc-ias)	FITTINGS				Coupling	VALVES			
	Standard Elbow		90-Degree Tee			Ball	Gate	Butterfly	Check
	90 Degree	45 Degree	Side Branch	Straight Run					
3/8	—	—	1.5	—	—	—	—	—	1.5
1/2	1	0.5	2	—	—	—	—	—	2
5/8	1.5	0.5	2	—	—	—	—	—	2.5
3/4	2	0.5	3	—	—	—	—	—	3
1	2.5	1	4.5	—	—	0.5	—	—	4.5
1 1/4	3	1	5.5	0.5	0.5	0.5	—	—	5.5
1 1/2	4	1.5	7	0.5	0.5	0.5	—	—	6.5
2	5.5	2	9	0.5	0.5	0.5	0.5	7.5	9
2 1/2	7	2.5	12	0.5	0.5	—	1	10	11.5
3	9	3.5	15	1	1	—	1.5	15.5	14.5
3 1/2	9	3.5	14	1	1	—	2	—	12.5
4	12.5	5	21	1	1	—	2	16	18.5
5	16	6	27	1.5	1.5	—	3	11.5	23.5
6	19	7	34	2	2	—	3.5	13.5	26.5
8	29	11	50	3	3	—	5	12.5	39

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad.

- a. Allowances are for streamlined soldered fittings and recessed threaded fittings. For threaded fittings, double the allowances shown in the table. The equivalent lengths presented above are based on a C factor of 150 in the Hazen-Williams friction loss formula. The lengths shown are rounded to the nearest half-foot.

SECTION PC E201
SELECTION OF PIPE SIZE
Reserved

CHAPTER 5
THE NEW YORK CITY BUILDING CODE

SECTION 501
ENACTMENT AND UPDATE OF THE NEW YORK CITY BUILDING CODE

§28-501.1. *Local law. A local law shall be enacted setting forth in this chapter a New York city building code based on the 2003 edition of the International Building Code published by the International Code Council, with changes recommended to adapt such code to the unique character of the city.*

§28-501.2 *Update. No later than the third year after the effective date of the New York city building code and every third year thereafter, the commissioner shall submit to the city council proposed amendments that he or she determines should be made to such code to bring it up to date with the latest edition of the International Building Code or otherwise modify the provisions thereof. In addition, prior to the submission of such proposal to the city council, such proposal shall be submitted to an advisory committee established by the commissioner pursuant to this title for review and comment.*

CHAPTER 6
THE NEW YORK CITY MECHANICAL CODE

SECTION 601
ENACTMENT AND UPDATE OF THE NEW YORK CITY MECHANICAL CODE

§28-601.1. *Local law. A local law shall be enacted setting forth in this chapter a New York city mechanical code based on the 2003 edition of the International Mechanical Code published by the International Code Council, with changes recommended to adapt such code to the unique character of the city.*

§28-601.2 *Update. No later than the third year after the effective date of the New York city mechanical code and every third year thereafter, the commissioner shall submit to the city council proposed amendments that he or she determines should be made to such code to bring it up to date with the latest edition of the International Mechanical Code or otherwise modify the provisions thereof. In addition, prior to the submission of such proposal to the city council, such proposal shall be submitted to an advisory committee established by the commissioner pursuant to this title for review and comment.*

CHAPTER 7
THE NEW YORK CITY FUEL GAS CODE

SECTION 701
ENACTMENT AND UPDATE OF THE NEW YORK CITY FUEL GAS CODE

§28-701.1. *Local law. A local law shall be enacted setting forth in this chapter a New York city fuel gas code based on the 2003 edition of the International*

Fuel Gas Code published by the International Code Council, with changes recommended to adapt such code to the unique character of the city.

§28-701.2 Update. No later than the third year after the effective date of the New York city fuel gas code and every third year thereafter, the commissioner shall submit to the city council proposed amendments that he or she determines should be made to such code to bring it up to date with the latest edition of the International Fuel Gas Code or otherwise modify the provisions thereof. In addition, prior to the submission of such proposal to the city council, such proposal shall be submitted to an advisory committee established by the commissioner pursuant to this title for review and comment.

CHAPTER 8
THE NEW YORK CITY RESIDENTIAL CODE

SECTION 801
ENACTMENT AND UPDATE OF THE NEW YORK CITY RESIDENTIAL CODE

§28-801.1. Local law. A local law shall be enacted setting forth in this chapter a New York city residential code based on the 2003 edition of the International Residential Code published by the International Code Council, with changes recommended to adapt such code to the unique character of the city.

§28-801.2 Update. No later than the third year after the effective date of the New York city residential code and every third year thereafter, the commissioner shall submit to the city council proposed amendments that he or she determines should be made to such code to bring it up to date with the latest edition of the International Residential Code or otherwise modify the provisions thereof. In addition, prior to the submission of such proposal to the city council, such proposal shall be submitted to an advisory committee established by the commissioner pursuant to this title for review and comment.

§2. This local law shall take effect on July 1, 2007 provided, however that prior to such date a New York city building code based on the 2003 edition of the International Building Code, a New York city mechanical code based on the 2003 edition of the International Mechanical Code, , a New York city residential code based on the 2003 edition of the International Residential Code, a New York city fuel gas code based on the 2003 edition of the International Fuel Gas Code, all such international codes published by the International Code Council, with recommended changes that reflect the unique character of the city, shall be enacted and that if a local law or laws enacting such New York city codes are not enacted prior to July 1, 2007, this local law shall not take effect, and provided, further, that prior to the effective date of this local law the commissioner shall take all administrative actions necessary for the timely implementation of this local law including but not limited to the promulgation of rules.

THE CITY OF NEW YORK, OFFICE OF THE CITY CLERK, s.s.:

I hereby certify that the foregoing is a true copy of a local law of the City of New York, passed by the Council on November 16, 2005 and approved by the Mayor on December 1, 2005.

VICTOR L. ROBLES, City Clerk of the Council

CERTIFICATION PURSUANT TO MUNICIPAL HOME RULE LAW §27

Pursuant to the provisions of Municipal Home Rule Law §27, I hereby certify that the enclosed Local Law (Local Law 99 of 2005, Council Int. No. 478-A) contains the correct text and:

Received the following vote at the meeting of the New York City Council on November 16, 2005: 48 for, 0 against, 0 not voting.

Was signed by the Mayor on December 1, 2005.

Was returned to the City Clerk on December 5, 2005.

JEFFREY D. FRIEDLANDER, Acting Corporation Counsel