Final Draft Proposed Changes to the 2020 Plumbing Code of New York State
Issued July 2024

This document is being developed for the purpose of posting a notice of rule in development for the New York State Fire Prevention and Building Code Council (Code Council) and the New York State Department of State. The purpose is to show the final draft proposed changes to the current version of the 2020 Plumbing Code of New York State (2020 PCNYS). Separate documents will exist for each of the current NYS specific code books. This document **is not intended to include** all of the proposed code language; it only contains those sections of code that are proposed to be new or modified. Please note that unaltered portions of the 2020 code books are not included within this document and should be considered to remain the same for this code update.

This document is the final draft of the notice of rule in development being released for comment from the public and the Code Council. Accordingly, the Yellow highlighted text included in earlier versions to denote the changes from earlier versions of the documents has been removed.

Please note:

- Chapter 1's are included as a separate document for all of the code books
- This document does not include grammatical, punctuation, and simple word clarifications that do not change the intent or meaning of a provision.
- Where a change is made by NYS, rather than an ICC level change, "[NY]" is added to the section numbers; however, grammatical and punctuation changes made by NYS that do not change the intent or meaning of a provision are not denoted by [NY]. Similarly, updates made by NYS to cross-referenced sections or sections where the only change is to the referenced code book (i.e. ~~International Plumbing Code~~ Plumbing Code of New York State are not denoted by [NY]).
- Changes to the existing text are denoted in the following manner:
  - Text insertions: TEXT
  - Text deletions: ~~TEXT~~
- Cross-referenced code sections may not be accurate and/or may change based on existing and future modifications. Code sections are based on the anticipated 2024 ICC code section.
- Where multiple code change proposals are listed together, it represents multiple ICC code changes that dealt with the same code sections and were therefore consolidated.
- Some code changes involve complex tables, lists, or lengthy sections in which a small change was made to only a portion of the section. In those instances, the entire section, table, list, etc. that was unchanged may not be included below. A note has been added to indicate when that happens (i.e. "Items 1 through 13 remain unchanged").
- Reference to Chapter 11 of the Residential Code of New York State for energy provisions will be corrected in the notice of proposed rule making documents to reference the corresponding provision from the Energy Conservation Construction Code of New York State.

Chapter 2 – Definitions

[BG] AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.

[A] APPROVED AGENCY. An established and recognized organization ~~agency~~ that is regularly engaged in conducting tests or furnishing inspection services, or furnishing product evaluation or certification where such organization ~~agency~~ has been *approved* by the *building official*.

COPPER ALLOY. A homogenous mixture of two or more metals in which copper is the primary component, such as brass and bronze.

DUAL FLUSHING DEVICE. A feature that allows the user to flush a water closet with either a reduced or full volume of water, depending on bowl contents.

[BE] FAMILY OR ASSISTED-USE TOILET FACILITY. A room separate from other toilet facilities intended to be used by all persons regardless of sex, families and those needing assisted care having; an independent entrance, not more than one adult-height water closet, and is permitted to have one adult-height lavatory, and no more than one urinal, one child height water closet and one child height lavatory.

[BE]FAMILY OR ASSISTED-USE BATHING ROOM. A room separate from other bathing rooms intended to be used by all persons regardless of sex, families and those needing assisted care having; an independent entrance, not more than one shower or bathtub, not more than one adult-height water closet and one adult- height lavatory, and is permitted to have one urinal, one child height water closet and one child height lavatory.

[NY] GREASE INTERCEPTOR. Also known as "grease trap." Includes any of the following types of systems:

Fats, oils and greases (FOG) disposal system. A plumbing appurtenance that reduces nonpetroleum fats, oils and greases in effluent by separation or mass and volume reduction.

Gravity. Plumbing appurtenances of not less than 300~~500~~ gallons (1136 ~~1893~~ L) capacity that are installed in the sanitary drainage system to intercept free-floating fats, oils and grease from wastewater discharge. Separation is accomplished by gravity during a retention time of not less than 30 minutes.

Hydromechanical. Plumbing appurtenances that are installed in the sanitary drainage system to intercept free-floating fats, oils and grease from wastewater discharge. Continuous separation is accomplished by air entrainment, buoyancy and interior baffling.

GROUP WASH FIXTURE. A type of lavatory that allows more than one person to utilize the fixture at the same time. The fixture has one or more drains and one or more faucets.

PEER REVIEW. An independent and objective technical review conducted by an approved third party.

PRIVATE. In the classification of plumbing fixtures, "private" applies to fixtures ~~in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual.~~ that are not public.

