



Legislation Text

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A Local Law to amend the New York city plumbing code, in relation to bringing it up to date with the 2009 edition of the international plumbing code, with differences that reflect the unique character of the city.

Be it enacted by the Council as follows:

Section 1. Legislative intent. This local law implements section 28-601.1 of the administrative code, which requires triennial updates of the New York city plumbing code to reflect changes in the International Plumbing Code. These amendments will bring the New York city plumbing code up to date with the 2009 International Plumbing Code published by the International Code Council, with differences to accommodate the unique nature of construction in the City. The local law is divided into parts from A through O with each part comprising amendments to a separate chapter or appendix of the code in separately numbered sections within the part.

PART A

CHAPTER 1

§1. Sections 102.1, 102.2, 102.3 and 102.4 of the New York city plumbing code, as amended by local law number 8 for the year 2008, are amended to read as follows:

102.1 General. [The provisions of this code shall apply to all matters affecting or relating to structures and premises, as set forth in Section PC 101.] Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

102.2 Existing installations. [Plumbing] Except as otherwise specifically provided, plumbing systems lawfully in existence at the time of the adoption or a subsequent amendment 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.

102.2.1 Existing buildings. Additions, alterations, renovations or repairs related to building or structural issues shall be governed by Chapter 1 of Title 28 of the Administrative Code, the New York City Building Code and the 1968 Building Code, as applicable.

102.2.2 References to the New York City Building Code. For existing buildings, a reference to a section of the New York City Building Code in this code shall also be deemed to refer to the equivalent provision of the 1968 Building Code, as applicable in accordance with Chapter 1 of Title 28 of the Administrative Code.

102.3 Maintenance. Installations, both existing and new, and parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe and sanitary condition. Devices or safeguards that are required by this code shall be maintained in compliance with the applicable provisions under which they were installed.

102.3.1 Owner responsibility. 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 Additions, alterations or repairs. Additions, alterations, renovations or repairs to installations shall conform to that required for new installations without requiring the existing installation to comply with all of the requirements of this code. Additions, alterations or repairs shall not cause an existing installation to become unsafe, hazardous or overloaded.

102.4.1 Minor additions, alterations, renovations and repairs. Minor additions, alterations, renovations and repairs to existing installations shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous and is approved.

§2. The New York city plumbing code is amended by adding a new section 102.10, to read as follows:

102.10 Application of references. Reference 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.

§3. Section 104.1 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

104.1 General. The commissioner shall have the authority to render interpretations of this code and to adopt rules, policies, and procedures in order to clarify and implement its provisions. Such interpretations, policies, procedures, and rules shall be in compliance with the intent and purpose of this code. See the New York City Charter and Chapter 1 of Title 28 of the Administrative Code for additional provisions relating to the authority of the Commissioner of Buildings.

§4. Section 105.6 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

105.6 Other permits. In addition to any permits required by the provisions of this code, the following permits

shall also be required:

1. Permits for all water supplies and backflow devices for all buildings shall be obtained from the Department of Environmental Protection, and the installation of the water service system from the street main up to and including the meter outlet control valve shall be subject to inspection and approval by such department. All backflow devices shall be acceptable to the New York State Department of Health.
2. Permits for the installation of the building house sewer or drain from the street line to, and including, the spur connection at the street sewer shall be obtained from the Department of Environmental Protection, except that, in conjunction with the issuance of a permit for the construction or alteration of a structure within the curb line, the commissioner may issue a permit for connection with a sewer or drain.
3. Permits for sidewalk and street openings shall be obtained from the Department of Transportation.
4. Where groundwater discharge permits are required by the rules of the Department of Environmental Protection for the discharge of groundwater, such permits shall be obtained from the Department of Environmental Protection in accordance with such rules.

§5. Section 106.6 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

106.6 [Sewer adequacy verification. Applications for construction document approval shall include a house/site connection application approved or accepted by the Department of Environmental Protection as to the availability of a public sewer system, and when not available, alternate provisions for disposal of storm water and sanitary sewage.

106.6.1 Increases in existing impervious surfaces. Whenever an alteration increases impervious surfaces on the lot to greater than 20 percent of the impervious surfaces existing when the structure was constructed, the applicant shall submit a house/site connection application approved or accepted by the Department of Environmental Protection as to the availability of a public sewer system, as well as an evaluation of 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 proposed to be increased by an alteration after the effective date of this code is less than or equal to 1,000 square feet (93 m2).] **Discharge of sewage and discharge and/or management of stormwater runoff.** Applications for construction document approval shall comply with Sections 106.6.1 and 106.6.2.

106.6.1 Sewage. Applications for construction document approval shall include submittal documents relating to the availability and feasibility of a public sanitary or public combined sewer and/or other approved discharge for sewage in accordance with Sections 106.6.1.1 and 106.6.1.2 for the following types of applications:

1. New buildings that include any fixtures that produce sewage;
2. Alterations that require an increase in size to an existing sanitary or combined sewer connection; and/or

3. Alterations requiring a new connection to a sanitary or combined sewer.

106.6.1.1 Connection feasible and available. Where a public sanitary or combined sewer is certified by the Department of Environmental Protection or certified by an applicant in accordance with rules of such department to be available and connection thereto feasible, the applicant shall submit:

1. **Department of Environmental Protection certification of availability and feasibility.** A sewer certification issued by the Department of Environmental Protection that a public sanitary or combined sewer is available and connection thereto is feasible. Applications for such certification shall be made to the Department of Environmental Protection on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department) and shall be reviewed and approved by such department in accordance with the rules of such department. Such certification may be conditioned by such department on part or all of the sewage to be disposed of with an on-site disposal system or with the use of an alternative disposal system; or
2. **Applicant certification of availability and feasibility.** A certification submitted by the applicant to the Department of Environmental Protection in accordance with the rules of such department that a public sanitary or combined sewer is available and connection thereto is feasible, in such cases where the availability and feasibility of connection to a public sanitary or combined sewer are allowed to be certified by the applicant pursuant to such rules. Such certification shall be on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department).

106.6.1.2 Connection not feasible or not available. Where a public sanitary or combined sewer is not available, or where connection thereto is not feasible, the applicant shall submit:

1. **Department of Environmental Protection or applicant certification of unavailability or non-feasibility.** (i) A certification issued by the Department of Environmental Protection that a public sanitary or combined sewer is not available or that connection to an available sewer is not feasible. Such certification shall be on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department) or (ii) A certification submitted by the applicant to the Department of Environmental Protection that a public sanitary or combined sewer is not available or that connection thereto is not feasible, in such cases where the availability and feasibility of connection to a public sanitary or combined sewer are allowed to be certified by the applicant pursuant to the rules of such department. Such certification shall be on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department); and
2. **On-site disposal.** A proposal for the design and construction of a system for the on-site disposal of sewage conforming to the provisions of this code and other applicable laws and rules including but not limited to minimum required distances from lot lines or structures and subsoil conditions. Construction documents for such system shall be subject to the approval of the department.

106.6.2 Stormwater. Applications for construction document approval shall include submittal documents

relating to the availability and feasibility of a public combined or storm sewer or other approved method for stormwater discharge in accordance with Sections 106.6.2.1 and 106.6.2.2 for the following types of applications:

1. New buildings;
2. Alterations of buildings proposing horizontal building enlargement; and/or
3. Alterations that increase impervious surfaces on the tax lot.

Exceptions:

1. Applications for construction document approval for the alteration of an existing one- or two-family dwelling need not include such submittal documents, where the area of a proposed horizontal building enlargement and any proposed increase in impervious surfaces combined is less than or equal to 200 square feet (19 m²).
 - 1.1. This exception shall not apply if the horizontal building enlargement and increase in impervious surface related to the current application for construction document approval and any other enlargement or increase in impervious surface made on the same tax lot after July 1, 2008 together exceed 200 square feet (19 m²).
2. Applications for construction document approval for the alteration of a building need not include such submittal documents, where the area of a proposed horizontal building enlargement and any proposed increase in impervious surfaces on a lot combined is less than or equal to 1,000 square feet (93 m²), and on-site disposal of stormwater conforming to the provisions of the applicable laws and rules as determined by the department is proposed for such enlargement and/or increase in impervious surface.
 - 2.1. This exception shall not apply where on-site disposal cannot be designed to conform to the provisions of the applicable laws and rules including but not limited to minimum required distances from lot lines or structures or subsoil conditions as determined by the department.
 - 2.2. This exception shall not apply if the horizontal building enlargement and increase in impervious surface related to the current application for construction document approval and all other enlargements or increases in impervious surface made on the same tax lot after July 1, 2008 together exceed 1000 square feet (93 m²).

106.6.2.1 Connection feasible and available. Where a public combined or storm sewer is certified by the Department of Environmental Protection or certified by an applicant in accordance with rules of such department to be available and connection thereto is feasible, applicants shall submit:

1. **Department of Environmental Protection certification of availability and feasibility.** A sewer certification issued by the Department of Environmental Protection that a public storm or combined sewer is available and connection thereto is feasible. Applications for such certification shall be made to the Department of Environmental Protection on forms specified by such department (Department of Environmental Protection “house/site connection proposal

application” or other form as specified in the rules of such department) and shall be reviewed and approved by such department in accordance with the rules of such department. Such certification may be conditioned by such department on part or all of the stormwater runoff to be disposed of through an on-site detention or retention system, or by use of alternative disposal methods including but not limited to ditches, swales or watercourses; or

- 2. Applicant certification of availability and feasibility.** A certification submitted by the applicant to the Department of Environmental Protection in accordance with the rules of such department that a public storm or combined sewer is available and connection thereto is feasible, in such cases where the availability and feasibility of connection to a public storm or combined sewer are allowed to be certified by the applicant pursuant to such rules. Such certification shall be on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department).

106.6.2.2 Connection not feasible or not available. Where a public combined or storm sewer is not available, or where connection thereto is not feasible, applicants shall submit:

- 1. Department of Environmental Protection or applicant certification of unavailability or non-feasibility.** (i) Certification issued by the Department of Environmental Protection that a public storm or combined sewer is not available or that connection thereto is not feasible. Such certification shall be on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department); or (ii) Certification submitted by the applicant to the Department of Environmental Protection that a public storm or combined sewer is not available or that connection thereto is not feasible, in such cases where the availability and feasibility of connection to a public storm or combined sewer are allowed to be certified by the applicant pursuant to rules of such department. Certification shall be on forms specified by such department (Department of Environmental Protection “house/site connection proposal application” or other form as specified in the rules of such department); and
- 2. On-site disposal.** A proposal for the design and construction of a system for the on-site disposal of stormwater conforming to the provisions of this code and other applicable laws and rules including but not limited to minimum required distances from lot lines or structures and subsoil conditions. Construction documents for such system shall be subject to the approval of the department.

§6. Section 106.9 of the New York city plumbing code, as amended by local law number 8 for the year 2008, are amended to read as follows:

106.9 Private stormwater or sewage disposal system. If a private stormwater or sewage disposal system is to be installed, a site and subsoil evaluation indicating that the site and subsoil conditions comply with the applicable laws and rules shall be submitted in accordance with the provisions of Section 1704.20.1 of the New York City Building Code.

§7. Section PC 107 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

SECTION PC 107 INSPECTIONS AND TESTING

107.1 General. Except as otherwise [specifically provided] specified, inspections required by this code or by the department during the progress of work, may be performed on behalf of the owner by approved agencies or, if applicable, by special inspectors. However, in the interest of public safety, the commissioner may direct that any of such inspections be performed by the department. All inspections shall be performed at the sole cost and expense of the owner. Refer to Article 116 of Chapter 1 of Title 28 of the Administrative Code for additional provisions relating to inspections.

107.2 Required inspections and testing. In addition to any inspections otherwise required by this code or applicable rules, the holder of the permit shall be responsible for the scheduling of the following required inspections:

1. Progress inspections:
 - 1.1. Underground inspection and/or testing shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place.
 - 1.2. Rough-in inspection and/or testing 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.
 - 1.3. Inspections required by the New York City Energy Conservation Code shall be made in accordance with rules of the department, as applicable.
2. Special inspections. Special inspections shall be performed in accordance with this code and Chapter 17 of the New York City Building Code, and, where applicable, Section 107.[2]3.
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. Refer to Article 116 of Chapter 1 of Title 28 of the Administrative Code for additional requirements.

107.[1]2.1 Approved agencies. Refer to Articles 114 and 115 of Chapter 1 of Title 28 of the Administrative Code.

107.[1]2.2 Exposure of work. It shall be the duty of the permit holder to cause the work to remain accessible and exposed for inspection purposes. Neither the commissioner nor the city shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

107.[2]3 Special inspections of alternative engineered design systems. Special inspections of alternative engineered design plumbing systems shall be conducted in accordance with Sections 107.[2]3.1 and 107.[2]3.2.

107.[2]3.1 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]3.2 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 construction documents.

107.[3]4 Testing. Plumbing work and systems shall be tested as required in Section 312 and in accordance with Sections 107.[3] 4.1 through 107.[3] 4.3. Tests shall be made by the permit holder and observed by the commissioner.

107.[3]4.1 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.
3. For ordinary plumbing work, the department may accept written certification from a licensed master plumber that the job was performed in compliance with the requirements of this code and rules of the department.
4. Minor alterations and ordinary repairs.

107.[3]4.2 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]4.3 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]5 Sign-off of completed work. Refer to Article 116 of Chapter 28 of the Administrative Code.

107.[5]6 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.

107.7 Connection of service utilities. Refer to Title 28 of the Administrative Code.

PART B
CHAPTER 2

§1. Section 201.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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, or the New York City Energy Conservation Code, such terms shall have the meanings ascribed to them as in those codes.

§2. The definition of “BACKFLOW” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 or the undesirable reversal of flow from the intended direction of flow in the drainage system due to a system stoppage, system overload or a higher pressure on the drainage pipe side of the house trap.

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.

§3. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “BACKWATER VALVE” to follow in alphabetical order the definition of “BACKFLOW PREVENTER,” to read as follows:

BACKWATER VALVE. A device or valve installed in the building drain, sewer or any branch line where such drain or branch is subject to backflow, and which prevents drainage or waste from backing up into a lower level or fixtures and causing a flooding condition.

§4. The definition of “BRANCH INTERVAL” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

BRANCH INTERVAL. [A distance along a soil or waste stack corresponding in general to a story height, but not less than 8 feet (2438mm), within which the horizontal branches from one floor or story of a structure are connected to the stack.] A vertical measurement of distance, 8 feet (2438 mm) or more in developed length, between the connections of horizontal branches to a drainage stack. Measurements are taken down the stack from the highest horizontal branch connection.

§5. The definition of “BUILDING SEWER” in section PC 202 of the New York city plumbing code as added by local law number 99 for the year 2005, is amended to read as follows:

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.] See Sewer, Building sewer.

[**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.]

§6. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “CLEAR WATER WASTE” to follow in alphabetical order the definition of “CLEANOUT,” to read as follows:

CLEAR WATER WASTE. Drips from pumps and equipment, coil condensate, steam condensate, single pass refrigeration discharge, RPZ discharge, and similar matter.

§7. The definition of “COMBINED BUILDING SEWER” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

COMBINED [BUILDING] SEWER. See “[Building sewer] Sewer, combined sewer.”

§8. The definition of “DEPTH OF WATER SEAL” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is REPEALED.

§9. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “DETENTION SYSTEM” to follow in alphabetical order the definition of “DESIGN FLOOD ELEVATION,” to read as follows:

DETENTION SYSTEM. A system that slows and temporarily holds storm water runoff so that it can be released into the public sewer system at a controlled rate.

§10. The definition of “DRAINAGE FIXTURE UNIT” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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.

§11. The definition of “DRAINAGE SYSTEM” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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**] **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] sewage or similar matter.

Storm. A drainage system that carries [rainwater, surface water, subsurface water and similar liquid wastes] only stormwater, potable clear water waste, and groundwater.

§12. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “DRYWELL” to follow in alphabetical order the definition of “DRAINAGE SYSTEM,” to read as follows:

DRYWELL. A covered pit constructed so as to permit liquid contents to seep into the ground.

§13. Section PC 202 of the New York city plumbing code is amended by moving the definition of “FLOOD LEVEL RIM” in section PC 202 of the New York city plumbing code to follow, in alphabetical order, the definition of “FLOOD HAZARD AREA.”

§14. Section PC 202 of the New York city plumbing code is amended to add a definition of “FLOOR DRAIN” to follow, in alphabetical order, the definition of “FLOOD LEVEL RIM,” to read as follows:

FLOOR DRAIN. A fixture set into a floor, used to drain water into a plumbing drainage system.

§15. The definition of “GREASE INTERCEPTOR” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

GREASE INTERCEPTOR. [A passive interceptor whose rated flow exceeds 50 gpm (189 L/m)] A plumbing appurtenance that is installed in a sanitary drainage system to intercept grease-laden wastes from a wastewater discharge. Such device has the ability to intercept free-floating fats and oils.

Flow control. A device installed upstream from the interceptor, having an orifice that controls the rate of flow through the interceptor and an air intake (vent) downstream from the orifice that allows air to be drawn into the flow stream.

§16. The definition of “GREASE TRAP” in section PC 202 of the New York city plumbing code is REPEALED.

§17. Section PC 202 of the New York city plumbing code is amended by adding new definitions of “GREASE REMOVAL DEVICE, AUTOMATIC (GRD)” and “GROUNDWATER” to follow, in alphabetical order, the definition of “GREASE INTERCEPTOR,” to read as follows:

GREASE REMOVAL DEVICE, AUTOMATIC (GRD). A plumbing appurtenance that is installed in the sanitary drainage system to intercept grease-laden waste from wastewater discharge. Such device operates on a time- or event-controlled basis and has the ability to remove free-floating fats, oils and grease automatically without intervention from the user, except for maintenance.

GROUNDWATER OR GROUND WATER. Water located beneath the ground surface in soil pore spaces and in the fractures of rock formations.

§18. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “HAND SINK” to follow the definition of “GREASE TRAP” to read as follows:

HAND SINK. A plumbing fixture especially designed and placed for the washing of hands.

§19. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “LOW-PRESSURE STEAM-HEATING BOILER” to follow in alphabetical order the definition of “LOCAL VENT STACK,” to read as follows:

LOW-PRESSURE STEAM-HEATING BOILER. A boiler furnishing steam at pressures not exceeding 15 psig (103 kPa).

§20. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “PERMEABILITY” to follow in alphabetical order the definition of “OPEN AIR,” to read as follows:

PERMEABILITY. A measure of the rate of movement of liquid through soil.

§21. Add a new definition of “PNEUMATIC SEWAGE EJECTOR VENT” to follow in alphabetical order the definition of “PLUMBING SYSTEM,” to read as follows:

PNEUMATIC SEWAGE EJECTOR VENT. A vent from pneumatic sewage ejectors that terminates separately to the open air.

§22. The definition of “POTABLE WATER” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 the regulations of the public health authority having jurisdiction] New York State Sanitary Code.

§23. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “PRIVATE SEWER” to follow in alphabetical order the definition of “PRIVATE,” to read as follows:

PRIVATE SEWER. See “Sewer, private sewer.”

§24. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “PUBLIC SEWER” to follow in alphabetical order the definition of “PUBLIC OR PUBLIC UTILIZATION,” to read as follows:

PUBLIC SEWER. See “Sewer, public sewer.”

§25. The definition of “REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPZ). 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.

§26. Section PC 202 of the New York city plumbing code is amended by adding a new definition of “RETENTION SYSTEM” to follow in alphabetical order the definition of “RELIEF VENT,” to read as follows:

RETENTION SYSTEM. A system that captures storm water runoff on site with no release.

§27. Section PC 202 of the New York city plumbing code is amended by adding a new definition

of “SANITARY SEWER” after the definition of “ROUGH-IN,” to read as follows:

SANITARY SEWER. See “Sewer, sanitary sewer.”