PUBLIC OR PUBLIC UTILIZATION. In the classification of plumbing fixtures, "public" applies to fixtures~~fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars, public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted.~~ with unrestricted exposure to walk-in traffic.

PUSH-FIT FITTING. A mechanical fitting that joins pipes or tubes and achieves a seal by mating the pipe or tube into the fitting.

SERVICE SINK. A sink exclusively intended to be used for facilitating the cleaning of a building or tenant space.

TOILET FACILITY. A room or space that contains not less than one water closet and one lavatory.

Multiple-user toilet facility. A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

Single-user toilet facility. A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

WATER DISPENSER. A plumbing fixture that is manually controlled by the user for the purpose of dispensing potable drinking water into a receptacle such as a cup, glass or bottle. Such fixture is connected to the potable water distribution system of the premises. ~~This definition includes a freestanding apparatus for the same purpose that is not connected to the potable water distribution system and that is supplied with potable water from a container, bottle or reservoir.~~

Chapter 3 – General Regulations

305.6 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 11/4 inches (32 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. ~~Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).~~ Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.

305.6.1 Shield plates. Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).

305.8 Expansive Soil. Where expansive soil is identified under buildings in accordance with Section 1803.5.3 of the International Building Code, but not removed in accordance with Section 1808.6.3 of the International Building Code, plumbing shall be protected in accordance with Section 305.8.1 or 305.8.2.

305.8.1 Non-Isolated Foundations. Under foundations with slabs that are structurally supported by a subgrade, buried plumbing shall be permitted.

305.8.2 Isolated Foundations. Under foundations with a slab or framing that structurally spans over an under-floor space that isolates the slab or framing from the effects of expansive soil swelling and shrinking in accordance with Section 1808.6.1 of the International Building Code, the plumbing shall be suspended so that plumbing, hangers and supports are isolated, by a voidspace, from the effects of expansive soil swelling and shrinking.

Exception: Plumbing shall be permitted to be buried where it provides drainage of an under-floor space.

To protect the voidspace, soil shall be sloped, benched or retained in accordance with an approved design methodology. Plumbing, hangers and supports below the slab or framing shall not be permitted to be in contact with soil or any assemblage of materials that is in contact with soil within the active zone. A slab and plumbing shall not be permitted to be lifted as an assembly to create the voidspace unless the under-floor space is a crawlspace with access to allow inspection of plumbing after lifting.

Exception: Plumbing shall be permitted to be buried where it provides drainage of an under-floor space.

Organic materials subject to decay shall not be used for hangers, supports and soil retention systems. Materials subject to corrosion shall not be used for hangers, supports and soil retention systems unless protected in an approved manner.

Where plumbing transitions to a buried condition beyond the perimeter of the foundation, an adequately flexible expansion joint shall be provided in the plumbing system to accommodate the effects of expansive soil swelling and shrinking.

306.2.4 Tracer wire. For plastic sewer piping, an insulated copper tracer wire or other approved conductor shall be installed adjacent to and over the full length of the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate at the cleanout between the building drain and building sewer. The tracer wire size shall be not less than 14 American Wire Gauge (2.5 mm^2) and the insulation type shall be listed for direct burial.

307.2 Cutting, notching and boring in wood framing ~~or bored holes~~. ~~A~~ The cutting, notching, and boring of structural wood framing members shall ~~not be cut, notched or bored in excess of limitations specified in~~ comply with Section 2308.10 of the *International Building Code*.

307.3 Cutting and notching of cold-formed steel framing. The cutting and notching of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for nonstructural members.

308.2 Piping seismic supports. Where earthquake loads are applicable in accordance with the International Building Code, plumbing piping supports, anchorage, and bracing shall be designed and installed for ~~the~~ seismic forces in accordance with Chapter 16 of the Building Code of New York State.

TABLE 308.5 HANGER SPACING

The remaining portion of the table is unchanged and omitted for clarity.

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
~~Brass pipe~~	~~10~~	~~10~~

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. For sizes 2 inches and smaller, a guide shall be installed midway between required vertical supports. Such guides shall prevent pipe movement in a direction perpendicular to the axis of the pipe.

308.9 Parallel water distribution systems. Piping bundles for manifold systems shall be supported in accordance with Table 308.5. Support at changes in direction shall be in accordance with the manufacturer's instructions. Where hot water piping is bundled with cold ~~or hot~~ water piping, ~~each~~ hot water ~~pipe~~ piping shall be insulated in accordance with Section 607.5.

SECTION 310 ~~WASHROOM AND~~ TOILET FACILITIES ~~ROOM~~ REQUIREMENTS.

310.1 Light and ventilation. ~~Washrooms and toilet rooms~~ Toilet facilities shall be illuminated and ventilated in accordance with the International Building Code and International Mechanical Code.

310.3 Interior finish. Interior finish surfaces of toilet facilities ~~rooms~~ shall comply with the International Building Code.

311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewered type shall conform to PSAI Z4.3 or to IAPMO/ISO 30500.

312.4 Drainage and vent vacuum test. The portion of the drainage and vent system under test shall be evacuated of air by a vacuum type pump to achieve a uniform gauge pressure of negative 5 pounds per square inch or a negative 10 inches of mercury column (negative 34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperatures or the seating of gaskets shall be made prior to the beginning of the test period.

~~**312.10.2**~~ **312.11.2 Testing.** Reduced pressure principle, double check, pressure vacuum breaker, reduced pressure detector fire protection, double check detector fire protection, and spill-resistant vacuum breaker backflow preventer assemblies and hose connection backflow preventers shall be tested at the time of installation, immediately after repairs or relocation and at least annually. 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, CSA B64.10 or CSA B64.10.1. Test gauges shall comply with ASSE 1064.

[M] 314.1.1 Identification. The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary or secondary drain.

[M] 314.2.1.1 Condensate discharge. Condensate drains shall not directly connect to any plumbing drain, waste or vent pipe. Condensate drains shall not discharge into a plumbing fixture other than a floor sink, floor drain, trench drain, mop sink, hub drain, standpipe, utility sink or laundry sink. Condensate drain connections to a lavatory wye branch tailpiece or

to a bathtub overflow pipe shall not be considered as discharging to a plumbing fixture. Except where discharging to grade outdoors, the point of discharge of condensate drains shall be located within the same occupancy, tenant space or dwelling unit as the source of the condensate.

[M] 314.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be ABS, cast-iron, copper and copper-alloy, CPVC, cross-linked polyethylene, galvanized steel, PE-RT, polyethylene, polypropylene, PVC, or PVDF pipe or tubing. 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 be not less than 3/4-inch (19.1 mm) pipe size 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 Table 314.2.2.

[M] 314.2.3.3 Identification. The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary or secondary drain.

Chapter 4 – Fixture, Faucets, and Fixture Fittings

[NY] TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)

The remaining portion of the table is unchanged and omitted for clarity.

NO.	CLASSIFI-CATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly[g]	**Cells that are not modified, and are omitted for clarity**							
2	Business	Buildings for the transaction of business, non-medical professional services, other services involving merchandise, office buildings, banks, ambulatory care, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink[e]
		Ambulatory care facilities and Outpatient clinics	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 50			1 per 100	1 service sink per floor

5	Institutional	Alcohol and drug centers[b] Congregate care facilities[b] Group homes[b] Halfway houses[b] Social rehabilitation facilities[b] Foster care facilities[b]		1 per 10 care recipients	1 per 10 care recipients	1 per 8 care recipients		
		Assisted living and residential board and care facilities with care recipients who receive Custodial care ~~facilities~~	Sleeping units for care recipients[c]	1 per 2 ~~10~~ sleeping units	1 per 2 ~~8~~ sleeping units	1 per 8 sleeping units	~~1 per 100~~	~~1 service sink~~
			Dwelling units for care recipients	1 per dwelling unit	1 per dwelling unit	1 per dwelling unit		1 kitchen sink per dwelling unit
			Employee facilities	1 per 60 care recipient units	1 per 60 care recipient units		1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient units.	1 per 75 care recipient units.			
		Nursing homes	Sleeping units for care recipients[c]	1 per 2 care recipient sleeping units	1 per 2 care recipient sleeping units	1 per 8 care recipient sleeping units		
			Employee facilities	1 per 60 care recipient units	1 per 60 care recipient sleeping units		1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient units.	1 per 75 care recipient sleeping rooms			
		~~Medical care recipients in hospitals and nursing homes~~ Hospitals[b]	Sleeping units for care recipients	1 per ~~room~~[e] care recipient sleeping unit	1 per ~~room~~[e] care recipient sleeping unit		1 per 100	~~1 service~~ sink per floor
			Care recipient treatment areas	1 per 25 care recipient treatment rooms	1 per 50 care recipient treatment rooms		1 per 100	
			Employee facilities	1 per 25 care recipient sleeping units or treatment room	1 per 35 care recipient sleeping units or treatment room	1 per 50 care recipient sleeping units or treatment room	1 per 100	1 service sink per floor