§28. The definition of “SEWAGE” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

SEWAGE. Any liquid waste containing animal or vegetable matter in suspension or solution[, including liquids containing] or chemicals in solution including but not limited to wastewater, human or animal wastes, non-potable clear water waste, and industrial waste.

§29. The definition of “SEWER” in section PC 202 of the New York city plumbing code as added by local law number 99 for the year 2005, is amended to read as follows:

SEWER.

Building sewer. [See “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 sewer. A sewer receiving a combination of sewage, storm water, groundwater and non-potable clear water waste.

Private sewer. A private sanitary, storm, or combined sewer that is designed and constructed in accordance with the requirements of the City drainage plan to serve a specific development and is located in a finally mapped street, a record street, or a sewer easement, and discharges into an approved outlet.

Public sewer. [A common sewer directly controlled by public authority.] A sewer that is owned by the city of New York.

Sanitary sewer. [A sewer that carries sewage and excludes storm, surface and ground water.] A sewer that conveys only sewage.

Storm sewer. [A sewer that conveys rainwater, surface water, subsurface water and similar liquid wastes.] A sewer that conveys only storm water, groundwater and potable clear water waste.

§30. Section PC 202 of the New York city plumbing code is amended by adding new definitions of “STORM SEWER” and “STORM WATER” after the definition of “STORM DRAIN,” to read as follows:

STORM SEWER. See “Sewer, storm sewer.”

STORM WATER OR STORMWATER. The excess water running off from the surface of a drainage area during and immediately following a period of precipitation.

§31. The definition of “SUMP VENT” in section PC 202 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

SUMP VENT. A vent from sewage ejectors, or similar equipment, that terminates to the sanitary vent system or separately to the open air.

PART C
CHAPTER 3

§1. Section 301.3 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

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: [Lavatories] Fixtures discharging wastewater shall not be required to discharge to the sanitary drainage system where such fixtures discharge to a water recycling system in accordance with Appendix C [and that is approved by the commissioner].

§2. Section 301.6 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

301.6 Prohibited locations. Plumbing systems shall not be located in an elevator shaft [or] and plumbing systems not related to elevator machinery shall not be located in [an] elevator equipment rooms.

Exception: [Sump pumps and floor drains indirectly connected to the plumbing system shall be permitted at the base of the shaft.] Floor drains, sumps and sump pumps shall be permitted at the base of the shaft, provided they are indirectly connected to the plumbing system.

§3. Section 301.7 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] In instances where conflicts occur between this code and the manufacturer's installation instructions, the more restrictive provisions shall 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.]

§4. Section 302.1 and 302.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

302.1 Detrimental or dangerous materials. Ashes, cinders or rags; flammable, combustible, 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; or any other substance or material prohibited from being discharged into the public sewers in accordance with the rules of the Department of Environmental Protection, 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] except in accordance with the rules of the Department of Environmental Protection.

§5. Section 305.1 of the New York city plumbing code as added by local law number 99 for the year 2005, is amended to read as follows:

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 movement, including 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).

§6. Section 305.8 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 (38mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. [Protective shield plates shall be a minimum of 0.062-inch-thick (1.6 mm) steel,] Such shield plates shall have a thickness of not less than 0.0575-inches (1.436 mm) (No. 16 gage). Such plates 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.

§7. Section 307.6 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

307.6 Piping materials exposed within plenums. All piping materials exposed within plenums shall comply with the provisions of the New York City [Mechanical] Construction Codes.

§8. Section 308.9 of the New York city plumbing code is REPEALED.

§9. Section 308.10 of the New York city plumbing code, as added by local law number 99 for the year 2005, is renumbered to be 308.9.

§10. Table 308.5 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

**TABLE 308.5
HANGER SPACING**

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
ABS pipe	4	10 ^b
Brass pipe	10	10
Cast-iron pipe	5 ^a	At base and at each story height no greater than 20
Copper or copper-alloy pipe	12	At each story height no greater than 12
Copper or copper-[allow] alloy tubing, 1/4-inch diameter and smaller	6	At each story height no greater than 10
Copper or copper-alloy tubing, 1/2-inch diameter and larger	10	At each story height no greater than 10
Steel pipe	12	At every story height
PVC pipe	4	10 ^b
Stainless steel drainage systems	10	10 ^b

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.
- b. Midstory guide for sizes 2 inches and smaller.

§11. Section 309.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 Appendix G of the New York [city building code] City Building Code.

§12. Section 310.4 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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.
2. 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.
3. Toilet areas located within Group I-3 housing areas.

§13. The New York city plumbing code is amended to add a new section 310.5, to read as follows:

310.5 Urinal partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The walls or partitions shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal a minimum of 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished back wall surface, whichever is greater.

Exceptions:

1. Urinal partitions shall not be required in a single occupant or family/assisted-use toilet room with a lockable door.
2. Toilet rooms located in day-care and child-care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

§14. Section PC 312 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

**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] 10 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] pounds per square inch (psi) (69 kPa) or less shall utilize a testing gauge having increments of 0.10 psi (0.69 kPa) or less.
2. Tests requiring a pressure of greater than 10 psi (69 kPa) but less than or equal to 100 psi (689 kPa) shall utilize a testing gauge having increments of 1 psi (69 kPa) or less.
3. Tests requiring a pressure of greater than 100 psi (689 kPa) shall utilize a testing gauge having increments of 2 psi (14 kPa) or less.

312.1.2 Witnessing tests. Tests in accordance with this code shall be witnessed by department plumbing inspectors or approved agencies. The department shall prescribe qualifications for individuals who are authorized to witness such tests on behalf of approved agencies, including but not limited to the requirement that such individuals shall be licensed master plumbers or registered design professionals with not less than 5 years experience in the inspection and testing of piping systems. Such tests may be conducted without any [verifying] inspection or tests witnessed by the department, provided that verified statements and supporting inspectorial and test reports are filed with the department within [one] two working days of such tests.

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)] 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] a 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 (344 kPa) above its normal working pressure but not less than 150 psi (1033 kPa). 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.

312.5.1 Water service pipe. In addition to any requirements of Section 312.5, tests for water service pipes shall comply with the following:

1. In the presence of the tapper or inspector of the Department of Environmental Protection, each new service pipe or repaired service pipe shall be subjected to a water test made under the street main pressure.
2. All such pipes and appurtenances shall remain uncovered for the duration of the test and shall show no sign of leakage.
2. When any question arises as to the installation conforming with these regulations, an internal hydrostatic test as specified for materials may be applied, subject to the approval of the Department of Environmental Protection.

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 Section 312.2 or 312.3. Where storm drainage piping is designed to run full, the system shall be tested to withstand the head of 10 feet (3048 mm) of water above the anticipated high water level.

Exception: Corrugated HDPE pipe installed outside of a building shall be tested to withstand the head of water equal to grade.

312.9 Shower liner test. Where shower floors and receptors are made water-tight by the application of materials required by Section 417.5.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water-tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 2 inches (51 mm) measured at the threshold. Where a threshold of at least 2 inches (51 mm) high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 2 inches (51 mm) deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes, and there shall not be evidence of leakage.

312.[9]10 Inspection and testing of backflow prevention assemblies. Inspection and testing of secondary backflow prevention assemblies shall comply with Sections 3 12.[9] 10.1 and 3 12.[9] 10.2.

312.[9]10.1 Inspections. Annual inspections shall be made of all backflow prevention assemblies, [and] air

gaps, spill-proof vacuum breakers, pressure vacuum breaker assemblies, and hose connection backflow preventers to determine whether they are operable on forms provided by the department. Such forms shall be retained by the owner and shall be made available upon request to the department for a period of five years.

312.[9]10.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, [pressure vacuum breaker assemblies,] reduced pressure detector fire protection backflow prevention assemblies, and 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, and annually thereafter. Refer to Section 608.13 and the [city department of environmental protection] 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] CSA B64.10 or CSA B64.10.1.

§15. Section PC 314 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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).

314.1.1 Condensate disposal. Condensate from all fuel-burning appliances and associated flues shall be neutralized to a pH of at least 6 and no more than 8 prior to disposal to a sanitary system.

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]4.

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. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than 1/8 unit vertical in 12 units horizontal (1-percent slope). 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, cross-linked polyethylene, polybutylene, polyethylene, ABS, CPVC, or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 relative to the material type. Condensate waste and drain line size shall not be less than 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] Table 314.2.2.

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:] where damage to any building components could occur as a result of overflow from the equipment primary condensate removal system, one of the following auxiliary protection methods shall be provided for each cooling coil or fuel-fired appliance that produces condensate:

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] 1 ½ 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] Galvanized sheet metal pans shall have a minimum thickness of not less than [0.0276-inch (0.7 mm)] 0.0236-inch (0.6010 mm) (No. 24 gage) 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] this section.
4. A water-level detection device shall be provided that will shut off the equipment served in the event that the primary drain is blocked. The device shall be installed in the primary drain line, the overflow drain line, or in the equipment-supplied drain pan, located at a point higher than the primary drain line connection and below the overflow rim of such pan.

Exception: Fuel-fired appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.

314.2.3.1 Water-level monitoring devices. On down-flow units and all other coils that do not have a secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

314.2.3.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill, such portions of the appliances, equipment and insulation shall be installed above the flood level rim of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and approved.

314.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

TABLE 314.2.2
CONDENSATE DRAIN SIZING

<u>EQUIPMENT CAPACITY</u>	<u>MINIMUM CONDENSATE PIPE DIAMETER</u>
Up to 20 tons of refrigeration	¾ inch
Over 20 tons to 40 tons of refrigeration	1 inch
Over 40 tons to 90 tons of refrigeration	1¼ inch
Over 90 tons to 125 tons of refrigeration	1½ inch
Over 125 tons to 250 tons of refrigeration	2 inch

For SI: 1 inch = 25.4 mm, 1 ton of capacity = 3.517 kW.

PART D
CHAPTER 4

§1. Section PC 403 of the New York city plumbing code is REPEALED and a new section PC 403 is added to read as follows:

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.

403.1.1 Fixture calculations. Where separate fixture ratios are provided to male and female individually in Table 403.1, the total occupant load shall first be divided in half before the corresponding fixture ratio is applied individually to each sex. Where a single fixture ratio is provided to the total occupant load in Table 403.1, such ratio shall be applied to the total occupant load including both male and female before dividing the resulting number of fixtures equally between male and female. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number. Fixture calculations in Group B office occupancies shall utilize the total occupant load on a given floor to determine the number of fixtures required for that floor.

Exception: The total occupant load shall not be required to be divided in half where approved statistical data indicates a distribution of the sexes of other than 50 percent of each sex.

403.1.2 Family or assisted-use toilet and bath fixtures. Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 of the New York City Building Code are permitted to

be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

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 dwelling units and sleeping units.
2. In structures or tenant spaces where combined employee and public toilet facilities are provided in accordance with Section 403.3, separate facilities shall not be required where the total number of employees, customers, patrons and visitors is 30 or fewer.
3. In structures or tenant spaces where required toilet facilities for only employee use are provided in accordance with Section 403.3, separate facilities shall not be required where the total number of employees is 30 or fewer.
4. In structures or tenant spaces where required toilet facilities for only public use are provided in accordance with Section 403.3, separate facilities shall not be required where the total number of customers, patrons and visitors is 30 or fewer.

403.3 Required employee and public toilet facilities. Employees shall be provided with toilet facilities in all occupancies. The number of plumbing fixtures located within the required employee toilet facilities shall be provided in accordance with Section PC 403 for all employees. Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. The number of plumbing fixtures located within the required public toilet facilities shall be provided in accordance with Section PC 403 for all customers, patrons and visitors. Employee and public toilet facilities may be separate or combined. Where combined facilities are provided, the number of plumbing fixtures shall be in accordance with Section PC 403 for all users.

Exception: Public utilization of toilet facilities shall not be required for:

1. Food service establishments, as defined in Section 81.03 of the New York City Health Code, with a seating capacity of less than 20, provided such establishments are less than 10,000 square feet (929 m²).
2. Establishments less than 10,000 square feet (929 m²) classified as Occupancy Group B or M pursuant to Sections 304.1 and 309.1 of the New York City Building Code, respectively, provided however that this exception shall not apply to a building or nonaccessory tenant space used for assembly purposes by fewer than 75 persons and classified as Group B occupancy in accordance with Section 303.1, Exception 2 of the New York City Building Code.

403.3.1 Access. The route to the public toilet facilities required by Section 403.3 shall not pass through kitchens, storage rooms or closets. Access to the required facilities shall be from within the building or from the exterior of the building. All routes shall comply with the accessibility requirements of the New York City Building Code. Employees, customers, patrons and visitors shall have access to the required toilet facilities at all times that the building is occupied.

403.3.2 Location of toilet facilities in occupancies other than covered malls. In occupancies other than covered mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum travel distances to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum travel distance are approved by the department.

403.3.3 Location of toilet facilities in covered malls. In covered mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 300 feet (91 440 mm). In covered mall buildings, the required facilities shall be based on total square footage, and 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 central toilet facilities in covered mall buildings shall be measured from the main entrance of any store or tenant space. In covered mall buildings, where employees' toilet facilities are not provided in the individual store, the maximum travel distance shall be measured from the employees' work area of the store or tenant space.

403.3.4 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.

403.4 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.

403.4.1 Directional signage. Directional signage indicating the route to the public facilities shall be posted in accordance with Section BC 1110 of the New York City Building Code. Such signage shall be located in a corridor or aisle, at the entrance to the facilities for customers, patrons, and visitors.

TABLE 403.1

MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a

(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY ^b	DESCRIPTION	WATER CLOSETS (SEE SECTION 419)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410.1) ^{g,h}	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	A-1 ^d	Theaters and other buildings for the performing arts and motion pictures	1 per 70 for first 210 and per 125 for remainder exceeding	1 per 35 for first 210 and per 65 for remainder exceeding	1 per 200			1 per 500	1 service sink

		A-2 ^d	Nightclubs, bars ^a , taverns, dance halls and buildings for similar purposes	1 per 75 f	1 per 40 f	1 per 75	=	1 per 500	1 service sink
			Restaurants ^b , banquet halls and food courts	1 per 75	1 per 75	1 per 200	=	1 per 500	1 service sink
		A-3 ^d	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 70 f first 210 f per 125 f remainder exceeding	1 per 35 f first 210 f per 65 f remainder exceeding	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.	1 per 150	1 per 75	1 per 200	=	1 per 1,000	1 service sink
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 f first 1,500 f 1 per 120 f the remainder exceeding 1,500	1 per 40 f first 1,500 f 1 per 60 f the remainder exceeding 1,500	1 per 200	1 per 150	1 per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 f first 1,500 f 1 per 120 f the remainder exceeding 1,500	1 per 40 f first 1,520 f 1 per 60 f the remainder exceeding 1,520	1 per 200	1 per 150	1 per 100	1 service sink
2	Business	B ^k	Buildings for the transaction of business, professional services, other services including merchandise, office buildings, banks, light industrial and similar uses	No. of persons sex fixtures 1-20 45 1-100 5 141-190 for each additional 5	No. of persons sex fixtures 1-20 46-70 4 191-240 for each additional 5	No. of persons sex fixtures 1-25 120 75 3 76-115 4 116-150 6 for each additional 5	=	1 per 100	1 service sink
3	Educational	E	Educational facilities	1 per 50		1 per 50	=	1 per 100	1 service sink
4	Factory and industrial	F-1 and F-2	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

(continued)

TABLE 403.1-continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY ^f	DESCRIPTION	WATER CLOSETS URINALS (SEE SECTION 419.2)		LAVATORIES		BATHTUBS/SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410.1) ^{gd}	OTHER
				MALE	FEMALE	MALE	FEMALE			
5	Institutional	I-1	Residential care	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		I-2	Hospital ambulatory nursing home patients	1 per room ^e		1 per room ^e		1 per 15	1 per 100	1 service sink per floor
			Employees, other than residential care ^b	1 per 25		1 per 35			1 per 100	=
			Visitors, other than residential care	1 per 75		1 per 100			1 per 500	=

		I-3	Prisons ^b	1 per cell	1 per cell	1 per 15	1 per 100	1 service sink
			Reformatories, detention centers and correctional centers	1 per 15	1 per 15	1 per 15	1 per 100	1 service sink
			Employees ^b	1 per 25	1 per 35	-	1 per 100	-
		I-4	Adult day care and Childcare	1 per 15	1 per 15	1 per 15	1 per 100	1 service sink
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500	1 per 750	-	1 per 1,000	1 service sink
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per guestroom	1 per guestroom	1 per guestroom	-	1 service sink
		R-1	Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink
		R-2	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 ^e
		R-3	One- and two-family dwellings	1 per dwelling unit	1 per dwelling unit	1 per dwelling unit	-	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit ^e
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink
8	Storage	S-1 and S-2	Structures for the storage of goods, warehouses, storehouse and freight depots. Low and moderate hazard	1 per 100	1 per 100	See Section 411	1 per 1,000	1 service sink

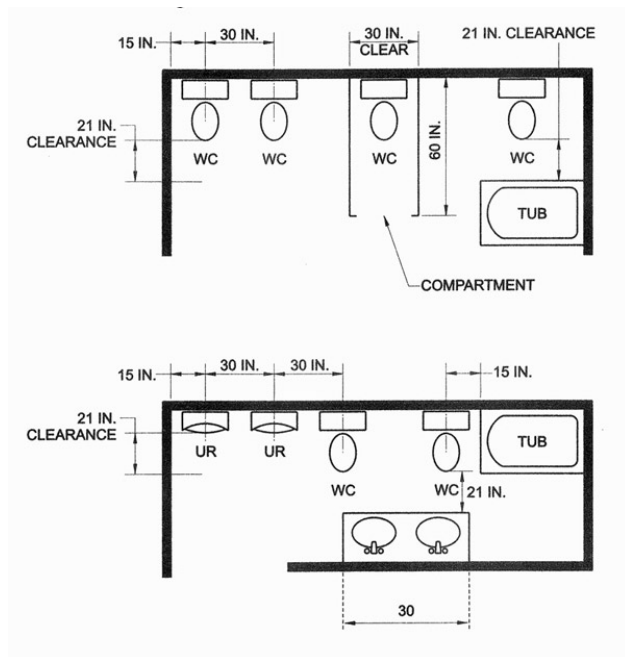
- a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated. Any fraction of the number of persons requires an additional fixture. The number of occupants shall be determined by the New York City Building Code.
- b. Toilet facilities for employees shall 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 sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
- d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
- e. The minimum number of required drinking fountains shall comply with Table 403.1 and Chapter 11 of the New York City Building Code.
- f. Drinking fountains are not required for an occupant load of 15 or fewer.
- g. For the purposes of this table only, "Bar" shall mean a business establishment or a portion of a nonprofit 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 occupants for a single establishment comprising of 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.
- k. The number of fixtures for building or nonaccessory tenant space used for assembly purposes by fewer than 75 persons and classified as Group B occupancy in accordance with 303.1, Exception 2 of the New York City Building Code shall be permitted to be calculated in accordance with the requirements for Assembly occupancies.

§2. Section 405.3.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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, lavatory or bidet to any wall, fixture or door. Water closet compartments shall not be less than 30 inches (762 mm) wide [or] and 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



[FIGURE 405.3.1
FIXTURE CLEARANCE]
For SI: 1 inch = 25.4 mm

§3. Section 405.4 of the New York city plumbing code, as added by local law number 99 for the

year 2005, is amended to read as follows:

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] closet carrier fitting. The water closet shall be bolted to the [hanger] carrier with corrosion-resistant bolts or screws. Joints shall be sealed with an approved elastomeric gasket, wax ring seal, flange-to-fixture connection complying with ASME A112.4.3 or an approved setting compound [conforming to FS TT-P-1536A].

§4. Section 405.4.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] structure 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.