			Visitor facilities	1 per 75 care recipient sleeping room or treatment room	1 per 100 care recipient sleeping room or treatment room	1 per 50 care recipient sleeping room or treatment room		1 per 500	—
		Employees in hospitals and nursing homes[b]		1 per 25		1 per 35	—	1 per 100	—
		Visitors in hospitals and nursing homes		1 per 75		1 per 100	—	1 per 500	—
		Prisons[b]		1 per cell		1 per cell	1 per 15	1 per 100	1 service sink
		Reformatories, detention centers, and correctional centers[b]	Cells	1 per 15		1 per 15	1 per 15	1 per 100	1 service sink
			Congregate Living Facilities	1 per 15		1 per 15	1 per 15	1 per 100	1 service sink
			Employees ~~in reformitories, detention centers and correctional centers~~[b]	1 per 25		1 per 35	—	1 per 100	—
		Adult day care and child day care		1 per 15		1 per 15	1	1 per 100	1 service sink
7	Residential	Hotels, motels, boarding houses (transient)		1 per *dwelling* or sleeping unit		1 per *dwelling* or sleeping unit	1 *dwelling* or per sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)		1 per 10		1 per 10	1 per 8	1 per 100	1 service sink
		Apartment house		1 per dwelling or sleeping unit		1 per dwelling or sleeping unit	1 per dwelling or sleeping unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer ~~persons~~ care recipients receiving custodial care		1 per 10 care recipients		1 per 10 care recipients	1 per 8 care recipients	~~1 per 100~~	1 ~~service~~ kitchen sink

		One- and two-family dwellings and lodging houses with five or fewer guestrooms	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
		Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the International Building Code.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single- user toilet facility ~~occupant toilet room~~ with one water closet and one lavatory serving not more than two adjacent ~~patient~~ care recipient sleeping units shall be permitted provided that each ~~patient~~ care recipient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

f. [NY] ~~Reserved.~~ The required number and type of plumbing fixtures for indoor and outdoor public swimming pools shall be in accordance with Section 403.1.4.

g. [NY] Facilities subject to mass gatherings which are likely to attract 5,000 people or more and continue for 24 hours or more shall meet the provisions of this Code and Subpart 7-4 of the New York State Department of Health regulations (10NYCRR, Part 7, Subpart 7-4), whichever is more restrictive.

403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. 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.

Exceptions:

1. The total occupant load shall not be required to be divided in half where approved statistical data indicate a distribution of the sexes of other than 50 percent of each sex.
2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1.

403.1.2 Fixtures in Single-user toilet and bathing room ~~fixtures~~. The plumbing fixtures located in single-user toilet and single-user bathing rooms, including family or assisted-use toilet facilities and bathing rooms ~~that are required by Section 1109.2.1 of the International Building Code~~, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. The number of fixtures in single-user toilet facilities, single-user bathing rooms and family or assisted-use toilet facilities shall be deducted proportionately from the required gender ratios of Table 403.1. Single-user toilet facilities and bathing rooms, and family or assisted-use toilet facilities ~~rooms~~ and bathing rooms shall be identified as being available for use by ~~either~~ all persons regardless of sex.

The total number of fixtures be based on the required number of separate facilities or based on the aggregate of any combination of single-user or multiple-user facilities.

403.1.3 Lavatory distribution. Where two or more toilet facilities ~~rooms~~ are provided for each sex, the required number of lavatories shall be distributed proportionately to the required number of male and female designated water closets.

[NY] 403.1.4 Shower requirements for swimming pools. Indoor and outdoor swimming pool facilities shall have dressing facilities and not less than one cleansing shower for males, and one cleansing shower for females for every 7500 square feet (697 m^2), or portion thereof. Where the result of the fixture calculation is a portion of a whole number, the result shall be rounded up to the nearest whole number. In addition to the cleansing showers, not less than one rinse shower shall be provided on the deck of or at the entrance of each pool.

403.2 Separate facilities. Where plumbing fixtures are required, separate toilet facilities shall be provided for each sex.

Exceptions:

1. Separate toilet facilities shall not be required for dwelling units and sleeping units.
2. Separate toilet facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate toilet facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Separate toilet facilities shall not be required in business occupancies in which the maximum occupant load is 25 or fewer.
5. Separate toilet facilities shall not be required to be designated by sex where ~~S~~single-user toilet ~~and bathing~~ rooms are provided in accordance with Section 403.1.2 ~~shall be designated as gender neutral~~.
6. Separate toilet facilities shall not be required where rooms having both water closets and lavatory fixtures are ~~multiuser facilities~~ designed for use by ~~both sexes are~~ all persons regardless of sex and privacy is provided for water closets in accordance with Section ~~403.1.4~~ 405.3.4 and for urinals in accordance with Section 405.3.5.

~~**403.2.1 Family or assisted-use toilet facilities serving as separate facilities**. Where a building or tenant space requires a separate toilet facility for each sex and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities shall be permitted to serve as the required separate facilities. Family or assisted-use toilet facilities shall not be required to be identified for exclusive use by either sex as required by Section 403.4.~~

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 toilet facilities shall be from within the building or from the exterior of the building. ~~Routes shall comply with the accessibility requirements of the International Building Code.~~ The public shall have access to the required toilet facilities at all times that the building is occupied.

403.3.2 Prohibited ~~toilet room~~ location for toilet facilities. Toilet facilities ~~rooms~~ shall not open directly into a room used for the preparation of food for service to the public.

403.3.3 Location of toilet facilities in occupancies other than malls. In occupancies other than covered and open 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~~ Exceptions:

1. The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved.
2. The location and maximum distances of travel to required public and employee facilities in Group S occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved.

403.3.5 Pay toilet facilities. Where pay toilet facilities are installed, such toilet facilities shall be in excess of the required minimum toilet facilities. Required toilet facilities shall be free of charge.

403.3.6 Door locking. Where a toilet facility ~~room~~ is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet facilities ~~rooms~~.

Exception: The egress door of a multiple occupant toilet room shall be permitted to be lockable from inside the room where all the following criteria are met:

1. The egress door shall be lockable from the inside of the room only by authorized personnel by the use of a key or other approved means.
2. The egress door shall be readily openable from the toilet room in accordance with *International Building Code* Section 1010.2.
3. The egress door shall be capable of being unlocked from outside the room with a key or other approved means.

403.4 Signage. Required *public* toilet facilities shall be provided with signs that ~~designate the~~ indicate whether the facility is to be used by males, by females, or by all persons regardless of sex~~, as required by Section 403.2~~. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111 of the International Building Code.

403.5 Drinking fountain location. Drinking fountains shall not be required to be located in individual tenant spaces provided that public drinking fountains are located within a distance of travel of 500 feet (152 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Where the tenant space is in a covered or open mall, such distance shall not exceed 300 feet (91 m). ~~Drinking fountains shall be located on an accessible route.~~

403.6 Service sink location. Service sinks shall not be required to be located in individual tenant spaces in a covered mall provided that service sinks are located within a distance of travel of 300 feet (91 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Service sinks shall be located on an accessible route.

404.1 Where required. Accessible plumbing facilities and fixtures shall be provided in accordance with Chapter 11 of the Building Code of New York State.

404.2 Accessible fixture requirements. Accessible plumbing fixtures shall be installed ~~with the clearances, heights, spacings and arrangements~~ in accordance with ICC A117.1.

404.3 Exposed pipes and surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9 or ASTM C1822.

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. Where partitions or other obstructions do not separate adjacent water closets, urinals, or bidets, the fixtures shall not be set closer than 30 inches (762 mm) center to center between adjacent fixtures or adjacent water closets, urinals, or bidets. There shall be not less than a 21-inch (533 mm) clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall-hung water closets.

Exception: An accessible children's water closet shall be set not closer than 12 inches (305 mm) from its center to the required partition or to the wall on one side.

405.3.2 Public lavatories. In employee and *public* toilet facilities ~~rooms~~, the required lavatory shall be located in the same room as the required water closet.

405.3.4 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 facilities ~~rooms~~ located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 housing areas.

405.3.5 Urinal partitions. Each urinal utilized by the *public* or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater 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 not less than 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 backwall surface, whichever is greater.

Exceptions:

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

405.4.3 Securing wall-hung water closet bowls. Wall-hung water closet bowls shall be supported by a concealed metal carrier that is attached to the building structural members so that strain is not transmitted to the ~~closet~~ fixture connector or any other part of the plumbing system. The carrier shall conform to ASME A112.6.1M or ASME A112.6.2.

407.2 Bathtub waste outlets and overflows. Bathtubs shall be equipped with a waste outlet ~~and an overflow outlet. The outlets shall be connected to waste tubing or piping~~ that is not less than 1½ inches (38 mm) in diameter. The waste outlet shall be equipped with a watertight stopper. Where an overflow is installed in a bathtub, the piping from the overflow outlet shall be connected upstream of the fixture trap. The overflow outlet shall discharge to the trap whether the waste outlet is closed or open.