§5. Section 406.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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. Automatic clothes washers that discharge by gravity shall be permitted to drain to a waste receptor or an approved trench drain.

§6. Section 407.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

407.2 Bathtub waste outlets. Bathtubs shall have waste outlets a minimum of 1[5] 1/2 inches (38 mm) in diameter. The waste outlet shall be equipped with an approved stopper, and a built-in overflow shall be provided.

§7. Section 408.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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]Section 608.13.1, 608.13.2, 608.13.3, 608.13.5, 608. 13.6 or 608.13.8.

§8. The New York city plumbing code is amended by adding a new section 408.3 to read as

follows:

408.3 Bidet water temperature. The discharge water temperature from a bidet fitting shall be limited to a maximum temperature of 110°F (43°C) by a water temperature limiting device conforming to ASSE 1070.

§9. Sections 412.1 and 412.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

412.1 Approval. Floor drains shall conform to [ASME A112.6.3, ASME A1 12.3.1] ASME A112.3.1, ASME A112.6.3 or CSA B79. Trench drains shall comply with ASME A112.6.3.

412.2 Floor [drain trap and strainer] drains. Floor [drain traps] drains 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. Ready access shall be provided to floor drains.

Exception: Floor drains serving refrigerated display cases shall be provided with access.

§10. Section 413.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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. Food waste grinders shall be permitted only within dwelling units.

§11. Section 416.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

416.3 Lavatory waste outlets. Lavatories shall have waste outlets not less than [1.25] 1 1/4 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. Where a stopper is utilized, a built-in overflow shall be provided.

§12. The New York city plumbing code is amended by adding a new section 416.5 to read as follows:

416.5 Tempered water for public hand-washing facilities. Tempered water shall be delivered from public hand-washing facilities. Tempered water shall be delivered through an approved water-temperature limiting device that conforms to ASSE 1016 or ASSE 1070 or CSA B 125.3.

Exception: Where point of use heaters are installed, outlet water temperature shall be regulated to provide tempered water.

§13. Sections 417.2 and 417.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

417.2 Water supply riser. [Every water] Water supply [riser] risers from the shower valve to the shower head outlet, whether exposed or [not] concealed, shall be attached to the structure [in an approved manner]. The attachment to the structure shall be made by the use of support devices designed for use with the specific piping material or by fittings anchored with screws.

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 $[0.25]^{1/4}$ 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.

§14. The New York city plumbing code is amended by adding a new section 417.4.2 to read as follows:

417.4.2 Access. The shower compartment access and egress opening shall have a minimum clear and unobstructed finished width of 22 inches (559 mm). Shower compartments required to be designed in conformance to accessibility provisions shall comply with Section 404.1.

§15. The New York city plumbing code is amended by adding new sections 417.5.1 and 417.5.2 to read as follows:

417.5.1 Support. Floors or receptors under shower compartments shall be laid on, and supported by, a smooth and structurally sound base.

417.5.2 Shower lining. Floors under shower compartments, except where prefabricated receptors have been provided, shall be lined and made watertight utilizing material complying with Sections 417.5.2.1 through 417.5.2.5. Such liners shall turn up on all sides at least 2 inches (51 mm) above the finished threshold level. Liners shall be recessed and fastened to an approved backing so as not to occupy the space required for wall covering, and shall not be nailed or perforated at any point less than 1 inch (25 mm) above the finished threshold. Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) and shall be sloped toward the fixture drains and be securely fastened to the waste outlet at the seepage entrance, making a water-tight joint between the liner and the outlet. The completed liner shall be tested in accordance with Section 312.9.

Exceptions:

1. Floor surfaces under shower heads provided for rinsing laid directly on the ground are not required to comply with this section.
2. Where a sheet-applied, load-bearing, bonded, waterproof membrane is installed as the shower lining, the membrane shall not be required to be recessed

417.5.2.1 PVC sheets. Plasticized polyvinyl chloride (PVC) sheets shall be a minimum of 0.040 inch (1.02 mm)

thick, and shall meet the requirements of ASTM D 4551. Sheets shall be joined by solvent welding in accordance with the manufacturer's installation instructions.

417.5.2.2 Chlorinated polyethylene (CPE) sheets. Nonplasticized chlorinated polyethylene sheet shall be a minimum 0.040 inch (1.02 mm) thick, and shall meet the requirements of ASTM D 4068. The liner shall be joined in accordance with the manufacturer's installation instructions.

417.5.2.3 Sheet lead. Sheet lead shall not weigh less than 4 pounds per square foot (19.5 kg/m²) coated with an asphalt paint or other approved coating. The lead sheet shall be insulated from conducting substances other than the connecting drain by 15-pound (6.80 kg) asphalt felt or its equivalent. Sheet lead shall be joined by burning.

417.5.2.4 Sheet copper. Sheet copper shall conform to ASTM B 152 and shall not weigh less than 12 ounces per square foot (3.7 kg/m²). The copper sheet shall be insulated from conducting substances other than the connecting drain by 15-pound (6.80 kg) asphalt felt or its equivalent. Sheet copper shall be joined by brazing or soldering.

417.5.2.5 Sheet-applied, load-bearing, bonded, waterproof membranes. Sheet-applied, load-bearing, bonded, waterproof membranes shall meet requirements of ANSI A118.10 and shall be applied in accordance with the manufacturer's installation instructions

§16. Section 419.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

419.1 Approval. Urinals shall conform to ANSI Z124.9, ASME A112.19.2M, CSAB45.1 or CSAB45.5. Urinals shall conform to the water consumption requirements of Section 604.4. [Urinals] Water-supplied urinals shall conform to the hydraulic performance requirements of ASME A112.19.6, CSA B45.1 or CSA B45.5.

§17. The New York city plumbing code is amended by adding a new section 419.4 to read as follows:

419.4 Waterless urinals. Approved waterless urinals may be utilized only as part of an approved building water conservation plan.

§18. Section 421.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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.]

§19. Section 421.5 of the New York city plumbing code, as added by local law number 99 for the year 2005, is renumbered to be 421.6 and a new section 421.5 is added to read as follows:

421.5 Access to pump. Access shall be provided to circulation pumps in accordance with the fixture or pump manufacturer's installation instructions. Where the manufacturer's instructions do not specify the location and minimum size of field-fabricated access openings, a 12-inch by 12-inch (305 mm by 305 mm) minimum sized opening shall be installed to provide access to the circulation pump. Where pumps are located more than 2 feet (609 mm) from

the access opening, an 18-inch by 18-inch (457 mm by 457 mm) minimum sized opening shall be installed. A door or panel shall be permitted to close the opening. In all cases, the access opening shall be unobstructed and of the size necessary to permit the removal and replacement of the circulation pump.

§20. Section PC 424 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 ASME A112.18.2/CSA B125.2, ASTM F409 or 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] ASME A112.18.1 or CSA B125.1. Hand-held showers shall provide backflow protection in accordance with ASME A112.18.1 or CSA B125.1 or shall be protected against backflow by a device complying with ASME A112.18.3.

424.3 [Shower] Individual shower and tub valves. [Shower] Individual 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 ASME A112.18.1/CSA B125.1 and shall be installed at the point of use. [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 Multiple (gang) showers. Multiple (gang) showers supplied with a single-tempered water supply pipe shall have the water supply for such showers controlled by an approved automatic temperature control mixing valve that conforms to ASSE 1069 or CSA B125, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve that conforms to ASSE 1016 or CSA B125 and is installed at the point of use. Such valves 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.

424.5 Bathtub and whirlpool bathtub valves. The hot water supplied to bathtubs and whirlpool bathtubs shall be limited to a maximum temperature of 120°F (49°C) by a water-temperature limiting device that conforms to ASSE 1016 or ASSE 1070 or CSA B125.3, except where such protection is otherwise provided by a combination tub/shower valve in accordance with Section 424.3.

424.[4]6 Hose-connected outlets. Faucets and fixture fittings with hose-connected outlets shall conform to ASME [A1 12. 18.3M] A112.18.3M or CSA B125.

424.[5]7 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]8 Transfer valves. Deck-mounted bath/shower transfer valves containing an integral atmospheric vacuum breaker shall conform to the requirements of ASME A112.18.7.

PART E

CHAPTER 5

§1. Section PC 502 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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. All water heaters shall conform to the New York City Energy Conservation Code.

502.1.1 Elevation and protection. Elevation of water heater ignition sources and mechanical damage protection requirements for water heaters shall be in accordance with the New York City Mechanical Code and 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.

502.5 Clearances for maintenance and replacement. Appliances shall be provided with access for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances or any other piping or ducts not connected to the appliance being inspected, serviced, repaired or replaced. A level working space at least 30 inches deep and 30 inches wide (762mm by 762mm) shall be provided in front of the control side to service an appliance.

§2. Section 504.6 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

504.6 [Relief outlet waste. The outlet of a pressure, temperature or other relief valve shall not be directly connected to the drainage system.] **Requirements for discharge piping.** The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge in a manner that does not cause personal injury or structural damage.
6. Discharge to a termination point that is readily observable by the building occupants.
7. Not be trapped.
8. Be installed so as to flow by gravity.
9. Not terminate more than 6 inches (152 mm) above the floor or waste receptor.
10. Not have a threaded connection at the end of such piping.
11. Not have valves or tee fittings.
12. Be constructed of those materials listed in Section 605.4 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.

[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 605.4 or shall be tested, rated and approved for such use in accordance with ASME A1 12.4.1. Piping from safety pan drains shall be of those materials listed in Table 605.4.]

§3. Section 504.7 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] material thickness of not less than 0.0236 inch (0.6010mm) (No.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 $3/4$ inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4.

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 at a point that is readily observable by the building occupants.

§4. Section 505.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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)] to a minimum of $R-12.5$ ($\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}$)/Btu ($R-2.2$ $\text{m}^2 \cdot \text{K/W}$).

PART F

CHAPTER 6

§1. Section 603.2.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 (3048mm) and shall meet all [New

York city department of environmental protection] Department of Environmental Protection requirements.

§2. Section 604.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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.]

§3. Table 604.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**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)
Bathub, <u>no shower</u>	4	[8] <u>20</u>
Bathub with anti-scald protection	4	<u>20</u>
Bidet	[2] <u>1.5</u>	[4] <u>20</u>
Combination fixture	4	8
Dishwasher, residential	2.75	8
Drinking fountain	0.75	8
Laundry tray	4	8
Lavatory	2	8
Lavatory (self closing)	<u>2</u>	<u>20</u>
Lavatory (sensor)	<u>2</u>	<u>20</u>
Shower	3	8
Shower, [temperature controlled] balanced-pressure, thermostatic or combination balanced-pressure/thermostatic mixing valve	3	20
Sillcock, hose bibb	5	8
Sink, residential	2.5	8
Sink, service	3	8
Urinal, valve	[15] <u>18</u>	[15] <u>20</u>
Water closet, blow out, flushometer valve	[35] <u>25</u>	[15] <u>25</u>
Water closet, flushometer tank	[1.6] <u>3</u>	[15] <u>20</u>
Water closet, siphonic, flushometer valve	25	[15] <u>25</u>
Water closet, tank, close [C]e coupled	3	[8] <u>15</u>
Water closet, tank, one piece	[6] <u>3</u>	20

For SI: 1 pound per square inch = 6.895 kPa,
1 gallon per minute = 3.785 L/m.

- a. For additional requirements for flow rates and quantities, see Section 604.4.
- b. Minimum pressures as per manufacturer’s recommendations.

§4. Table 604.4 of the New York city plumbing code, as amended by local law number 57 for the year 2010, is amended to read as follows:

**TABLE 604.4
MAXIMUM FLOW RATES AND CONSUMPTION FOR
PLUMBING FIXTURES AND FIXTURE FITTINGS**

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Lavatory, private	1.5 gpm at 60 psi
Lavatory, public, ([metering] self-closing)	0.25 gallon per metering cycle
[Lavatory, public (other than metering)]	[0.5 gpm at 60 psi]
Shower head ^a	2.0 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	0.5 gallon per flushing cycle
Water closet	1.28 gallons per flushing cycle or equivalent dual flush ^c

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m,
1 pound per square inch = 6.895 kPa.

- a. A hand-held shower spray is a shower head.
- b. Consumption tolerances shall be determined from referenced standards.
- c. A dual flush water closet where one third of the sum of the high flush volume plus twice the low flush volume is less than or equal to 1.28 gallons per flush.

§5. Table 604.5 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**TABLE 604.5
MINIMUM SIZES OF FIXTURE WATER SUPPLY PIPES**

FIXTURE	MINIMUM PIPE SIZE (inch)
Bathtubs ^a :(60"×32"and smaller)]	1/2
[Bathtubs ^a :(larger than 60"×32")]	[1/2]
Bidet	3/8
Combination sink and tray	1/2
Dishwasher, domestic ^a]	1/2
Drinking fountain	3/8
Hose bibs	1/2

Kitchen sink ^[a]	1/2
Laundry, 1, 2 or 3 compartment ^[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.

§6. Sections 604.9 and 604.10 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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 WH 201].

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.

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.] **Reserved.**

§7. Sections 605.3 through 605.9 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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 service piping shall be cement mortar lined in accordance

with AWWA C 104.] The sub-surface portion of water service pipe shall conform to one of the standards listed in the rules of the Department of Environmental Protection.. The above-ground portion of water service pipe shall be metal and conform to one of the standards listed in Table 605.4.

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.] **Underground water distribution pipe.** Underground water distribution pipe shall conform to NSF 61 and shall conform to one of the standards listed in Table 605.3.

**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] comply with the [respective pipe standards or one of the] applicable standards listed in Table 605.5. All pipe fittings utilized in water supply systems shall also [conform to] comply with 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 C 104.

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] ¼ 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
Brass	ASTM B62
Cast-iron	ASME B 16.4; ASME B 16.12
Copper or copper alloy	ASSE 1061; ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B 16.26; ASME B 16.29
Gray iron and ductile iron	AWWA C110; AWWA C153
Stainless steel (Type 304/304L)	ASTM A 312; ASTM A 778
Stainless steel (Type 316/316L)	ASTM A 312; ASTM A 778; A403/A403M
[Steel]	[ASME B 16.9; ASME B16. 11; ASME B 16.28]

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 (610mm), shall be used in exposed locations only and shall be used singularly; that is, two connectors cannot be joined.

605.7 Valves. All valves shall be of [the] an 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
Stainless steel	ASTM A403/[A405M] A403M

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.

§8. Section 605.15.3 of the New York city plumbing code, as amended by local law number 71 for the year 2009, is amended to read as follows:

605.15.3 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions and [in conformance with acceptance criteria established by the commissioner] shall be tested, designed and evaluated in accordance with IAPMO PS 117, ICC-ES PMG LC 1002 AND ASSE 1061.

§9. Sections 605.22 through 606.5.8 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

605.22 Reserved.

605.[22] 23 Stainless steel. Joints between stainless steel pipe and fittings shall comply with Sections 605.2[2]3.1 and 605.2[2]3.2.

605.[22] 23.1 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.[22] 23.2 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] 24 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 605.2[3]4.1 and 605.2[3]4.3. 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] 24.1 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 or a dielectric union conforming to ASSE 1079. 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] 24.2 Reserved.

605.[23] 24.3 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 or a dielectric union conforming to ASSE 1079.

SECTION PC 606

INSTALLATION OF THE BUILDING WATER

DISTRIBUTION SYSTEM

606.1 Location of [full-open] shutoff valves. [Full-open] Shutoff valves shall be installed in the following locations:

- [1. On the building water service pipe from the public water supply near the curb.]
- [2.] 1. On the water distribution supply pipe at the entrance into the structure.
- [3.] 2. On the supply and discharge side of every water sub-meter.
- [4.] 3. 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.] 4. On the top of every water down-feed pipe and on the base of every up-feed pipe in occupancies other than one- and two-family residential occupancies.
- [6.] 5. On the entrance to every water supply pipe to a dwelling unit, except where supplying [a single] fixtures equipped with individual stops.
- [7.] 6. On the water supply pipe to and from a gravity or pressurized water tank.
- [8.] 7. On the water supply pipe to every water heater.
8. On the water supply pipe to each sillcock.
9. On the water supply pipe to each appliance or mechanical equipment.

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.] **Reserved.**

606.3 Access to valves. [Access] Ready 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). All water supply tanks shall be equipped with a lockable cover to prevent access by unauthorized persons or vermin. Such cover shall be tamper-proof and equipped with a local alarm.

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 (3.18 mm).

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. All roof tanks shall be equipped with a high water level alarm, at or slightly below the overflow, designed to activate when the ball cock, automatic supply valve, or emergency electrical cut-off fails.

**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

For SI: 1 inch = 25.4 mm.

TABLE 606.5.4(2)
SIZE OF WEIRS FOR GRAVITY AND SUCTION TANKS
[See Figure 606.5.4 (Overflow Weir)]

SLOTTED WEIR OPENING INTO TANK BETWEEN OVERFLOW CHAMBER AND WATER COMPARTMENT ^a	MAXIMUM GPM ALLOWABLE FOR WEIR
3 inches × 24 inches	381
3 1/2 inches × 24 inches	475
4 1/2 inches × 24 inches	685
4 1/2 inches × 36 inches	1,037
6 inches × 36 inches	1,569
6 inches × 48 inches	2,100

For SI: 1 inch = 25.4 mm.

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).]

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] Manholes of potable water [pressure] tanks shall not be located directly under any soil or waste piping or any source of contamination.

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.

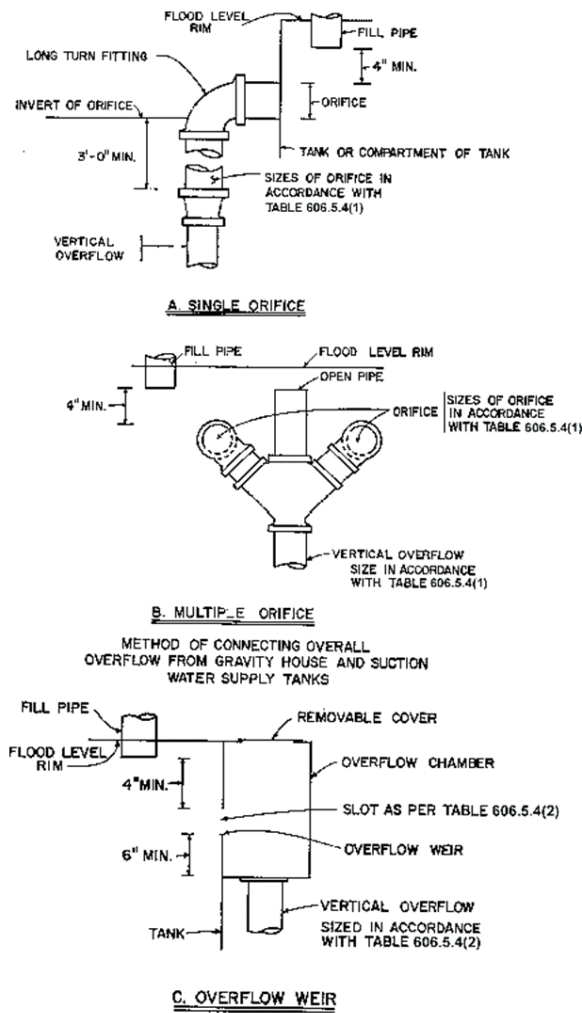


FIGURE 606.5.4

METHODS OF CONNECTING OVERFLOW FROM GRAVITY

HOUSE AND SUCTION WATER SUPPLY TANKS

606.5.4.5 Cleaning or painting. Water tanks shall be cleaned and painted in accordance with the

following:

[1.] **606.5.4.5.1 Prohibited materials.** 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.] **606.5.4.5.2 Disinfection.** 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.] **606.5.4.5.3 Maintenance schedule.** 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 Reserved.

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.

§10. Section 606.7 of the New York city plumbing code, as added by local law number 56 for the year 2010, is amended to read as follows:

606.7 Water sub-meters required. Water distribution pipe lines serving a commercial cooking facility, commercial laundry facility or commercial gym or spa shall be equipped with at least one water sub-meter to

measure the amount of water supplied through such lines to the water using equipment within such facility, gym or spa. [Such water sub-meter shall be equipped with an electronic encoder with absolute or pulse-based output.] Makeup water lines serving an evaporative cooling tower or swimming pool shall be equipped with at least one water sub-meter to measure the amount of water supplied through such lines to such cooling tower or swimming pool. [Such water sub-meter] Water sub-meters shall be [equipped with an electronic encoder with absolute or pulse-based output] those models recommended for billing purposes in the “Guide to Water Sub-meters” published by the Department of Environmental Protection or as otherwise provided in the rules of the department.

Exception. Swimming pools accessory to Group R-3 occupancies.

§11. The New York city plumbing code is amended by adding a new section 606.8 to read as follows:

606.8 Pressure tanks. Tank systems containing water and air in combination under pressure exceeding 15 psi (103.4 kPa) above atmospheric pressure, where the pressure is supplied and maintained by pumps connected directly to the tanks, shall comply with the requirements of this section.

606.8.1 Design requirements. The pressure tank system shall be designed by a registered design professional. An application for a permit and plans shall be filed with the department. The plans and application shall contain, but not be limited to:

1. Size and location of high pressure tanks;
2. The operating pressures and temperatures; and
3. The location, type and specifications of pressure relief valves.

606.8.2 Location requirements. All high pressure tanks shall be located at least 5 feet (1524 mm) horizontally from a gas service or distribution line or its vertical projection upon the floor.

606.8.3 Required separation. All pressure tanks shall be located in rooms separated from gas service or distribution lines by fire-resistance rated enclosures.

§12. Section 607.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 purposes. 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] supplied through a water temperature limiting device that conforms to ASSE 1070 and shall limit the tempered water to a maximum of 110°F (43°C). This provision shall not supersede the requirement for protective shower valves in accordance with Section 424.3.

§13. Section 607.2 of the New York city plumbing code, as amended by local law number 85

for the year 2009, is amended to read as follows:

607.2 Hot water supply temperature maintenance. Where the developed length of hot or tempered water piping from the source of hot water supply to the farthest fixture exceeds 20 feet (6096mm), the hot water supply system shall be provided with a method of maintaining the temperature in accordance with the New York City Energy Conservation Code.

§14. Sections 607.2.2 and 607.4 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

607.2.2 Hot water system controls. Automatic circulating hot water system pumps or [heat trace] temperature maintenance cable shall be arranged to be conveniently turned off, automatically or manually, when the hot water system is not in operation.

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 or ASME A112.18.1/CSA B125.1, where the flow of hot water corresponds to the markings on the device.

§15. Table 608.1 of the New York city plumbing code is REPEALED and a new table 608.1 is added to read as follows:

TABLE 608.1
APPLICATION OF BACKFLOW PREVENTERS

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 B 125.3
Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes $\frac{1}{4}$ - $\frac{3}{8}$.	ASSE 1022
Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes $\frac{1}{4}$ - $\frac{3}{4}$.	ASSE 1012, CAN/CSA B64.3
Barometric loop	High or low hazard	Backsiphonage only	(See Section 608.13.4)
Double check backflow prevention assembly [and double check fire protection backflow prevention assembly]	Low hazard	Backpressure or backsiphonage Sizes $\frac{3}{8}$ -12	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1
Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or systems) Sizes 2-12	ASSE 1048
Dual-check-valve-type backflow preventer	Low hazard	Backpressure or backsiphonage Sizes $\frac{1}{4}$ -1.	ASSE 1024, CSA B64.6

Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure, backpressure or backsiphonage Sizes ^{1/2-1} .	ASSE 1052, CSA B64.2.1.1
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, CSA B64.2.1
Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and Backsiphonage	ASSE 1035, CSA B64.7
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, CSA B64.1.2
Reduced pressure principle backflow preventer [and reduced pressure principle fire protection backflow preventer]	High or low hazard	Backpressure or backsiphonage Sizes ^{3/8- 12}	ASSE 1013, AWWA C511, CAN/CSA B64.4, CSA B64.4.1
Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backsiphonage or backpressure (Fire sprinkler systems)	ASSE 1047
Spillproof vacuum breaker	High or low hazard	Backsiphonage only Backs Sizes ^{1/4-2} .	ASSE 1056
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

Sizes listed in inches. For SI: 1 inch = 25.4 mm.

a. Low hazard.

High hazard-See Contamination (Section 202).

b. See Backpressure (Section 202).

See Backpressure, low head (Section 202).

See Backsiphonage (Section 202).

§16. Sections 608.1 through 608.16.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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.

608.2 Plumbing fixtures. The supply lines or fittings for every plumbing fixture shall be installed so as to prevent backflow. Plumbing fixture fittings shall provide backflow protection in accordance with ASME A112.18.1.

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.] **Valves and outlets prohibited below grade.** Potable water outlets and combination stop-and-waste valves shall not be installed underground or below grade. Freeze-proof yard hydrants that drain the riser into the ground are considered to be stop-and-waste valves.

Exception: Freeze-proof yard hydrants that drain the riser into the ground shall be permitted to be installed, provided that the potable water supply to such hydrants is protected upstream of the hydrants in accordance with Section 608 and the hydrants are permanently identified as nonpotable outlets by approved signage that reads as follows: “Caution, Nonpotable Water. Do Not Drink.”

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 [,] systems are installed, [each system] the piping conveying the nonpotable water shall be identified either by color marking or metal tags in accordance with Sections 608.8.1 through 608.8.3. All nonpotable water outlets such as hose connections, open ended pipes, and faucets shall be identified at the point of use for each outlet with the words, “Caution. Nonpotable Water. Do Not Drink.” The words shall be indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches in height and color in contrast to the background on which they are applied.

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 where the piping is located.

608.8.2 Color. The color of the pipe identification shall be discernable and consistent throughout the building. The color purple shall be used to identify recycled, rain and gray water distribution systems.

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)
1/4 to 1 1/4	8	0.5
1 1/2 to 2	8	0.75
2 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 secondary 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] or CSA B 64.4.1. 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 New York State certified tester employed by a New York City licensed plumber.

608.13.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012 or CAN/CSA B64.3. 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 (10668mm). 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] or CSA B64.1.2. 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, CSA B64.2.1, CSA B64.2.1.1, 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, CSA B64.5, CSA B64.5.1, 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 New York State certified tester employed by a New York City licensed plumber.

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.

608.14.2 Protection of backflow preventers. Backflow preventers shall not be located in areas subject to freezing except where they can be removed by means of unions or are protected from freezing by heat, insulation or both.

608.14.2.1 Relief port piping. The termination of the piping from the relief port or air gap fitting of a backflow preventer shall discharge to an approved indirect waste receptor or to the outdoors where it will not cause damage or create a nuisance.

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.

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]10.

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 portion of the backflow preventer device downstream from the second check valve and the piping downstream therefrom shall not be affected by carbon dioxide gas.

§17. Section 608.16.2 of the New York city plumbing code, as amended by local law number 56 for the year 2010, is amended to read as follows:

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. Makeup water lines to [boilers serving buildings greater than six stories] any boiler

with heat input greater than 2.8 million btu/h (820 kW) shall be equipped with at least one water sub-meter to measure the amount of water supplied through such lines to such boilers. [Such water sub-meter] Water sub-meters shall be [equipped with an electronic encoder with absolute or pulse-based output] those models recommended for billing purposes in the “Guide to Water Sub-meters” published by the Department of Environmental Protection or as otherwise provided in the rules of the department.

§18. Sections 608.16.3 through 608.16.10 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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.

Exceptions: Double-wall construction shall not be required for the following:

1. Heat exchangers supplied directly from the Consolidated Edison steam system; and
2. Low-pressure steam-heating boilers.

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.

**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 1/2 inch in diameter	1	1 1/2
Sink, laundry trays, gooseneck back faucets and other fixtures with effective openings not greater than 3/4 inch in diameter	1[.5] 1/2	2[.5] 1/2
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	1 1/2

Effective openings greater than 1 inch	Two times the diameter of effective opening	Three times the diameter of effective opening
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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.

608.16.4.1 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.

608.16.10 Coffee machines and noncarbonated beverage dispensers. The water supply connection to coffee machines and noncarbonated beverage dispensers shall be protected against backflow by a backflow preventer conforming to ASSE 1022 or by an air gap.

§19. Section 612.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

612.1 Solar systems. The construction, installation, alterations and repair of systems, equipment and appliances intended to capture and utilize solar energy for space heating or cooling, domestic hot water heating, swimming pool heating or process heating shall comply with the New York City Mechanical Code and this code.

PART G
CHAPTER 7

§1. Section 701.2 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

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 and where [the department determines that] connection thereto is feasible. Where neither a sanitary nor a combined sewer is available to which [the department determines that] connection is feasible a private sewer or private sewage disposal system shall be provided. [All such private systems shall be provided subject to the approval of the Commissioner of Environmental Protection and of any other agency or agencies having jurisdiction] See Section 106.6.1 of this code for required construction documents relating to provisions for discharge for sanitary sewage.

701.2.1 Extensions of public sanitary or combined sewers. Extensions of public sanitary or combined sewers shall be made in accordance with the regulations of the Department of Environmental Protection.

701.2.2 Availability of public sanitary or combined sewer [to other than one- or two-family dwellings]. [A] The determination as to whether a public sanitary or combined sewer [shall be deemed] is available [to a building if a property line of such building is within 500 feet (152 m), measured along a street, alley, or right-of-way of the public sewer. The connection] shall be made in accordance with the applicable standards of the Department of Environmental Protection.

[**Exception:** Where a substantial improvement of a building or buildings is contemplated on a tract of land, the public sanitary or combined sewer may be declared available thereto by the agencies having jurisdiction thereon even though the specified distance is exceeded.]

[701.2.3 Availability of public sewer to one- or two-family dwellings. A public sanitary or combined sewer shall be deemed available to a one- and two-family dwelling if a property line of such dwelling is within 100 feet (30 480 mm), measured along a street, alley, or right-of-way, of the public sewer. The extension and connection shall be made in accordance with the applicable standards of the Department of Environmental Protection, provided, however, that such one- and two-family dwelling need not connect directly to the public sanitary or combined sewer if the common elements of an internal private drain are located in a dedicated, unobstructed right-of-way that extends to the sanitary or combined sewer with a minimum width of 10 feet located entirely outside of the building footprint and outside of all overhangs and projections that are less than 14 feet in height above grade.

Exception: Where two or more one- or two-family dwellings are to be constructed on a tract of land, the public sanitary or combined sewer may be declared available thereto by the agencies having jurisdiction thereon even though the specified distance is exceeded.]

701.2.[4] 3 Feasibility of connecting to an available sanitary or combined public sewer. The [department shall determine that] determination as to whether connection to an available sanitary or combined public sewer is feasible [if:

1. The sewer is of adequate capacity to receive all sewage flowing from the building;
2. The sewer is in adequate physical condition to receive such sewage;
3. No physical obstacles exist between the boundaries of the lot or tract of land on which the building is located and the sewer, which would make connection to the sewer impracticable;
3. The elevation of the sewer in relation to the lot or tract of land on which the building is located is such that conveyance of the sewage from the building to the sewer is not impracticable;
3. The sewer is located in the same drainage area as all or most of the lot or tract of land on which the building is located; and
3. No other factor reasonably related to the conveyance of sewage from the building to the sewer would make such connection impracticable or undesirable as a proper means of sewage disposal.] shall be in accordance with the applicable standards of the Department of Environmental Protection.

701.2.[5] 4 Where public sewers are made available to premises with private sewage disposal system. When public sewers are made available to premises with individual on- site private disposal systems, such private sewage disposal system shall be abandoned in a manner prescribed by the commissioner, and the owner shall connect the building house sewer to the available public sewer within 6 months of the date of notification that the sewer has been accepted to receive flow by the agency or agencies having jurisdiction.

701.2.[6] 5 Abandonment of existing building sewer connections. All abandoned building sewers shall require plug permits from the Department of Environmental Protection and shall be securely sealed at a point inside the curb line and as close thereto as practicable.

§2. Section 701.3 of the New York city plumbing code, as amended by local law number 18 for the year 2008, is amended to read as follows:

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, provided, however, that the common elements of an internal private drain are located in a dedicated, unobstructed right-of-way that extends to the sewer with a minimum width of 10 feet (3048 mm) located entirely outside of the building footprint and outside of all overhangs and projections that are less than 14 feet (4267 mm) in height above grade.

§3. Section 701.4 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

701.4 Sewage treatment. Sewage or other waste shall not be discharged into surface or subsurface water unless it has been discharged by a method subject to the approval of the commissioner and of the Department of Health and Mental Hygiene [and], the Department of Environmental Protection, and the New York State Department of Environmental Conservation.

§4. Section 701.5 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] Department of Environmental Protection.

§5. Section 701.8 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

701.8 Engineered systems. Engineered sanitary drainage systems shall conform to the provisions of Section 28-113.2.2 of the Administrative Code and Section PC 714 of this code.

§6. Section 701.10 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

701.10 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. Plastic piping and fittings may be used as permitted in Sections PC 803 and PC 804.

§7. Table 702.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**TABLE 702.1
ABOVE-GROUND DRAINAGE AND VENT PIPE**

MATERIAL	STANDARD
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Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall ^a	ASTM D 2661; ASTM F 628; ASTM F 1488; CSA B181.1
Brass pipe	ASTM B 43
Cast-iron pipe	ASTM A 74[; CISPI 301]; ASTM A 888; CISPI 301
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 ^a	ASTM F 1412; ASTM D 2657; CAN/CSA-B 181.3
Polyvinyl chloride (PVC) plastic pipe [(Type DWV)] in IPS diameters, including schedule 40, DR 22 (PS 200), and DR 24 (PS 140); with a solid, cellular core or composite wall ^a	ASTM D 2665; [ASTM D 3311; ASTM F 1866] ASTM F 891; ASTM F 1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall ^a	ASTM D 2949; ASTM F 1488
Polyvinylidene fluoride (PVDF) plastic pipe ^a	ASTM F 1673; CAN/CSA B 181.3
Stainless steel drainage systems, Types 304 and 3 16L	ASME A112.3.1

a. Limited to residential buildings five stories or less in height.

§8. Section 702.4 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] comply with the applicable standards listed in Table 702.4.

§9. Tables 702.2 and 702.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

**TABLE 702.2
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE**

MATERIAL	STANDARD

Cast-iron pipe	ASTM A 74; [CISPI 301;] ASTM A 888; CISPI 301
Copper or copper-alloy tubing (Type K or L)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 306
Ductile iron	AWWA C 151
Nonasbestos fiber cement pipe	ASTM C 1449
[Polyethylene (corrugated 12 inches and larger)]	[ASTM F 667]
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200), and DR 24 (PS 140); with a solid, cellular core or composite wall ^a	ASTM D 2665; ASTM F 891; ASTM F 1488; CSA B181.2
Stainless steel drainage systems, Type 316L	ASME A112.3.1

a. Limited to residential buildings five stories or less in height.

**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
Nonasbestos 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 B 182.2; CAN/CSA B 182.4; CSA B181.2
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C 4; ASTM C 700

a. Limited to residential buildings five stories or less in height.

§10. Table 702.4 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

**TABLE 702.4
PIPE FITTINGS**

MATERIAL	STANDARD

Acrylonitrile butadiene styrene (ABS) plastic pipe [schedule 40] in IPS diameters ^a	[ASTM D 3311; CSA B181.1;] ASTM D 2661; ASTM F 628; CSA B 181.1
Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters	ASTM D 2751
Brass	ASTM B62
Cast iron	ASME B 16.4; ASME B 16.12; ASTM A 74; ASTM A 888; CISPI 301
Copper or copper alloy	ASME B 16.15; ASME B 16.18; ASME B 16.22; ASME B 16.23; ASME B 16.26; ASME B 16.29
Galvanized steel	ASTM A153; ASME B16.3
Glass	ASTM C 1053
[Gray iron and d] Ductile iron	AWWA C 110
High silicon iron	ASTM A 861
Malleable iron	ASME B 16.3
Non-asbestos fiber cement	ASTM C1449
[Polyethylene (corrugated 12 inches and larger]	[ASTM 667]
Polyolefin ^a	CAN/CSAB 181.3; ASTM F 1312; ASTM D 2657
Polyvinyl chloride (PVC) plastic in IPS diameters ^a	[ASTM D 3311;] ASTM D 2665; ASTM F 1866
Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters ^a	ASTM D 3034
Polyvinyl chloride (PVC) plastic pipe with a 3.25- inch O.D. ^a	ASTM D 2949
Polyvinylidene fluoride (PVDF) plastic pipe ^a	ASTM F 1673; CAN/CSA B181.3
Stainless steel drainage systems, Types 304 and 3 16L	ASME A 112.3.1
Vitrified clay pipe	ASTM C425

a. Limited to residential buildings five stories or less in height.

§11. Section 702.6 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

702.6 Lead bends and traps. Lead bends and traps shall not be less than [0.125] 1/8 inch (3.2 mm) wall thickness.

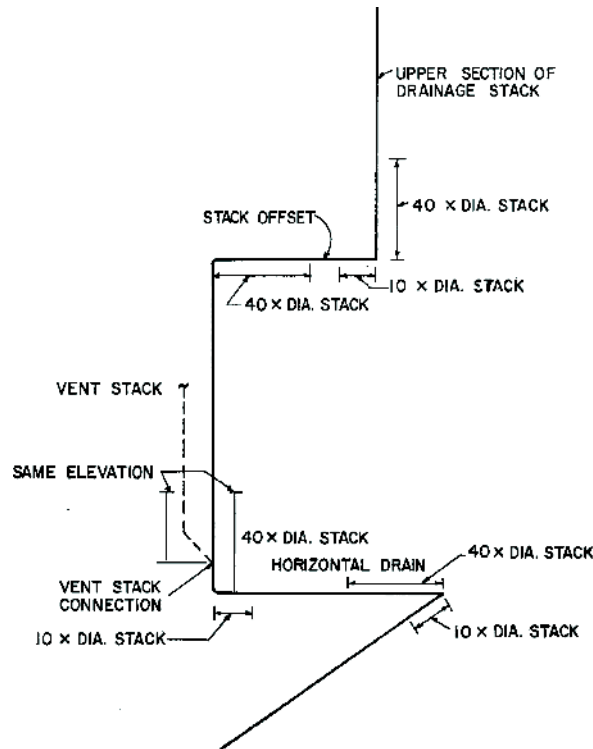
§12. The New York city plumbing code is amended by adding a new section 703.6.1, to read as follows:

703.6.1 Fresh air inlets. Every sanitary or combined building drain equipped with a building trap, sewage pump, ejector, receiving tank, oil separator, or similar equipment, shall be provided with a fresh air inlet pipe connected to the building drain immediately upstream from, and within 4 feet (1219 mm) of, such trap or equipment. Such connection shall be made in the same manner as prescribed in Section PC 905 for vent connections to horizontal drains, and the fresh air inlet pipe shall be extended to the outer air and shall be terminated in an open end at least 6 inches (152 mm) above grade. The open end shall be protected by a perforated metal plate permanently fixed in the mouth of the inlet and having an open ventilating area at least equal to the area of the pipe, or by a return bend with its unprotected open end at least 6 inches (152 mm) above grade, located inside the street line. The size of the fresh air inlet pipe shall be at least one-half the diameter of the building drain at the point of connection, but not less than 3 inches (76 mm).

§13. Items 2 and 3 of section 704.6 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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 10 stack diameters of the base fitting. Where a 60-degree (1.05 rad) or 90-degree (1.57 rad) 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 (1.05 rad) or 90 degrees (1.57 rad), 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.