408.1 Approval. Bidets shall conform to ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4.

408.3 Bidet water temperature. The discharge water temperature from a bidet fitting shall be limited to not greater than 110°F (43°C) by a water-temperature-limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 ~~or CSA B125.3.~~

410.1 Approval. Drinking fountains shall conform to ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4. ~~and *water coolers* shall conform to ASHRAE 18.~~ Drinking fountains, *water coolers* and *water dispensers* shall conform to NSF 61, Section 9. Electrically operated, refrigerated drinking *water coolers* and *water dispensers* shall be listed and labeled in accordance with UL 399.

410.3 High and low drinking fountains. Where drinking fountains are provided on an exterior site, on a floor or within a secured area, the drinking fountains shall be provided in accordance with Sections 410.3.1 and 410.3.2.

[BE] 410.3.1 ~~High and low drinking fountains~~ Minimum number. ~~Where drinking fountains are required,~~ Not fewer than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.

Exceptions:

1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains.
2. Where drinking fountains are primarily for children's use, the drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

[BE] 410.3.2 More than the minimum number. Where more than the minimum number of drinking fountains specified in Section 410.3.1 is provided, 50 percent of the total number of drinking fountains provided shall comply with the requirements for persons who use a wheelchair and 50 percent of the total number of drinking fountains provided shall comply with the requirements for standing persons.

Exceptions:

1. Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down, provided that the total number of drinking fountains complying with this section equals 100 percent of the drinking fountains.

2. Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

410.4 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies where three or more drinking fountains are required, water dispensers shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.

411.3 Water supply. Where hot and cold water is supplied to an emergency shower or eyewash station, the temperature of the water supply shall only be controlled by a temperature-actuated mixing valve complying with ASSE 1071. Where water is supplied directly to an emergency shower or eyewash station from a water heater, the water heater shall comply with ASSE 1085.

412.2 Hand showers. Hand-held showers shall conform to ASME A112.18.1/CSA B125.1. Hand-held showers shall provide backflow protection in accordance with ASME A112.18.1/CSA B125.1 or shall be protected against backflow by a device complying with ASME A112.18.3 or ASSE 1014.

412.3 Individual shower valves. Individual shower and tub-shower combination valves shall be balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 ~~and.~~ Such valves shall be installed at the point of use. Shower control valves shall be rated for the flow rate of the installed shower head. Shower and tub-shower combination 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 to provide water at a temperature not to exceed 120°F (49°C). In-line thermostatic valves shall not be utilized for compliance with this section.

412.4 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 B125.3, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced pressure/thermostatic valve that conforms to ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and that is installed at the point of use. Where a shower head is individually controlled, shower control valves shall be rated for the flow rate of the installed shower head. 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 to provide water at a temperature not to exceed 120°F (49°C). Access shall be provided to an ASSE 1069 or CSA B125.3 valve.

412.5 Bathtub and whirlpool bathtub valves. ~~The hot water supplied to~~ Bathtubs and whirlpool ~~bathtubs~~ bathtub valves shall ~~be limited to not greater than~~ have or be supplied by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or by a water heater complying with ASSE 1082 or ASSE 1084, except where such ~~protection is otherwise provided by a~~ valves are combination tub/shower ~~valve~~ valves in accordance with Section 412.3. The water-temperature-limiting device required by this section shall be equipped with a means to limit the maximum setting of the device to 120°F (49°C), and, where adjustable, shall be field adjusted in accordance with the manufacturer's instructions to provide hot water at a temperature not to exceed 120°F (49°C). Access shall be provided to water-temperature-limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70.

> **Exception:** Access shall not be required for nonadjustable water-temperature-limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70 and are integral with a fixture fitting, provided that the fixture fitting itself can be accessed for replacement.

412.10 Head shampoo sink faucets. Head shampoo sink faucets shall be supplied with hot water that is limited to not more than 120°F (49°C) ~~by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70~~. Each faucet shall have integral check valves to prevent crossover flow between the hot and cold water supply connections. The means for regulating the maximum temperature shall be one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70.
2. A water heater conforming to ASSE 1082 or ASSE 1084.
3. A temperature-actuated, flow-reduction device conforming to ASSE 1062.

412.11 Prerinse spray valve. Prerinse spray valves for commercial food service shall conform to ASME A112.18.1/CSA B125.1.

412.12 Electrically heated or cooled Water Dispensers. All potable water dispensers directly connected to the plumbing system shall comply with one of the following:

1. Electrically heated or cooled water dispensers shall comply with ASSE 1023.

416.1 Approval. Domestic food waste disposers shall conform to ASSE 1008 and shall be listed and labeled in accordance with UL 430. Commercial food waste disposers shall be listed and labeled in accordance with UL 430. Food waste disposers shall not increase the drainage fixture unit load on the sanitary drainage system.