§14. Figure RS 16-8 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:



[Figure RS 16-8
Suds Pressure Zones]

FIGURE 704.6(2)
SUDS PRESSURE ZONES

§15. Sections 705.5.2 and 705.5.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

705.5.2 Compression gasket joints. Compression gaskets for hub and spigot pipe and fittings shall conform to ASTM C 564 and shall be tested to ASTM C 1563. 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 or ASTM C 1540. 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.

§16. Section 705.11.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] $\frac{1}{8}$ 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.

§17. Section 705.13.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

705.13.2 Wiped. Joints shall be fully wiped, with an exposed surface on each side of the joint not less than [0.75] $\frac{3}{4}$ inch (19.1 mm). The joint shall be at least [0.325] $\frac{3}{8}$ inch (9.5 mm) thick at the thickest point.

§18. Sections 705.16 through 705.20 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

705.16 Polyethylene plastic pipe. Joints between polyethylene plastic pipe and fittings shall be underground and shall comply with Section 705.16.1 or 705.16.2.

705.16.1 Heat-fusion joints. Joint surfaces shall be clean and free from moisture. All joint surfaces shall be cut, heated to melting temperature and joined using tools specifically designed for the operation. Joints shall be undisturbed until cool. Joints shall be made in accordance with ASTM D 2657 and the manufacturer's instructions.

705.16.2 Mechanical joints. Mechanical joints in drainage piping shall be made with an elastomeric seal conforming to ASTM C 1173, ASTM D 3212 or CAN/CSA B602. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

705.17 Polyolefin plastic. Joints between polyolefin plastic pipe and fittings shall comply with Sections 705.17.1 and 705.17.2.

705.17.1 Heat-fusion joints. Heat-fusion joints for polyolefin pipe and tubing joints shall be installed with socket-type heat-fused polyolefin fittings or electrofusion polyolefin fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F 1412 or CAN/CSA B181.3.

705.17.2 Mechanical and compression sleeve joints. Mechanical and compression sleeve joints shall be installed in accordance with the manufacturer's instructions, and in conformance with acceptance criteria established by the commissioner.

705.18 Polyvinylidene fluoride plastic. Joints between polyvinylidene plastic pipe and fittings shall comply with Sections 705.18.1 and 705.18.2.

705.18.1 Heat-fusion joints. Heat-fusion joints for polyvinylidene fluoride pipe and tubing joints shall be installed with socket-type heat-fused polyvinylidene fluoride fittings or electrofusion polyvinylidene fittings and couplings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F 1673.

705.18.2 Mechanical and compression sleeve joints. Mechanical and compression sleeve joints shall be installed in accordance with the manufacturer's instructions, and in conformance with acceptance criteria established by the commissioner.

705.[16]19 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]19.1 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]19.2 Reserved

705.[16]19.3 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]19.4 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]19.5 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]19.6 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]19.7 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]20 Drainage slip joints. Slip joints shall comply with Section 405.8.

705.[18]21 Caulking ferrules. Ferrules shall be of red brass and shall be in accordance with Table 705.[18] 21.

**TABLE 705.[18] 21
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]22 Soldering bushings. Soldering bushings shall be of red brass and shall be in accordance with Table 705.[19] 22.

**TABLE 705.[19] 22
SOLDERING BUSHING SPECIFICATIONS**

PIPE SIZES (inches)	MINIMUM WEIGHT EACH
1¼	6 ounces
1½	8 ounces
2	14 ounces
2½	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]23 Stainless steel drainage systems. O-ring joints for stainless steel drainage systems shall be made with an approved elastomeric seal.

§19. Section 708.3.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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) in the building sewer, building drain and horizontal waste or soil lines. 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.

§20. Section 709.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] 1 ¼ inches (32 mm).

§21. Table 709.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**TABLE 709.1
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS**

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS	MINIMUM SIZE OF TRAP (inches)
Automatic clothes washers, commercial ^{a,g}	3	2

Automatic clothes washers, residential ^g	2	2
Bathroom group as defined in Section 202 (1.6 gpf water closet) ^f	5	-
Bathroom group as defined in Section 202 (water closet flushing greater than 1.6 gpf) ^f	6	-
Bathtub ^b (with or without overhead shower or whirlpool attachments)	2	1½
Bidet	1	[1¼] 1½
Combination sink and tray	2	1½
Dental lavatory	1	[1¼] 1½
Dental unit or cuspidor	1	1¼
Dishwashing machine, ^c domestic	2	1½
Drinking fountain	[0.5] ½	1¼
[Emergency floor drain]	[0]	[2]
Floor drains	2 ^h	[2] 3
Floor sinks	Note h	2
Kitchen sink, domestic	2	[1½] 2
Kitchen sink, domestic with food waste grinder and/or dishwasher	2	[1½] 2
Laundry tray (1 or 2 compartments)	2	[1½] 2
Lavatory	1	[1¼] 1½
Shower	2	[1½] 2
Sink	2	[1½] 2
Urinal	4	Note d
Urinal, 1 gallon per flush or less	2 ^e	Note d
Wash sink (circular or multiple) each set of faucets	2	1½
Water closet, flushometer tank, public or private	4 ^e	Note d
Water closet, private (1.6 gpf)	3 ^e	Note d
Water closet, private (flushing greater than 1.6 gpf)	4 ^e	Note d
Water closet, public (1.6 gpf)	4 ^e	Note d
Water closet, public (flushing greater than 1.6 gpf)	6 ^e	Note d

For SI: 1 inch = 25.4 mm, 1 gallon = 3.785 L.

- a. For traps larger than 3 inches, use Table 709.2.
- b. A showerhead over a bathtub or whirlpool bathtub attachment does not increase the drainage fixture unit value.
- c. 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.
- d. Trap size shall be consistent with the fixture outlet size.
- e. 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.
- f. For fixtures added to a dwelling unit bathroom group, add the DFU value of those additional fixtures to the bathroom group fixture count.

- g. See Section 406.3 for sizing requirements for fixture drain, branch drain, and drainage stack for an automatic clothes washer standpipe.
- h. See Sections 709.4.

§22. Table 710.1(2) of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**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	3,900	[1,500]	6,000	8,400
15	7,000	[Note c]	Note c	Note c

For SI: 1 inch = 25.4 mm.

- 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.]
No soil or waste stack shall be smaller than any horizontal branch connection thereto.
- c. Sizing load based on design criteria.

§23. Section 712.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

712.1 Building subdrains. Building subdrains that cannot be discharged to the sewer by gravity flow shall be discharged into a [tightly] gas tight 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.

§24. Section 712.3.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

712.3.3 Discharge piping. Discharge piping [shall meet the requirements of Section 712.2] and fittings shall be constructed of approved materials.

§25. Section 712.4.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 (25.4mm). 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] 1 ¼ inches (32 mm).
2. Macerating toilet assemblies that serve single water closets shall have a minimum discharge opening of [0.75] ¾ inch (19 mm).

§26. Sections 713.11.2 and 713.11.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] 1 ½ 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] 2 ½ inches (64mm) minimum. Those serving combinations of pressure sterilizer exhaust connections shall be sized in accordance with Table 713.11.3.

PART H
CHAPTER 8

§1. Section 802.1.4 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 to a waste outlet.

§2. The New York city plumbing code is amended by adding a new section 802.1.8, to read as follows:

802.1.8 Food utensils, dishes, pots and pans sinks. Sinks used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or serviceware used in the preparation, serving or eating of food shall discharge indirectly through an air gap or an air break.

Exception: Hand sinks may be directly connected to the drainage system.

§3. Section 803.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

803.2 Neutralizing device required for corrosive wastes. [Corrosive] All discharges into the public sewers are subject to regulation by the Department of Environmental Protection. The Department of Environmental Protection may prohibit the discharge of any corrosive liquids, including but not limited to spent acids or other harmful chemicals that may destroy or injure a drain, sewer, soil or waste pipe, or create noxious or toxic fumes or interfere with sewage treatment processes or may require that such liquids be neutralized or treated prior to discharge in accordance with Department of Environmental Protection regulations. Where treatment prior to discharge is required by the Department of Environmental Protection, liquids 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] compliance with the rules of the Department of Environmental Protection.

PART I

CHAPTER 9

§1. Section 903.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

903.3 Vent termination. [Every vent stack] Vent stacks or stack [vent] vents 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.

§2. Section 907.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] the vented line to which it connects.

§3. Section PC 909 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

SECTION PC 909 WET VENTING

909.1 [Wet] Horizontal wet vent permitted. Any combination of fixtures within one bathroom group located in the same room [are] is permitted to be vented by a horizontal 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. Each wet-vented fixture drain shall connect independently to the horizontal wet vent. Only the fixtures within the bath-room groups shall connect to the wet-vented horizontal branch drain. Any additional fixtures shall discharge downstream of the horizontal 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.

909.2.1 Horizontal wet vent. The dry-vent connection for a horizontal wet-vent system shall be an individual vent or a common vent for any bathroom group fixture, except an emergency floor drain. Where the dry-vent connects to a water closet fixture drain, the drain shall connect horizontally to the horizontal wet-vent system. Not more than one wet-vented fixture drain shall discharge upstream of the dry-vented fixture drain connection.

909.3 Size. The dry vent serving the wet vent shall be sized based on the largest required diameter of pipe within the wet-vent system served by the dry vent. The wet vent shall be a minimum size of 2 inches (51 mm).

§4. Section 916.5.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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. Where a building sump vent connects to a sanitary vent system, the sanitary branch vent shall be at least 3 inches (76 mm) in diameter.

§5. Section 916.5.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

916.5.2 Pneumatic sewage ejector vent. 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 1½ inches (38 mm) in size.

PART J

CHAPTER 10

§1. Sections PC 1002 and 1003 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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) and the horizontal distance shall not exceed 30 inches (762 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The [distance] height 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] interceptor 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).
4. This section shall not apply to outdoor drinking fountains discharging to a drywell.

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, pot, bottle traps and traps with interior partitions.
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] 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. Trap seal primer valves shall connect to the trap at a point above the level of the trap seal. 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, the private sewage disposal system, or the 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] 5.

1003.3.1 Grease [traps and grease] interceptors and automatic grease removal devices required. A grease [trap or grease] interceptor or automatic grease removal device shall be required to receive the [drainage] direct and indirect discharges 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 (including school cafeterias), butcher shops, slaughterhouses, fish markets, supermarket food processing areas, delicatessens, or [restaurants and] clubs. Fixtures and equipment shall include pot sinks, prerinse sinks, soup kettles or similar devices, wok stations, floor drains or sinks into which kettles are drained, food scrap sinks, scraper sinks, scullery sinks, meat and/or poultry and/or fish preparation sinks, automatic hood wash units, and dishwashers with a maximum discharge temperature in compliance with the requirements of the Department of Environmental Protection. Grease interceptors and automatic grease removal devices shall receive waste only from fixtures and equipment that allow fats, oils or grease to be discharged.

[Exception: Fixtures and equipment within dwelling units.]

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.] **Reserved.**

1003.3.3 Grease [trap and grease] interceptors and automatic grease removal devices not required. A grease [trap or a grease] interceptor or an automatic grease removal device shall not be required for individual dwelling units, [or] any private living quarters, or non-culinary schools which only contain residential type stoves and sinks intended for teaching basic home cooking skills.

1003.3.4 Grease [traps and grease] interceptor[s] and automatic grease removal device sizing and standards. Grease [traps and grease] interceptors and automatic grease removal devices shall be sized in accordance with the rules of the Department of Environmental Protection. Grease interceptors and automatic grease removal devices shall [conform to] be designed and tested in accordance with 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] interceptor capacity. Grease [traps] interceptors shall have [the] a grease retention capacity [indicated in Table 1003.3.4.1 for the flow-through rates indicated] in accordance with the rules of the Department of Environmental Protection.

1003.3.4.2 Rate of flow controls. Grease [traps] interceptors 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.]

1003.3.5 Automatic grease removal devices. Where automatic grease removal devices are installed, such devices shall be located downstream of each fixture or multiple fixtures in accordance with the manufacturer’s instructions. The automatic grease removal device shall be sized to pretreat the measured or calculated flows for all connected fixtures or equipment. Ready access shall be provided for inspection and maintenance.

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.

Exception: An oil separator is not required in hydraulic elevator pits where an automatic shut-down system is installed for the prevention of accidental discharge of oil-laden waste water into the sanitary system.

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 (152mm).

1003.6 Laundries. [Commercial laundries] Laundry facilities not installed within an individual dwelling unit or intended for individual family use 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] $\frac{1}{2}$ 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, and for inspection by the department and the Department of Environmental Protection. 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.

PART K

CHAPTER 11

§1. Section PC 1101 of the New York city plumbing code, as amended by local law number 8 for the year 2008, is amended to read as follows:

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] Department of Environmental Protection requirements. Extension requirements from the public storm or combined sewer to the building sewer shall be determined by the Department of Environmental

Protection.

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] the requirements of the Department of Environmental Protection, 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 a public storm or combined sewer. See Section 106.6.2 of this code for required construction documents relating to provisions for discharge for stormwater runoff.

1101.2.1 Increases in existing impervious surfaces. Whenever [an alteration increases] impervious surfaces on the lot are increased [to greater than 20 percent of the impervious surfaces existing when the structure was constructed], such impervious surfaces shall drain into a storm sewer system, or a combined sewer system, or to an approved place of disposal.

Exception: [Where the total area of impervious surfaces proposed to be increased by an alteration, after the effective date of this code is less than or equal to 1,000 square feet (93 m²).] An existing one - or two-family dwelling where the area of a proposed horizontal building enlargement plus any proposed increase in impervious surfaces in total is less than or equal to 200 square feet (19 m²). In such cases, the storm water discharge may be accommodated by existing facilities. For the purposes of this exception, the 200 square feet (19 m²) shall include all enlargements and increases cumulatively after July 1, 2008.

1101.2.2 Availability of public storm or combined sewer. The determination as to whether a public storm sewer or public combined sewer is available to a building shall be made in accordance with applicable requirements of the Department of Environmental Protection.

1101.2.3 Feasibility of connecting to an available public storm or combined sewer. The determination as to whether connection to an available public storm sewer or combined public sewer is feasible shall be made in accordance with applicable requirements of the Department of Environmental Protection.

1101.2.4 Extensions of public storm or combined sewers. Extensions of public storm or combined sewers shall be made in accordance with the rules of the Department of Environmental Protection.

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.

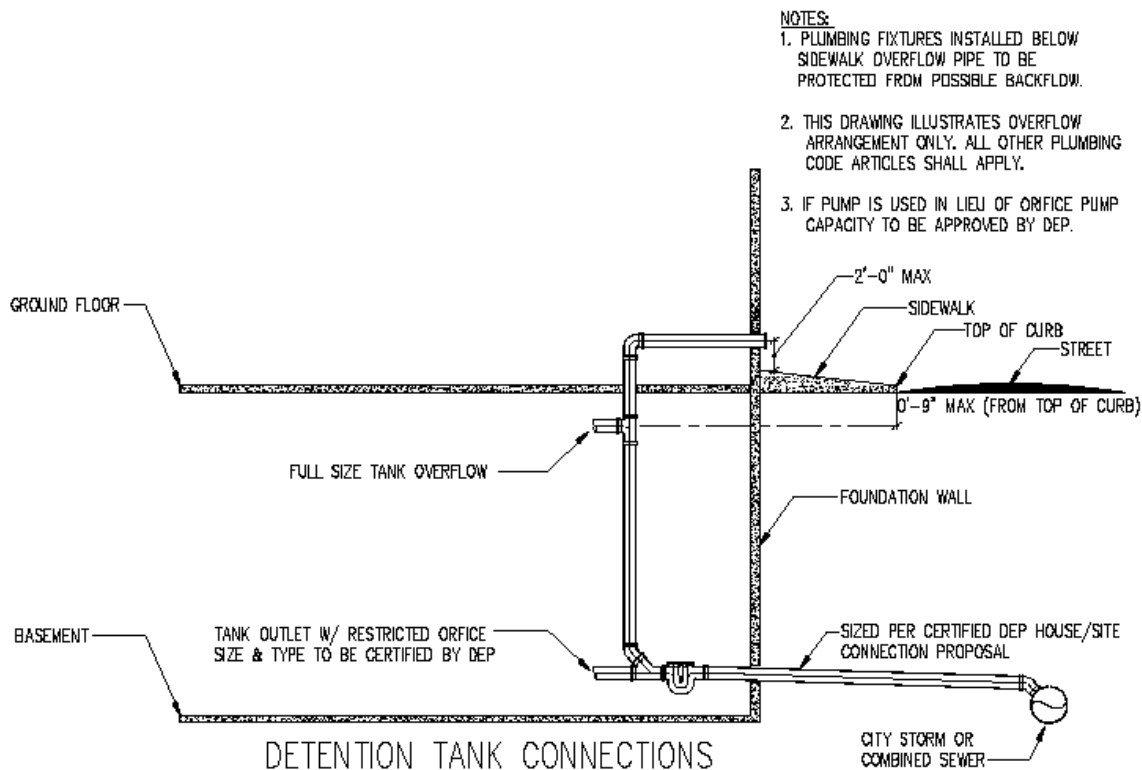
1101.5 Change in size. The size of a drainage pipe shall not be reduced in the direction of flow.

Exception: Drainage pipe that is part of an approved detention system.

1101.5.1 Detention systems. Where a detention system is provided, the pipe leaving the detention tank shall be permitted to be reduced to the flow allowed by the Department of Environmental Protection, provided, however, that an emergency overflow shall be provided to protect the building from internal flooding. Such emergency overflow shall equal the full size of the incoming storm water flow. Such emergency overflow shall discharge the overflow outside of the building into either of the following

locations:

1. The tax lot; or
2. The public sewer, provided that the overflow piping is provided with a vent, of the same diameter as the overflow piping, that terminates on the front wall of the building facing the street and no more than 2 feet (610 mm) above the sidewalk, provided further that the connection from the overflow pipe to outlet pipe of the detention tank is no more than 9 inches (229 mm) below the top of the curb level. See Figure 1101.5(1).



DETENTION TANK CONNECTIONS

FIGURE 1101.5.(1)

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.] Storm drainage systems shall be provided with backwater valves as required for sanitary drainage systems in accordance with 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 12 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.

1101.11 Site grading. Except as otherwise permitted by this code, no person shall perform site grading or land contour work, as defined in [section] Section 19-146 of the Administrative Code, [which work] that would [causes] cause storm water to flow across sidewalks or onto an adjacent property.

§2. Tables 1102.4, 1102.5 and 1102.7 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

**TABLE 1102.4
BUILDING STORM SEWER PIPE**

MATERIAL	STANDARD
Cast-iron pipe	ASTM A 74; ASTM A 888; CISPI 301
Chlorinated polyvinyl chloride (CPVC) plastic ^b	ASTM F 437; ASTM F 438; ASTM F 439
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 ([HIPE] HDPE) ^a	ASTM D 3350
Nonasbestos fiber-cement pipe	ASTM C [1449] <u>1450</u>
Polyvinyl chloride (PVC) plastic pipe (Type DWV, SDR26, SDR35, SDR41, PS50 or PS100) ^{[a] b}	ASTM D 2665; ASTM D 3034; ASTM F 891; CSA B 182.2; CAN/CSA B 182.4; <u>CSA B 181.2</u>
Vitrified clay pipe	ASTM C <u>400</u> ; ASTM C 700
Stainless steel drainage systems, Type 316L	ASME A112.3.1

- a. Approved plastic sewer for piping 12 inches and larger in accordance with Section 1101.10, Exception 2.
- b. Limited to residential buildings five stories or less in height.

**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; <u>CAN/CSA B 182.1; CSAB182.6; CSAB182.8</u>
Polyvinyl chloride (PVC) Plastic pipe (type sewer pipe, PS25, PS50 or PS 100) ^a	ASTM D 2729; ASTM F 891; CSA-B 182.2; CAN/CSA-B 182.4
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

a. Limited to residential buildings five stories or less in height.

**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 (CPVC) plastic ^a	ASTM F 437; ASTM F 438; ASTM F 439
	[ASME B16.15: ASME]
[Gray iron and d] Ductile iron	AWWA C110
High-density polyethylene (HDPE)	ASTM D 3350
Malleable iron	ASME B 16.3
Nonasbestos fiber-cement	ASTM C 1450
Plastic; general ^a	ASTM F 409
Polyethylene (PE) plastic ^a	ASTM [D 2609] <u>F 2306/F 2306M</u>
Polyvinyl chloride (PVC) plastic ^a	ASTM D 2464; ASTM D 2466; ASTM D 2467; CSA-B137.2; ASTM D 2665; ASTM F 1866
Steel	ASME B16.9; ASME B16.11; ASME B 16.28
Stainless steel drainage Systems, Type 316L	ASME A112.3.1
Vitrified clay	ASTM C 425

a. Limited to residential buildings five stories or less in height.

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] property line shall be the equivalent of a building-house

trap for the connection to a street combined sewer.

§3. Sections 1104.2 and 1104.3 of the New York city plumbing code, as added by local law number 99 for the year 2005, are amended to read as follows:

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 a 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.

Exception: Cooling tower blow-down shall discharge into the sanitary drainage system.

§4. The New York city plumbing code is amended to add a new section 1104.4, to read as follows:

1104.4 Parking garage floor drains. Floor drains provided in open or enclosed parking garages shall drain to the storm drainage system.

§5. The title of Sections 1106 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**SECTION PC 1106
SIZE OF CONDUCTORS, LEADERS AND STORM DRAINS**

§6. Section 1106.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

1106.2 Vertical conductors and leaders. Vertical conductors and leaders shall be sized for the maximum projected roof area, in accordance with Tables 1106.2(1) and 1106.2(2).

§7. Table 1106.2 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**TABLE 1106.2(1)
SIZE OF CIRCULAR VERTICAL CONDUCTORS AND LEADERS**

DIAMETER OF LEADER (inches) ^a	HORIZONTALLY PROJECTED ROOF AREA (square feet)
--	--

	Rainfall rate (inches per hour)	
	3	6
2	960	480
3	2,930	1,470
4	6,130	3,070
5	11,530	5,765
6	17,995	9,000
8	38,660	19,315

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929m².

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. For rectangular leaders, see Table 1106.2(2). Interpolation is permitted for pipe sizes that fall between those listed in this table.

§8. The New York city plumbing code, as added by local law number 99 for the year 2005, is amended by adding a new Table 1106.2(2) to read as follows:

TABLE 1106.2(2)
SIZE OF RECTANGULAR VERTICAL CONDUCTORS AND LEADERS

DIMENSIONS OF COMMON LEADER SIZES width x length (inches) ^a	HORIZONTALLY PROJECTED ROOF AREA (square feet)	
	Rainfall rate (inches per hour)	
	3	6
1 ³ / ₄ x 2 ¹ / ₂	1,130	565
2 x 3	1,840	920
2 ³ / ₄ x 4 ¹ / ₄	4,270	2,135
3 x 4	4,400	2,200
3 ¹ / ₂ x 4	5,300	2,650
3 ¹ / ₂ x 5	7,100	3,550
3 ³ / ₄ x 4 ³ / ₄	7,320	3,660
3 ³ / ₄ x 5 ¹ / ₄	8,500	4,250
3 ¹ / ₂ x 6	9,260	4,630
4 x 6	10,990	5,495
5 ¹ / ₂ x 5 ¹ / ₂	14,760	7,380
7 ¹ / ₂ x 7 ¹ / ₂	33,500	16,750

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929m².

- a. Sizes indicated are nominal width x length of the opening for rectangular piping.
- b. For shapes not included in this table, Equation 11-1 shall be used to determine the equivalent circular diameter, D_e, of rectangular piping for use in interpolation using the data from Table 1106.2(1).

$$D_e = [\text{width} \times \text{length}]^{1/2}$$

(Equation 11-1)

where:

D_e = equivalent circular diameter and D_e , width and length are in inches.

§9. Section 1106.4 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

1106.4 Vertical walls. In sizing roof drains and storm drainage piping, one-half of the exposed 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.

Exception: Where vertical conductors or leaders and down stream piping has been sized for secondary roof drainage in accordance with PC 1107, the contribution from vertical walls need not be added to the projected roof area.

§10. Section 1108.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

1108.1 Size of combined drains and sewers. Combined sanitary and storm sewers are not permitted in new installations. All sanitary and storm systems shall be separate up to a point within 5 feet (1524 mm) inside or outside of the foundation wall, unless rules of the Department of Environmental Protection require that the point of combination be located otherwise. With respect to repair of combined systems installed prior to the effective date of this section, [The] 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 1,333 square feet (124 m²). Where the total fixture load exceeds 256 fixture units, each additional fixture unit shall be considered the equivalent of 5.2 square feet (0.48 m²) of drainage area. These values are based on a rainfall rate of 3 inch (75 mm) per hour.

§11. Section 1111.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

1111.1 Subsoil drains. Subsoil drains carrying groundwater 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 subsoil 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.

§12. The New York city plumbing code, as added by local law number 99 for the year 2005, is amended by adding a new Section PC 1114 to read as follows:

SECTION PC 1114
PRIVATE ON-SITE STORMWATER DISPOSAL SYSTEMS

1114.1 When drywells are permitted. Where the Department of Environmental Protection determines that connection to a public combined or separate storm sewer is not available or that connection to a public combined or separate storm sewer is not feasible, or that extension of combined or separate storm sewer for connection is not feasible, a private on-site storm water disposal system may be provided. All such private systems are subject to the approval of the Department of Buildings, the Department of Environmental Protection, and of any other agency having jurisdiction, and shall be designed and constructed in accordance with Section 1114.2.

Exception: Exterior drinking fountains shall be permitted to drain to drywells.

1114.2 Drywells. Drywells shall be the only method of on-site disposal of storm water permitted unless an alternate method of on-site disposal is approved by the commissioner with the concurrence of the commissioner of the Department of Environmental Protection or any other agency having jurisdiction over storm water disposal. Drywells shall be designed and constructed in accordance with the following provisions:

1114.2.1 Scope of field investigation. Except as provided in Section 1114.2.2 the size of a drywell shall be predicated on a field investigation at the site of a proposed drywell to assess the suitability of the soil and site. The investigation shall occur prior to department approval of the drywell system and shall include the following:

- 1. Percolation tests.** The percolation rate of subsurface soils shall be verified with a percolation test. Percolation tests shall be performed in accordance with accepted engineering practice under the supervision of a special inspector in accordance with Section 1704.20.1 of the New York City Building Code. The results of the percolation tests shall be filed with the department stating the suitability of the site and the capacity of the subsoil for the proposed use.
- 2. Soil borings and testpits.** At least one boring and one test pit shall be made at the approximate site of each contemplated drywell. Soil borings and sampling procedures shall be in accordance with ASTM D 1586 and ASTM D 1587 and generally accepted engineering practice. Soil and rock samples shall be classified in accordance with Section 1802.3 of the New York City Building Code. Soil of classes 1, 4, 5, 6, and uncontrolled fill as set forth in Section 1804.2.1 and Table 1804.1 of the New York City Building Code shall be considered "Impermeable soil". Soil of classes 2 and 3 as set forth in Section 1804.2.1 and Table 1804.1 of the New York City Building Code, or porous material as determined by percolation tests, having a minimum thickness of 5feet (1524 mm) in depth shall be deemed "Permeable soil". Controlled fill, as described in Section 1804.2.2 of the New York City Building Code shall be considered permeable soil.

1114.2.2 Design considerations. Drywell design shall be based on the following:

- 1. Precipitation rate.** The drywell size shall be based upon rainfall of 2 inches (51 mm) in a 24-hour period on all impervious surfaces where a site is underlaid by permeable soil. Where a site is

underlaid by impermeable soil, the size of a drywell shall be based upon rainfall of 2 inches (51 mm) in a 24-four hour period over the entire site.

2. Storage volume. The storage volume of the drywell shall be measured 2 feet (610 mm) above the level of the water table. The location of the water table shall be verified at the time of the field investigation conducted in accordance with Section 1114.2.1. Unless otherwise approved by the Department of Environmental Protection the storage volume of the drywell shall accommodate the total storm water volume calculated in accordance with Item 1 above.

3. Location of drywells. Drywells shall be located at least 5 feet (1524 mm) from all lot lines and 10 feet (3048 mm) from all foundations or walls existing on the date of application for a building permit or proposed under the application to construct the drywell. Drywells shall be located twenty feet (6096 mm) from disposal fields and twenty feet (6096 mm) from seepage pits. Drywells shall not be located within the building foot print.

1114.2.3 Required components. Drywell design shall incorporate the following components:

- 1. Grit chamber.** All drywells shall contain a grit chamber as part of the drywell system. Grit chambers shall be constructed in accordance with Figure 1114.2.3(1).
- 2. Sand column.** If the boring and test pit disclose that the drywell is located within or underlaid by impermeable soil, it shall be constructed in accordance with Figure 1114.2.3(2). If the drywell is underlaid by permeable soil, it shall be constructed in accordance with Figure 1114.2.3(2), except that the sand column to permeable soil may be omitted.

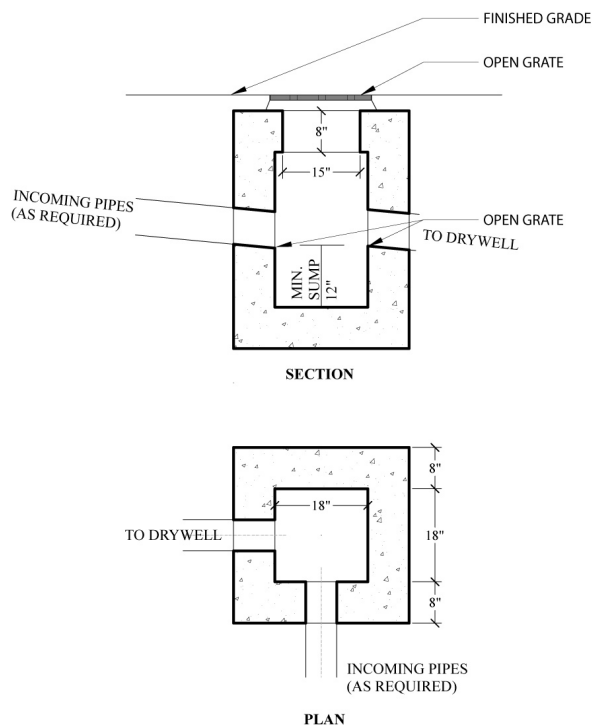


FIGURE 1114.2.3(1)
YARD DRAIN WITH SUMP

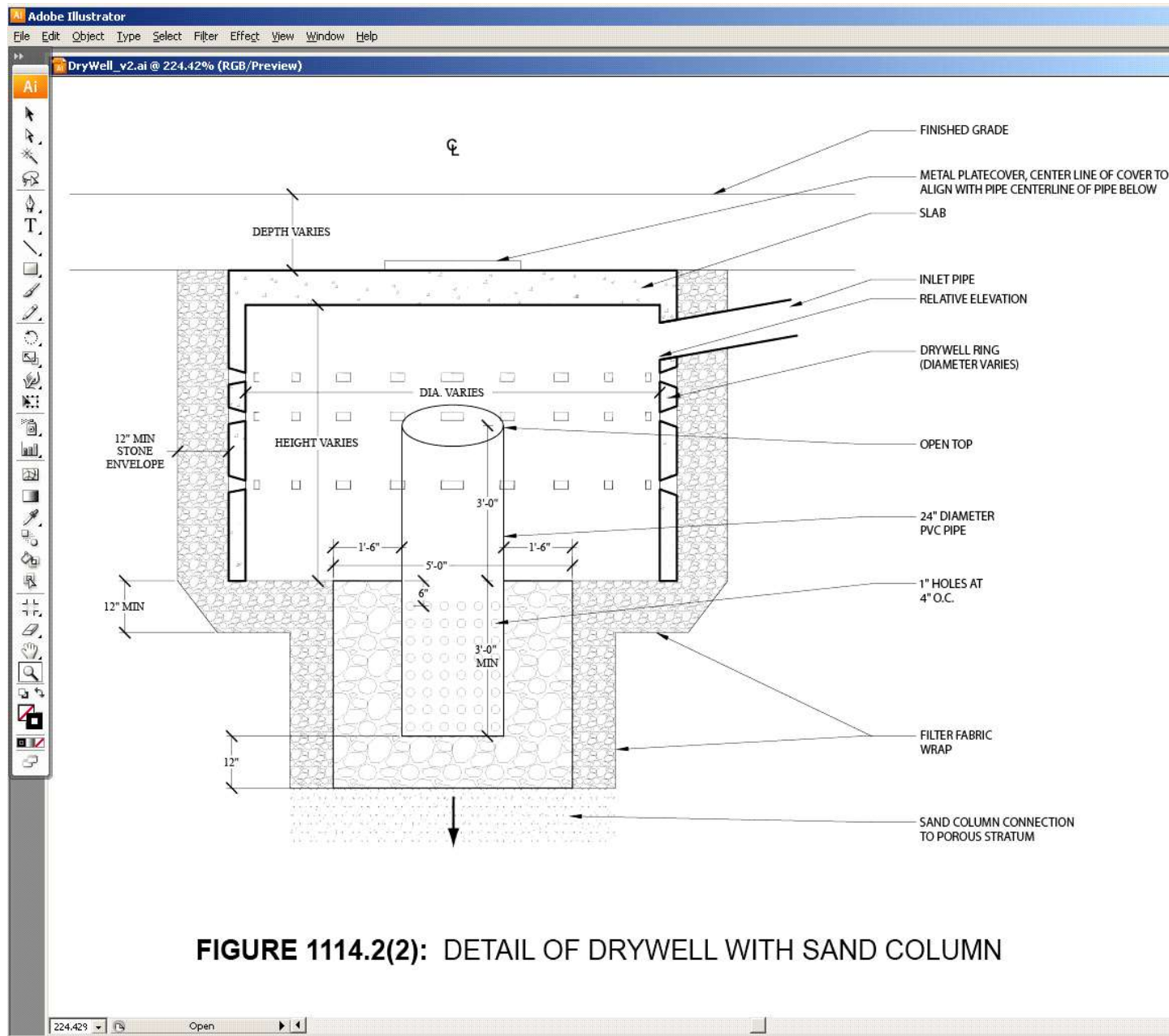


FIGURE 1114.2(2): DETAIL OF DRYWELL WITH SAND COLUMN

FIGURE 1114.2.3(2)
DETAIL OF DRYWELL WITH SAND COLUMN

1114.2.4 Drywell installation.

1114.2.4.1 Support of excavation. When a drywell installation requires an excavation deeper than 5 feet (1524 mm) the sides of the excavation shall be protected and maintained in accordance with Section 3304.4 of the New York City Building Code.

1114.2.4.2 Sand column installation. Where subsurface conditions require the installation of a sand column, measures shall be taken to ensure the sand column is installed without contamination by impervious materials.

1114.2.4.3 Verification. The department reserves the right to require a 24-hour percolation test of the installed drywell system prior to final approval.

1114.2.5 Special inspection. The construction of drywells shall be subject to special inspection in accordance with Section 1704.20 of the New York City Building Code. Minor variations, based on actual site conditions, shall be acceptable at the discretion of the registered design professional of record.

1114.2.6 Maintenance. The property owner shall maintain any drywell in proper working order such that it meets original design performance.

1114.2.7 Signage. Signage shall be attached to the house trap or fresh air pipe in the basement that states: A DRYWELL IS LOCATED ON THIS PROPERTY FOR STORMWATER DISPOSAL. ANNUAL MAINTANCE OF THIS DRYWELL IS REQUIRED. This signage shall depict the location of the drywell on the property.

PART L

CHAPTER 12

§1. Section 1202.1 of the New York city plumbing code, as amended by local law number 008 for the year 2008, is amended to read as follows:

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 99 [and 99C].

Exceptions:

1. This section shall not apply to portable systems or cylinder storage.
2. Vacuum system exhaust terminations shall comply with the New York City Mechanical Code.

§2. Section 1203.1 of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

1203.1 Design and installation. Nonmedical oxygen systems shall be designed and installed in accordance with NFPA [50] 55 and NFPA 51.

PART M

CHAPTER 13

§1. Chapter 13 of the New York city plumbing code is REPEALED and a new Chapter 13 is added to read as follows:

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. Refer to the rules of the department for any subsequent modifications that may have been made to the referenced national standards set forth herein in accordance with the exception contained in Section 28-103.19 of the Administrative Code. The application of the referenced standards shall be as specified in Section 102.8.

ANSI		American National Standards Institute 25 West 43rd Street, Fourth Floor New York, NY 10036
Standard Reference Number	Title	Referenced in code section number
A118.10—99	Specifications for Load Bearing, Bonded, Waterproof, Membranes for Thin Set Ceramic Tile and Dimension Stone Installation	417.5.2.5
Z4.3—95	Minimum Requirements for Nonsewered Waste-Disposal Systems	311.1
Z21.22—99 (R2003)	Relief Valves for Hot Water Supply Systems with Addenda Z21.22a-2000 (2003) and Z21.22b-2001 (2003)	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
Z124.9—94	Plastic Urinal Fixtures	419.1

ARI		Air-Conditioning, Heating & Refrigeration Institute 4100 North Fairfax Drive, Suite 200 Arlington, VA 22203
Standard Reference Number	Title	Referenced in code section number
1010—02	Self-contained, Mechanically-refrigerated Drinking-water Coolers	410.1
810—06	Standard Rating Conditions	428.1.1

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—2004	Air Gaps in Plumbing Systems	Table 608.1, 608.13.1
A112.1.3—2000 (R2005)	Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances	Table 608.1, 608.13.1
A112.3.1—2007	Stainless Steel Drainage Systems for Sanitary, DWV, Storm and Vacuum 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 (R2004)	Macerating Toilet Systems and Related Components	712.4.1
A112.4.1—1993 (R2002)	Water Heater Relief Valve Drain Tubes	504.6
A112.4.3—1999 (R2004)	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	405.4
A112.6.1M—1997 (R2002)	Floor-affixed Supports for Off-the-floor Plumbing Fixtures for Public Use	405.4.3
A112.6.2—2000 (R2004)	Framing-affixed Supports for Off-the-floor Water Closets with Concealed Tanks	405.4.3
A112.6.3—2001 (R2007)	Floor and Trench Drains	412.1
A112.6.7—2001 (R2007)	Enameled and Epoxy-coated Cast-iron and PVC plastic Sanitary Floor Sinks	427.1
A112.14.1—2003	Backwater Valves	715.2
A112.14.3—2000	Grease Interceptors	1003.3.4
A112.14.4—2001 (R2007)	Grease Removal Devices	1003.3.4
A112.18.1—2005	Plumbing Supply Fittings	424.1, 424.2, 424.3, 607.4, 608.2
A112.18.2—2005	Plumbing Waste Fittings	424.1.2
A112.18.3—2002 (R2008)	Performance Requirements for Backflow Protection Devices and Systems	424.2, 424.6
A112.18.7—1999 (R2004)	Deck mounted Bath/Shower Transfer Valves with Integral Backflow Protection	424.8
A112.19.1M—2004 (R2004)	Enameled Cast Iron Plumbing Fixtures	407.1, 410.1, 415.1, 416.1, 418.1
A112.19.2M—2003	Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals	401.2, 405.9, 408.1, 410.1, 416.1, 418.1, 419.1, 420.1

A1 12.19.3M—2000 (R2007) Stainless Steel Plumbing Fixtures (Designed for Residential Use)..... 405.9, 415.1, 416.1, 418.1