419.1 Approval. Lavatories shall conform to ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Group wash ~~-up equipment~~ fixtures shall conform to the requirements of Section 402. ~~Every~~ For determining the number of lavatories required by Table 403.1, every 20 inches (508 mm) of rim space of a group wash fixture shall be considered as one lavatory.

419.3 Lavatory waste outlets. Lavatories and group wash fixtures shall have a waste outlet~~s~~ not less than 11/4 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.

419.5 Tempered water for public hand-washing facilities. Tempered water shall be delivered from lavatories and group wash fixtures located in public toilet facilities provided for customers, patrons and visitors. Tempered water shall be delivered through an approved water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 ~~or CSA B125.3~~.

419.6 Soap dispenser. Soap dispensers shall be provided for public lavatories.

421.1 Approval. Prefabricated showers and shower compartments shall conform to ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Shower valves for individual showers shall conform to the requirements of Section 412.3.

421.3.1 Waste fittings. Waste fittings shall conform to ASME A112.18.2/CSA B125.2.

423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120ºF (49ºC) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or by a water heater complying with ASSE 1082 or 1084.

424.2 Substitution for water closets. In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets for males according to Table 403.1 in assembly and educational occupancies. Urinals shall not be substituted for more than 50 percent of the required water closets for males according to Table 403.1 in all other occupancies.

425.1 Approval. Water closets shall conform to the water consumption requirements of Section 604.4 and shall conform to ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. ~~Water closets shall conform to the hydraulic performance requirements of ASME A112.19.2/CSA B45.1. Water closet tanks shall conform to ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Electro-hydraulic water closets shall comply with ASME A112.19.2/CSA B45.1. Water closets equipped with a dual flushing device shall comply with ASME A112.19.14.~~

425.1.1 Hydraulic performance. Water closets shall conform to the hydraulic performance requirements of ASME A112.19.2/CSA B45.1.

425.1.2 Water closet tanks. Water closet tanks shall conform to ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124.

425.1.3 Dual flush water closets. Water closets equipped with a dual flushing device shall comply with ASME A112.19.14.

Chapter 5 – Water Heaters

501.2 Water heater as space heater. Where a combination potable water heating and space heating system requires water for space heating at temperatures greater than 140°F (60°C), a ~~master thermostatic~~ temperature-actuated mixing valve complying with ASSE 1017 shall be provided to limit the water supplied to the potable hot water distribution

system to a temperature of 140°F (60°C) or less. The potability of the water shall be maintained throughout the system. Requirements for combination potable water heating and space heating systems shall be in accordance with the Mechanical Code of New York State.

501.9 Lead Content. Water heaters that are part of the potable water distribution system shall comply with NSF 372 and shall have a weighted average lead content of 0.25 percent or less.

504.7 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.
2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other approved materials.

A plastic pan installed beneath a gas-fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoke developed index of 450 or less when tested in accordance with ASTM E84 or UL 723.

Water heaters installed in pans shall comply with Section 314.2.3.2.

Chapter 6 – Water Supply and Distribution

Revise as follows:

602.3.5 Pumps. Pumps shall be rated for the transport of potable water. Pumps in an individual water supply system shall be constructed and installed so as to prevent contamination from entering a potable water supply through the pump units. Pumps intended to supply drinking water shall conform to NSF 61. Pumps shall be sealed to the well casing or covered with a watertight seal. Pumps shall be designed to maintain a prime and installed such that ready access is provided to the pump parts of the entire assembly for repairs.

[NY] TABLE 604.4 MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS

The remaining portion of the table is unchanged and omitted for clarity.

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY[b]
Lavatory, private	1.~~5~~2 gpm at 60 psi
Shower head[a,c]	1.8 ~~2.5~~ gpm at 80 psi
Sink faucet	~~2.2~~1.8 gpm at 60 psi[d]
Urinal	~~0.5~~ 0.125 gallon per flushing cycle
Water Closet	1.28 gallons per flushing cycle[~~d~~ e]

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. Shower heads shall comply with all requirements for high-efficiency showerheads in ASME A112.18.1/CSA B125.1.

d. Kitchen faucets are permitted to temporarily increase the flow above the maximum rate, but not to exceed 2.2 gpm at 60 psi and must revert to a maximum flow rate of 1.8 gpm at 60 psi upon valve closure.

e. [NY] The flush volume for a dual-flush water closet is defined as the composite, average flush volume of two reduced flushes and one full flush.