A112.19.4M—1994 (R2004)	Porcelain Enameled Formed Steel Plumbing Fixtures	407.1, 416.1, 418.1
A112.19.5—2005	Trim for Water-closet Bowls, Tanks, and Urinals	425.4
A112.19.6—1995	Hydraulic Performance Requirements for Water Closets and Urinals	419.1, 420.1
A112.19.7M—2006	Hydromassage Bathtub Appliances	421.1
A112.19.8M—2007	Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances	421.4
A112.19.9M—1991 (R2002)	Nonvitreous Ceramic Plumbing Fixtures with 2002 Supplement	407.1, 408.1, 410.1, 415.1, 416.1, 417.1, 418.1, 420.1
A112.19.12—2006	Wall Mounted and Pedestal Mounted, Adjustable, Elevating, Tilting and Pivoting Lavatory, Sink and Shampoo Bowl Carrier Systems and Drain Systems	416.4, 418.3
A112.19.13—2001 (R2007)	Electrohydraulic Water Closets	420.1
A112.19.15—2005	Bathtub/Whirlpool Bathtubs with Pressure Sealed Doors	407.4, 421.5
A112.21.2M—1983	Roof Drains	1102.6
A112.36.2M—1991 (R2002)	Cleanouts	708.2
B1.20.1—1983 (R2006)	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—2006	Malleable Iron Threaded Fittings Classes 150 and 300	Table 605.5, Table 702.4, Table 1102.7
B16.4—2006	Gray Iron Threaded Fittings Classes 125 and 250	Table 605.5, Table 702.4, Table 1102.7
B16.9—2003	Factory-made Wrought Steel Butt-welding Fittings	Table 1102.7
B16.11—2005	Forged Fittings, Socket-welding and Threaded	Table 1102.7
B16.12—1998 (R2006)	Cast-iron Threaded Drainage Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.15—2006	Cast Bronze Threaded Fittings	Table 605.5, Table 702.4
B16.18—2001 (R2005)	Cast Copper Alloy Solder Joint Pressure Fittings	Table 605.5, Table 702.4
B16.22—2001 (R2005)	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings	Table 605.5, Table 702.4
B16.23—2002 (R2006)	Cast Copper Alloy Solder Joint Drainage Fittings DWV	Table 605.5, Table 702.4
B16.26—2006	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 1102.7
B16.29—2001	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings(DWV)	Table 605.5, Table 702.4
B40.100—98	Pressure Gauges and Gauge Attachments	312.1.1



American Society of Sanitary Engineering
 901 Canterbury Road, Suite A
 Westlake, OH 44145

Standard Reference Number	Title	Referenced in code section number
1001—02	Performance Requirements for Atmospheric Type Vacuum Breakers	425.2, Table 608.1, 608.13.6, 608.16.4.1
1002—99	Performance Requirements for Antisiphon Fill Valves (Ballcocks) for Gravity Water Closet Flush Tanks	425.3.1, Table 608.1
1003—01	Performance Requirements for Water-pressure Reducing Valves	604.8
1004—90	Performance Requirements for Backflow Prevention 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 Dishwashers	409.1
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1020—04	Performance Requirements for Pressure Vacuum Breaker Assembly	Table 608.1, 608.13.5
1022—03	Performance Requirements for Backflow Preventer for Beverage Dispensing Equipment	Table 608.1, 608.16.1, 608.16.10
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1037—90	Performance Requirements for Pressurized Flushing Devices for Plumbing Fixtures	425.2
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5015—98	Performance Requirements for Testing Double Check Valve Backflow Prevention Assembly (DCVA)	312.10.2
5020—98	Performance Requirements for Testing Pressure Vacuum Breaker Assembly (PVBA)	312.10.2
5047—98	Performance Requirements for Testing Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies (RPDA)	312.10.2
5048—98	Performance Requirements for Testing Double-Check Valve Detector Assembly (DCDA)	312.10.2
5052—98	Performance Requirements for Testing Hose Connection Backflow Preventers	312.10.2
5056—98	Performance Requirements for Testing Spill-resistant Vacuum Breaker	312.10.2



ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard Reference Number	Title	Referenced in code section number
A 53/A53M—06a	Specification for Pipe, Steel, Black and Hot-dipped, Zinc-coated Welded and Seamless	Table 702.1
A 74—06	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
A 153/A 153M—09	Specifications for Zinc Coating (Hot Dip) on Iron and Steel Hardware	Table 702.4
A 312/A 312M—06	Specification for Seamless and Welded Austenitic Stainless Steel Pipes	Table 605.3, Table 605.4, Table 605.5, Table 605.6, 605.23.2
A 403/A 403M—11	Specification for Wrought Austenitic Stainless Steel Piping Fittings	Table 605.5, Table 605.8
A 578/A 518M—99 (2008)	Standard Specification for Corrosion-Resistant High-Silicon Iron Castings	Table 702.1
A 778—01	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	Table 605.3, Table 605.4, Table 605.5
A 861—04 (2008)	Standard Specification for High-Silicon Iron Pipe and Fittings	Table 702.4
A 888—07a	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—04	Specification for Solder Metal	605.14.3, 605.15.4, 705.9.3, 705.10.3
B 42—02e01	Specification for Seamless Copper Pipe, Standard Sizes	Table 605.3, Table 605.4, Table 702.1
B 43—98(2004)	Specification for Seamless Red Brass Pipe, Standard Sizes	Table 605.3, Table 605.4, Table 702.1
B 62—09	Specification for Composition Bronze or Ounce Metal Castings	Table 605.5, Table 702.4
B 75—02	Specification for Seamless Copper Tube	Table 605.3, Table 605.4, Table 702.1, Table 702.2, Table 702.3
B 88—03	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—06a	Specification for Copper Sheet, Strip Plate and Rolled Bar	402.3, 417.5.2.4 425.3.3, 902.2
B 251—02e01	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—02	Specification for Threadless Copper Pipe, Standard Sizes	Table 605.3, Table 605.4, Table 702.1
B 306—02	Specification for Copper Drainage Tube (DWV)	Table 702.1, Table 702.2
B 447—07	Specification for Welded Copper Tube	Table 605.3, Table 605.4
B 687—99(2005)e01	Specification for Brass, Copper, and Chromium-plated Pipe Nipples	Table 605.8, 605.14.3, 605.15.4, 705.9.3, 705.10.3, 605.14.3, 605.15.4, 705.9.3, 705.10.3
B 813—00e01	Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	605.14.3, 605.15.4, 705.10.3
B 828—02	Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	605.14.3, 605.15.4, 705.10.3
C 4—04e01	Specification for Clay Drain Tile and Perforated Clay Drain Tile	Table 702.3, Table 1102.5
C 14—07	Specification for Non-Reinforced Concrete Sewer, Storm Drain, and Culvert Pipe	Table 702.3, Table 1102.4
C 76—07	Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	Table 702.3, Table 1102.4
C 296—(2004)e01	Specification for Asbestos-cement Pressure Pipe	Table 605.4
C 400—98 (R2006)	Standard Test Methods for Quicklime and Hydrated Lime for Neutralization of Waste Acid	Table 1102.4
C 425—04	Specification for Compression Joints for Vitrified Clay Pipe and Fittings	Table 702.4, 705.15, 705.19, Table 1102.7
C 443—05a	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	705.6, 705.19
C 564—04a	Specification for Rubber Gaskets for Cast-iron Soil Pipe and Fittings	705.5.2, 705.5.3, 705.19
C 654—03	Standard Specification for Porous Concrete Pipe	Table 1102.5
C 700—07	Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated	Table 702.3, Table 1102.4, Table 1102.5
C 1053—00(2005)	Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications	Table 702.1, Table 702.4
C 1173—06	Specification for Flexible Transition Couplings for Underground Piping System	705.2.1, 705.6, 705.14.1, 705.15, 705.16.2, 705.19
C 1277—06	Specification for Shielded Coupling Joining Hubless Cast-iron Soil Pipe and Fittings	705.5.3
C 1440—03	Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste, and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems	705.19
C 1449/C1449M—05	Standard Specification for Non-Asbestos Fiber-cement Non-Pressure Sewer Pipe	Table 702.2, Table 702.3, Table 702.4
C 1450/C 1450M—04 (R2010)	Standard Specification for Non-asbestos Fiber-cement Storm Drain Pipe	Table 1102.4, Table 1102.7
C 1460—04	Specification for Shielded Transition Couplings for Use with Dissimilar DWV Pipe and Fittings Above Ground	705.19
C 1461—06	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	705.19
C 1540—04	Specifications for Heavy Duty Shielded Couplings Joining Hubless Cast-iron Soil Pipe and Fittings	705.5.3
C 1563—04	Standard Test Method for Gaskets for Use in Connection with Hub and Spigot Cast Iron Soil Pipe and Fittings for Sanitary Drain, Waste, Vent and Storm Piping Applications	705.5.2
D 1586—08A	Standard Test Method for Standard Penetration Test (SPT) and Split-barrel Sampling of Soils	1114.2.1
D 1587—08	Standard Practice for Thin-walled Tube Sampling of Soils for Geotechnical Purposes	1114.2.1
D 1869—95(2005)	Specification for Rubber Rings for Asbestos-cement Pipe	605.24, 705.3, 705.19
D 2235—04	Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings	705.2.2
D 2464—06	Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Table 1102.7
D 2466—06	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	Table 1102.7
D 2467—06	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Table 1102.7
D 2564—04e01	Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems	705.14.2
D 2657—07	Practice for Heat Fusion-joining of Polyolefin Pipe and Fitting	Table 702.1, Table 702.4, 705.16.1
D 2661—06	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, 705.7.2
D 2665—07	Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Table 702.1, Table 702.2, Table 702.3, Table 702.4, Table 1102.4, Table 1102.7
D 2729—04e01	Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Table 1102.5
D 2751—05	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings	Table 702.4
D 2855—96(2002)	Standard Practice for Making Solvent-cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings	705.14.2
D 2949—01ae01	Specification for 3.25-in Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Table 702.1, Table 702.4
D 3034—06	Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Table 702.3, 702.4, Table 1102.4
D 3212—96a(2003)e01	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals	705.2.1, 705.14.1, 705.16.2
D 3350—02a	Specification for High Density Polyethylene Pipe (HDPE)	Table 702.2, Table 1102.4, Table 1102.7
D 4068—01	Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-containment Membrane	417.5.2.2
D 4551—96(2001)	Specification for Poly (Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-containment Membrane	417.5.2.1
F 405—05	Specification for Corrugated Polyethylene (PE) Tubing and Fittings	Table 1102.5

F 409—02	Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings	424.1.2, Table 1102.7
F 437—06	Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Table 1102.4, Table 1102.7
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F 439—06	Specification for Socket-type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Table 1102.4, Table 1102.7
F 477—07	Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe	605.24, 705.19
F 628—06e01	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core	Table 702.1, Table 702.4, 705.2.2
F 656—02	Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	705.14.2
F 667—06	Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings	Table 702.2, Table 702.4
F 891—04	Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core	Table 702.1, Table 702.2, 702.3, Table 1102.4, Table 1102.5
F 1412—01e01	Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage	Table 702.1, 705.17.1
F 1488—03	Specification for Coextruded Composite Pipe	Table 702.1, Table 702.2
F 1673—04	Polyvinylidene Fluoride (PVDF) Corrosive Waste Drainage Systems	Table 702.1, 702.4, 705.18.1
F 1866—07	Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	Table 702.4, Table 1102.7
F 2306/F2306M—05	12" to 60" Annular Corrugated Profile-wall Polyethylene (PE) Pipe and Fittings for Gravity Flow Storm Sewer and Subsurface Drainage Applications	Table 1102.7



American Welding Society
550 N.W. Le Jeune Road
Miami, FL 33126

Standard Reference Number	Title	Referenced in code section number
A5.8—04	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



American Water Works Association
6666 West Quincy Avenue
Denver, CO 80235

Standard Reference Number	Title	Referenced in code section number
C104—98	Standard for Cement-mortar Lining for Ductile-Iron Pipe and Fittings for Water	605.5
C110/ A21.10—03	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	605.13
C115/A21.15—99	Standard for Flanged Ductile-iron Pipe with Ductile-iron or Gray-iron Threaded Flanges	Table 605.3
C151/A21.51—02	Standard for Ductile-iron Pipe, Centrifugally Cast for Water	Table 702.1, Table 702.2, Table 702.3, Table 605.3, Table 1102.4
C153—00/A21.53—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	Table 608.1, 608.13.2, 608.16.2
C651—99	Disinfecting Water Mains	610.1
C652—02	Disinfection of Water-storage Facilities	610.1



Cast Iron Soil Pipe Institute
5959 Shallowford Road, Suite 419
Chattanooga, TN 37421

Standard Reference Number	Title	Referenced in code section number
301—04a	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, Table 1102.4, Table 1102.5, Table 1102.7
310—11	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



Canadian Standards Association
5060 Spectrum Way
Mississauga, Ontario, Canada L4W 5N6

Standard Reference Number	Title	Referenced in code section number
B45.1—02	Ceramic Plumbing Fixtures	408.1, 416.1, 418.1, 419.1
B45.2—02	Enameled Cast-iron Plumbing Fixtures	407.1, 415.1, 416.1, 418
B45.3—02	Porcelain Enameled Steel Plumbing Fixtures	407.1, 416.1, 418.1
B45.4—02	Stainless-Steel Plumbing Fixtures	415.1, 416.1, 418.1, 420.1

B45.5—02	Plastic Plumbing Fixtures	407.1, 416.2, 417.1, 419.1, 420.1, 421.1
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B45.9—99	Macerating Systems and Related Components	712.4.1
B45.10—01	Hydromassage Bathtubs	421.1
B64.1.2—01	Vacuum Breakers, Pressure Type (PVB)	Table 608.1, 608.13.5
B64.2.1—01	Vacuum Breakers, Hose Connection Type (HCVB) with Manual Draining Feature	Table 608.1, 608.13.6
B64.2.1.1—01	Vacuum Breakers, Hose Connection Dual Check Type (HCDVB)	Table 608.1, 608.13.6
B64.4.1—01	Backflow Preventers, Reduced Pressure Principle Type for Fire Sprinklers (RPF)	Table 608.1, 608.13.2
B64.5—01	Backflow Preventers, Double Check Type (DCVA)	Table 608.1, 608.13.7
B64.5.1—01	Backflow Preventers, Double Check Type for Fire Systems (DCVAF)	Table 608.1, 608.13.7
B64.6—01	Backflow Preventers, Dual Check Valve Type (DVC)	Table 608.1
B64.7—94	Vacuum Breakers, Laboratory Faucet Type (LFVB)	Table 608.1, 608.13.6
B64.10/B6410.1—01	Manual for the Selection and Installation of Backflow Prevention Devices/ Manual for the Maintenance and Field Testing of Backflow Prevention Devices	312.10.2
B79—94(2000)	Floor, Area and Shower Drains, and Cleanouts for Residential Construction	412.1
B125—01	Plumbing Fittings	424.1, 424.3, 424.4, 424.6 425.3.1 425.5, Table 608.1
B125.1—(Rev 1 2005)	Plumbing Supply Fittings	424.2, 424.3, 607.4
B125.2—(Rev 1 2005)	Plumbing Waste Fittings	424.1.2
B125.3—2005	Plumbing Fittings	416.5, 424.5, Table 608.1
B137.2—02	PVC Injection-Moulded Gasketed Fittings for Pressure Applications	Table 1102.7
B137.3—02	Rigid Poly (Vinyl Chloride) (PVC) Pipe for Pressure Applications	705.14.2
B181.1—02	ABS Drain, Waste, and Vent Pipe and Pipe Fittings	Table 702.1, Table 702.4, 705.2.2, 715.2
B181.2—02	PVC Drain, Waste, and Vent Pipe and Pipe Fittings—with Revisions through December 1993	Table 702.1, Table 702.2, Table 702.3, 705.14.2, 715.2, Table 1102.4
B182.1—02	Plastic Drain and Sewer Pipe and Pipe Fittings	705.14.2
B182.2—02	PVC Sewer Pipe and Fittings (PSM Type)	Table 702.3, Table 1102.4, Table 1102.5
B182.6—02	Profile Polyethylene Sewer Pipe and Fittings for Leak-proof Sewer Applications	Table 1102.5
B182.8—02	Profile Polyethylene Storm Sewer and Drainage Pipe and Fittings	Table 1102.5
CAN/CSA-A257.1M—92	Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	Table 702.3, Table 1102.4
CAN/CSA-A257.2M—92	Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	Table 702.3, Table 1102.4
CAN/CSA-A257.3M—92	Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets	705.6, 705.19
CAN/CSA-B64.1.1—01	Vacuum Breakers, Atmospheric Type (AVB)	425.2, Table 608.1, 608.13.6, 608.16.4.1
CAN/CSA-B64.2—01	Vacuum Breakers, Hose Connection Type (HCVB)	Table 608.1, 608.13.6
CAN/CSA-B64.2.2—01	Vacuum Breakers, Hose Connection Type (HCVB) with Automatic Draining Feature	Table 608.1, 608.13.6
CAN/CSA-B64.3—01	Backflow Preventers, Dual Check Valve Type with Atmospheric Port (DCAP)	Table 608.1, 608.13.3, 608.16.2
CAN/CSA-B64.4—01	Backflow Preventers, Reduced Pressure Principle Type (RP)	Table 608.1, 608.16.2
CAN/CSA-B64.10—01	Manual for the Selection, Installation, Maintenance and Field Testing of Backflow Prevention Devices	312.9.2
CAN/CSA-B181.3—02	Polyolefin Laboratory Drainage Systems	Table 702.1, Table 702.4, 705.17.1
CAN/CSA-B182.1—02	Plastic Drain and Sewer Pipe and Pipe Fittings	Table 1102.5
CAN/CSA-B182.4—02	Profile PVC Sewer Pipe and Fittings	Table 702.3, Table 1102.4, Table 1102.5
CAN/CSA-B602—02	Mechanical Couplings for Drain, Waste, and Vent Pipe and Sewer Pipe	705.2.1, 705.5.3, 705.6, 705.14.1, 705.15, 705.16.2, 705.19

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
PS117—08	Copper and Copper Allow Tubing System Incorporating Press-type or Nail-type Connections	605.15.3

ICC

International Code Council
500 New Jersey Ave. NW
Washington, DC 20001

Standard Reference Number	Title	Referenced in code section number
ICC-ES PMG LC 1002—10	PMG Listing Criteria for Press-connection Fittings for Potable Water Tube and Radiant Heating Systems	605.15.3

ISEA

International 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
Battery March Park
Quincy, MA 02169-7471

Standard Reference	Referenced in code
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Number	Title	section number
51—02	Design and Installation of Oxygen-fuel Gas Systems for Welding, Cutting, and Allied Processes	1203.1
55—10	Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable, Stationary Containers, Cylinders and Tanks	1203.1
99—05	Standard for Health Care Facilities	1202.1

NSF

NSF International
789 Dixboro Road
Ann Arbor, MI 48105

Standard Reference	Title	Referenced in code section number
3—2007	Commercial Warewashing Equipment	409.1
14—2007	Plastic Piping System Components and Related Materials	303.3, 611.3
18—1996	Manual Food and Beverage Dispensing Equipment	426.1
42—2007e	Drinking Water Treatment Units—Aesthetic Effects	611.1, 611.3
44—2004	Residential Cation Exchange Water Softeners	611.1, 611.3
53—2007	Drinking Water Treatment Units—Health Effects	611.1, 611.3
58—2006	Reverse Osmosis Drinking Water Treatment Systems	611.2, 611.3
61—2007a	Drinking Water System Components—Health Effects	410.1, 424.1, 605.3.1, 605.4, 605.5, 611.3
62—2004	Drinking Water Distillation Systems	611.1

NYC/NYS

New York City Codes / New York State Codes/New York City Agencies

Standard Reference	Title	Referenced in code section number
	1968 Building Code	102.2.1, 102.2.2
	New York City Administrative Code	102.2.1, 102.2.2, 107.5, 107.7, 1101.11
	New York City Building Code	102.2.1, 102.2.2, 201.3, 305.4, 307.1, 307.2, 307.3, 307.6, 308.2, 309.1, 310.1, 310.3, 403.1, Table 403.1, 403.1.2, 403.3, 404.3, 403.3.1, 403.4.1, 404.1, 407.3, 417.6, 502.4, 606.5.2, 1106.5, 1114.1, 1114.2.1, 1114.2, 1114.2.4.1, 1114.2.5
	New York City Construction Codes	C101.1
	New York City Department of Environmental Protection	105.6, 106.6.1.1, 106.6.1.2, 106.6.2.1, 106.6.2.2, 202, 302.1, 302.2, 312.5.1, 312.10.2, 603.2.1, 605.3, 606.7, 608.16.2, 701.2.1, 701.2.2, 701.2.3, 701.2.5, 701.4, 701.5, 803.2, 1003.3.1, 1003.3.4, 1003.3.4.1, 1003.10, 1101.1, 1101.2, 1101.2.2, 1101.2.3, 1101.2.4, 1101.5.1, Figure 1101.5(1), 1108.1, 1114.1, 1114.2, 1114.2.2, C101.1
	New York City Department of Health and Mental Hygiene	701.4
	New York City Electrical Code	201.3, 502.1, 504.3, 1113.1.3
	New York City Energy Conservation Code	201.3, 313.1, 502.1, 607.2
	New York City Fire Code	201.3, 1201.1
	New York City Fuel Gas Code	101.2, 201.3, 502.1, 502.1.1
	New York City Health Code	403.3
	New York City Mechanical Code	201.3, 310.1, 422.9, 502.1, 502.1.1, 612.1, 1202.1
	New York City Residential Code	101.2
	New York City Sanitary Code	202
	New York State Department of Environmental Conservation	701.4
	New York State Department of Health	105.6

PDI

Plumbing and Drainage Institute
0800 Turnpike Street, Suite 300
North Andover, MA 01845

Standard Reference	Title	Referenced in code section number
G1012003	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data	1003.3.4

WaterSense

WaterSense U.S. Environmental Protection Agency Office of Wastewater Management (4204M)
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Version and Effective Date	Title	Referenced in code section number
v.1.0—October 1, 2007	High-efficiency Lavatory Faucet Specifications	604.4.1
v.1.0—January 24, 2007	Tank-type High-efficiency Toilet Specification	604.4.1
v.1.0—August 14, 2007	WaterSense Specification for Flushing Urinals	604.4.1
v.1.0—March 4, 2010	WaterSense Specification for Showerheads	604.4.1

PART N
APPENDIX C

§1. Appendix C of the New York city plumbing code is REPEALED and a new appendix C is added to read as follows:

APPENDIX C
WATER RECYCLING SYSTEMS

SECTION PC C101
GENERAL

C101.1 Scope. The provisions of this appendix shall govern the materials, design, construction and installation of water recycling systems. The following water recycling uses are not addressed in this appendix:

1. Rainwater collected from piping on the exterior and used solely for subsurface irrigation, drip irrigation, watering plants using a hose and washing of sidewalks, streets, buildings or vehicles;
2. Rainwater collected utilizing a retention system through rain barrels complying with the requirements of the Department of Environmental Protection;
3. Commercial car washing facilities; and
4. Water closet-sink combinations. A fixture that enables wastewater from a lavatory to discharge directly into the flushing tank of a water closet may be utilized provided it complies with the New York City Construction Codes, including all accessibility requirements. The water closet and lavatory shall be located in the same room.

C101.2 Definitions. The following terms shall have the meanings shown herein.

BLACK WATER. Discharge from water closets, urinals, bathtubs, showers, clothes washers, laundry trays, washdown water and blowdown water from cooling towers, and any other fixtures discharging animal or vegetable matter in suspension or solution.

GRAY WATER. Discharge from lavatories and condensate water.

RAINWATER. Precipitation collected directly from the sky or from roof and balcony runoff.

WASTEWATER. Gray and black water.

C101.3 Permits. Permits shall be required in accordance with Section PC 105.

C101.4 Installation. Wastewater recycling systems shall comply with Section PC C102. Water recycling systems which harvest rainwater or condensate water used solely for drip irrigation, subsurface irrigation or cooling tower makeup shall comply with Section PC C103.

C101.5 Materials. Above-ground drain, waste and vent piping for water recycling systems shall conform to one of the standards listed in Table 702.1. Underground building drainage and vent piping shall conform to one of the standards listed in Table 702.2. Distribution piping shall conform to one of the standards listed in Tables 605.4 and 605.5 and shall be painted purple in color or covered in a purple jacket and labeled in accordance with Section C101.6. Manufactured purple piping shall be approved by the commissioner.

C101.6 Identification. Distribution piping and reservoirs shall be identified as containing nonpotable water. Piping identification shall be in accordance with Section 608.8.

C101.6.1 Spigots and hose bibs. Spigots and hose bibs dispensing recycled water shall be secured from unauthorized use by a locking mechanism. Signage reading “Caution: Non-potable water, do not drink” shall be placed adjacent to the location of spigots and hose bibs.

C101.7 Inspections. Water recycling systems shall be inspected in accordance with Section PC107.

C101.8 Potable water connections. Only connections in accordance with Section C102.3 and C103.3 shall be made between a water recycling system and a potable water system. All other connections shall be prohibited.

C101.9 Wastewater connections. Water recycling systems shall receive only wastewater, groundwater, and rainwater.

C101.10 Collection reservoir. Wastewater shall be collected in a reservoir constructed of durable, nonabsorbent and corrosion-resistant materials. Access openings shall be provided to allow inspection and cleaning of the reservoir interior and shall be properly gasketed and the tanks vented to prevent odors from entering into the building.

C101.10.1 Multiple collection reservoirs required. Separate collection tanks or compartments shall be provided for influent wastewater and rainwater. Where multiple collection reservoirs are provided, a separate recycled water reservoir shall be provided which shall receive treated water from the collection systems.

C101.10.1.1 Recycled water receiver reservoirs. Recycled water receiver reservoirs shall be provided with potable water makeup in accordance with Section C102.3.

C101.11 Filtration. Effluent entering the collection reservoir shall pass through an acceptable filtration system suitable for the reuse application.

C101.12 Overflow. The collection reservoir shall be equipped with an overflow pipe having the same or larger diameter as the influent pipe for the wastewater. The overflow pipe shall be connected to the appropriate building drainage system.

C101.13 Drain required. All reservoirs shall be provided with a drain indirectly connected to the sanitary drainage system.

C101.14 Vent required. Reservoir(s) shall be provided with a vent sized in accordance with Chapter 9 and based on the diameter of the reservoir influent pipe.

C101.15 Cooling towers. Treated effluent shall only be utilized as water makeup on cooling towers equipped with drift eliminators and shall be operated in accordance with the *New York City Building Code and Mechanical Code*.

SECTION PC C102
WASTEWATER RECYCLING SYSTEMS

C102.1 Scope. This section shall apply to water recycling systems collecting wastewater and rainwater. Treated effluent must comply with the water quality standards listed in Table C102.1 and may be used for flushing of water closets and urinals, cooling tower makeup, washing of sidewalks, streets or buildings, laundry, subsurface or drip landscape irrigation systems, watering plants with a hose or other approved uses that are located in the same lot as the water recycling system.

Exception: Systems collecting only rainwater and/or condensate used solely for cooling tower makeup and/or subsurface and drip irrigation shall comply with Section PC C103.

TABLE C102.1
MINIMUM WATER QUALITY STANDARDS

<u>POLLUTANT</u>	<u>QUANTITY LIMIT</u>
BOD	< 10 mg/l ^a
TSS	< 10 mg/l
Total Coliform	< 100 per 100 ml
E. Coli	< 2.2 colonies per 100 ml
pH	6.5-8.0
Turbidity	< 2.0 NTU ^b

a. Effluent from rainwater and condensate collected in separate tanks or compartment wastewater, shall not be required to meet the BOD limitations indicated above. b. The wastewater facility effluent must meet the performance standards of < 2.0 NTU for turbidity for 95% of the measurements. At no time can the turbidity result be above 5 NTU. Turbidity results shall be recorded and compiled in the annual report.

C102.2 Disinfection. Filtered effluent shall be disinfected prior to reuse by an acceptable method, which shall achieve the minimum water quality standards as stated in Table C102.1.

C102.3 Makeup water. Potable water shall be supplied as a source of makeup water for water recycling systems included in Section PC C102. The potable water supply shall be protected against backflow in

accordance with Section PC 608.

C102.4 Coloring. If the treated effluent water is to be dyed, the dye shall be a food grade vegetable dye either blue or green in color. Such effluent water shall be dyed before being supplied to the fixtures.

C102.5 Reserved.

C102.6 Reserved.

C102.7 Reserved.

C102.8 Tests. Drain, waste and vent piping for water recycling systems shall be tested in accordance with Section PC312. Distribution piping for water recycling systems shall be tested in accordance with Section 312.5 of this code. Additional tests shall be performed in accordance with Sections C102.8.1 through C102.8.3.

C102.8.1 Wet testing. The system shall be “wet tested” with potable water to ensure no leaks exist and all equipment is fully functional.

C102.8.2 Start-up testing. After successful wet testing and once sufficient influent is established for continuous operation, the system shall be placed into start-up mode for a minimum of two weeks. Adequate flow shall be based on design requirements and nutrient loads. Samples shall be collected five days per week and each sample must meet the water quality requirements of Table C102.1. Samples not meeting the water quality requirements of Table C102.1 shall be recorded, and included in the final start-up test report. Successful start-up tests shall demonstrate 100 percent compliance with the water quality requirements of Table C102.1 for a period of two continuous weeks. Treated water effluent from the recycling system shall be directed to a floor drain. The building shall continue to operate all fixtures using only the potable water system during this start-up testing.

C102.8.3 Temporary use testing. The system shall be placed into temporary use mode after successful start-up testing. During the temporary use mode, treated effluent from the system shall be directed into the recycled water reservoirs and shall be utilized in accordance with Section C102.1. Samples shall be collected on a weekly basis for a period of three months. The operation of the system shall immediately cease if any test sample does not meet the minimum water quality standards of Table C102.1 in which case, tests from at least five consecutive days shall demonstrate full compliance.

SECTION PC C103 **RAINWATER RECYCLING SYSTEMS**

C103.1 Scope. This section shall apply to water recycling systems collecting rainwater and/or condensate used solely for cooling tower makeup and/or subsurface and drip irrigation.

C103.2 Reserved.

C103.3 Makeup water. Makeup water shall not be required for drip or subsurface landscape irrigation systems. Where makeup water is provided, the potable water supply shall be protected against backflow in accordance with Section PC 608.

C103.4 Reserved.

C103.5 Coloring. Treated effluent water used for cooling tower makeup and drip or subsurface landscape irrigation systems shall not be required to be dyed.

C103.6 Reserved.

C103.7 Reserved.

C103.8 Reserved.

C103.9 Reserved.

C103.10 Reserved.

C103.11 Reserved.

C103.12 Tests. Drain, waste and vent piping for water recycling systems shall be tested in accordance with Section PC 312. Distribution piping for water recycling systems shall be tested in accordance with Section 312.5. Additional tests shall be performed in accordance with Sections C103.12.1 and C103.12.2.

C103.12.1 Wet testing. The system shall be “wet tested” with potable water to ensure no leaks exist and all equipment is fully functional.

C103.12.2 Start-up testing. After successful wet testing and once sufficient influent is established for continuous operation, the system shall be placed into start-up mode for a minimum of two weeks. An effluent sample from the treatment system shall be collected and shall meet the water quality requirements of Table C102.1. If the sample does not meet the water quality requirements of Table C102.1 it shall be recorded and included in the final start-up test report. Successful start-up tests shall demonstrate 100 percent compliance with the water quality requirements of Table C102.1.

PART O

APPENDIX E

§1. Section E101.1.1 of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

E101.1.1 This appendix outlines two procedures which may be utilized 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] changes in the system caused by friction and elevation, and the rates of flow necessary for operation of various fixtures.

§2. “Line B” of “Step 2” of Section E103.3 of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

Line B: Determine from [Section] Table 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.

§3. “Step 7 Column 6” of Section E103.3 of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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] found in Example E103.3(1).

§4. The unidentified table following “Step 8 Column 7” of section E103.3 of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

EXAMPLE E103.3(1)

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 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
				1-2 90-degree ell	0.5
C-F	1-2 ¹ / ₂ Side branch tee	12	C-F	1-1 ¹ / ₂ Side branch tee	7
C-D	1-2 ¹ / ₂ 90-degree ell	7	C-D	1-1 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

§5. “Step 10 Column 9” of Section E103.3 of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

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 480mm) 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:] in Example E

103.3(2)

§6. The unidentified table following “Step 12 Line L” of Section E103.3 of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

EXAMPLE E103.3 (2)

PIPE SECTIONS	FRICTION LOSS EQUIVALENT LENGTH (feet)	
	Cold Water	Hot Water
A-B	$0.69 \times 3.2 = 2.21$ 0.085×3.1 0.26 $0.20 \times 1.9 = 0.38$ 1.62 $= 3.08$ 5.93	$0.69 \times 3.2 = 2.21$ $0.16 \times 1.4 =$ 0.22 $0.17 \times 3.2 = 0.54$ 1.57 $= 3.2 = 5.02$ 7.99
B-C		
C-D		
D-E		
Total pipe friction losses (Line K)		

§7. Figure E103.3(1) of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is REPEALED and a new figure E103.3(1) is added to read as follows:

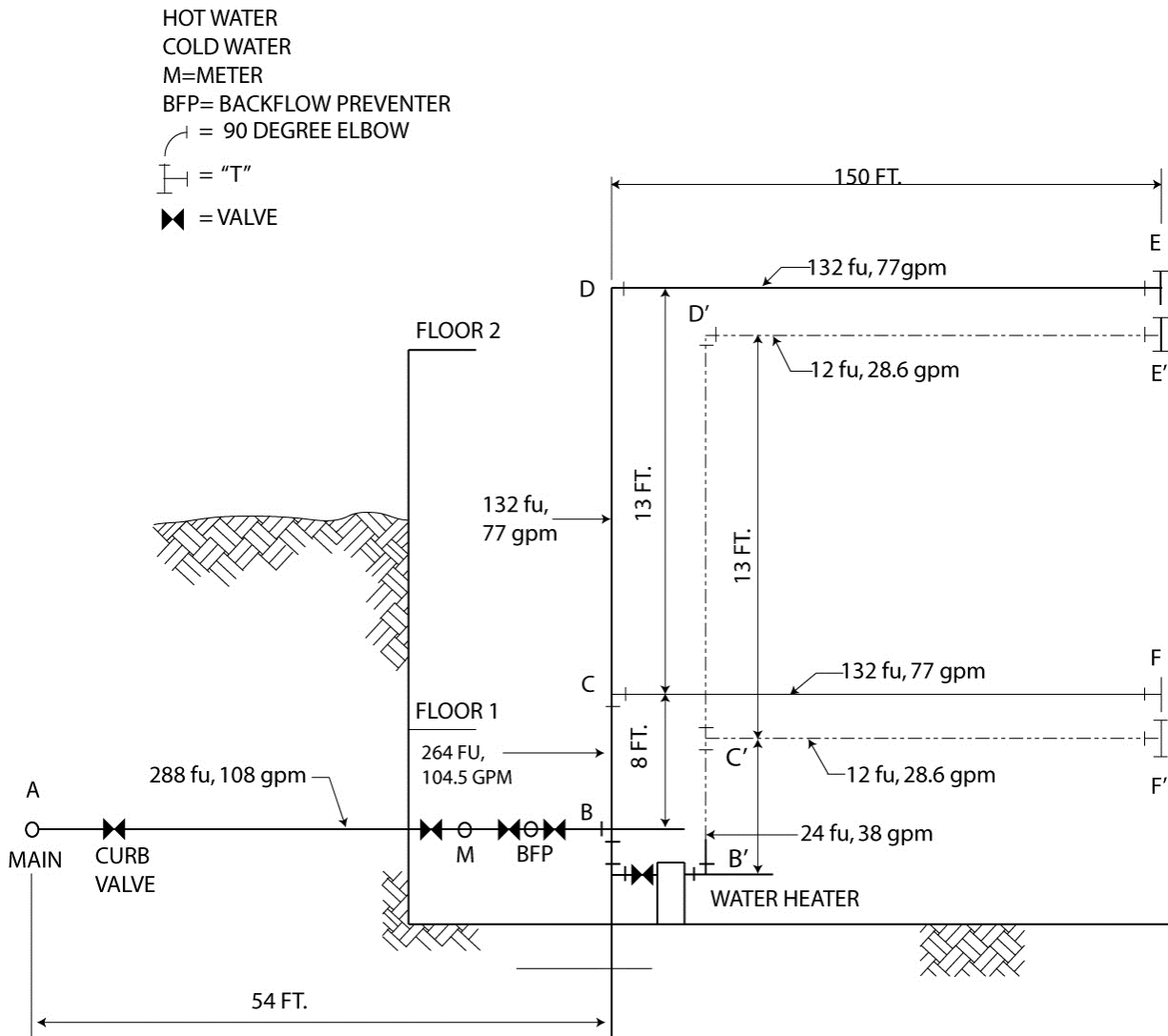


FIGURE E103.3(1)
 EXAMPLE-SIZING

For SI: 1 foot = 304.8 mm, 1 gpm = 3.785 L/m.

**FIGURE E103.3(1)
 EXAMPLE- SIZING**

§8. Figure E103.3(4) of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is REPEALED.

§9. The title of Figure E103.3(7) of Appendix E of the New York city plumbing code, as added by local law number 99 for the year 2005, is amended to read as follows:

**FIGURE E103.3(7)
FRICTION LOSS IN [FAIRLY] ROUGH PIPE^a**

§10. The New York city plumbing code, as added by local law number 99 for the year 2005, is amended by adding a new Section E202 to read as follows:

**SECTION PC E202
DETERMINATION OF PIPE VOLUMES**

E202.1 Determining volume of piping systems. Where required for engineering design purposes, Table E202.1 shall be used to determine the approximate internal volume of water distribution piping.

**TABLE E202.1
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION TUBING**

<u>OUNCES OF WATER PER FOOT OF TUBE</u>			
<u>Size Nominal, Inch</u>	<u>Copper Type M</u>	<u>Copper Type L</u>	<u>Copper Type K</u>
<u>3/8</u>	<u>1.06</u>	<u>0.97</u>	<u>0.84</u>
<u>1/2</u>	<u>1.69</u>	<u>1.55</u>	<u>1.45</u>
<u>3/4</u>	<u>3.43</u>	<u>3.22</u>	<u>2.90</u>
<u>1</u>	<u>5.81</u>	<u>5.49</u>	<u>5.17</u>
<u>1 1/4</u>	<u>8.70</u>	<u>8.36</u>	<u>8.09</u>
<u>1 1/2</u>	<u>12.18</u>	<u>11.83</u>	<u>11.45</u>
<u>2</u>	<u>21.08</u>	<u>20.58</u>	<u>20.04</u>

For SI: 1 ounce = 0.030 liter.

§ 2. Notwithstanding any other law or rule tables, figures or equations in graphic or PDF format to be added to the New York city plumbing code pursuant to this local law need not be underlined to denote new matter being added. The absence of underlining to denote new matter being added shall not affect the validity of such tables, figures or equations.

§3. This local law shall take effect on the same date as the effective date of a local law amending the administrative code of the city of New York in relation to bringing the New York city building code up to date with the 2009 edition of the International Building Code published by the International Code

Council.

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