TABLE 605.3 WATER SERVICE PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D1527; ASTM D2282
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447
Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F876; AWWA C904; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Ductile iron water pipe	AWWA C151/A21.51; AWWA C115/A21.15
Galvanized steel pipe	ASTM A53
Polyethylene (PE) plastic pipe	ASTM D2239; ASTM D3035; AWWA C901; CSA B137.1
Polyethylene (PE) plastic tubing	ASTM D2737; AWWA C901; CSA B137.1
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	ASTM F1282; CSA B137.9
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic pipe	ASTM D1785; ASTM D2241; ASTM D2672; CSA B137.3
Stainless steel pipe (Type 304/304L)	ASTM A269; ASTM A312; ASTM A778
Stainless steel pipe (Type 316/316L)	ASTM A269; ASTM A312; ASTM A778
Stainless steel tubing (Type 304/304L)	ASTM A269; ASTM A312; ASTM A778
Stainless steel tubing (Type 316/316L)	ASTM A269; ASTM A312; ASTM A778

TABLE 605.4 WATER DISTRIBUTION PIPE

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302

Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447
Cross-linked polyethylene (PEX) plastic tubing	ASTM F876; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Ductile iron pipe	AWWA C115/A21.15; AWWA C151/A21.51
Galvanized steel pipe	ASTM A53
Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pipe	ASTM F1282
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Stainless steel pipe (Type 304/304L)	ASTM A269; ASTM A312; ASTM A778
Stainless steel pipe (Type 316/316L)	ASTM A269; ASTM A312; ASTM A778
Stainless steel tubing (Type 304/304L)	ASTM A269; ASTM A312; ASTM A778
Stainless steel tubing (Type 316/316L)	ASTM A269; ASTM A312; ASTM A778

TABLE 605.5 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL- HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; ASTM F3348; CSA B137.5
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; ASTM F3348; CSA B137.18
Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;
Insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross- linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Malleable iron	ASME B16.3

Metal (~~brass~~ copper alloy) insert fittings for polyethylene/aluminum/polyethylene (PE-AL- PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974
Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Stainless steel (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548; ASTM F3226

TABLE 605.7 VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASTM F1970; CSA B125.3; IAPMO Z1157; MSS SP-122
Copper or copper alloy	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASME B16.34; CSA B125.3; IAPMO Z1157; MSS SP-67; MSS SP-80; MSS SP-110; MSS SP-139
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; CSA B125.3; IAPMO Z1157; NSF 359
Gray iron and ductile iron	AWWA C500; AWWA C504; AWWA C507; IAPMO Z1157; MSS SP-67; MSS SP-70; MSS SP-71; MSS SP-72; MSS SP-78
Polypropylene (PP) plastic	ASME A112.4.14; ASTM F2389; IAPMO Z1157
Polyvinyl chloride (PVC) plastic	ASME A112.4.14; ASTM F1970; IAPMO Z1157; MSS SP-122
Stainless steel (Type 304/304L)	IAPMO Z1157, ASME A112.4.14
Stainless steel (Type 316/316L)	IAPMO Z1157, ASME A112.4.14

605.12.3 Solder joints. Solder joints shall be made in accordance with ASTM B828. Cut tube ends shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. A flux conforming to ASTM B813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B32. The joining of water supply piping shall be made with lead-free solder and fluxes. “Lead free” shall mean a chemical composition equal to or less than 0.2-percent lead. Solder and flux joining pipe or fittings intended to supply drinking water shall conform to NSF 61.

605.13.6 Solder joints. Solder joints shall be made in accordance with the methods of ASTM B828. Cut tube ends shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. A flux conforming to ASTM B813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B32. The joining of water supply piping shall be made with lead-free solder and flux. “Lead free” shall mean a chemical composition equal to or less than 0.2-percent lead. Solder and flux joining pipe or fittings intended to supply drinking water shall conform to NSF 61.

605.13.7 Push-fit fitting joints. Push-fit fittings ~~joints~~ shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer’s instructions.

605.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe manufacturer's installation instructions. Solvent-cement joints shall be permitted above or below ground. Where such instructions require that a primer be used, the primer shall be applied to the joint surfaces and a solvent cement orange in color and conforming to ASTM F493 shall be applied to the joint surfaces. The joint shall be made in accordance with ASTM D2855 and while the cement is fluid. Where such instructions allow for a one-step solvent cement, yellow or green in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made in accordance with ASTM F3328 and while the cement is wet. ~~and in accordance with ASTM D2846 or ASTM F493. Solvent-cemented joints shall be permitted above or below ground.~~

605.15.2 Solvent cementing. Joint surfaces shall be clean and free from moisture, and an approved primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~ ASTM D2855. Solvent cement joints shall be permitted above or below ground.

Exception: A primer is not required where all of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM F493.
2. The solvent cement used is yellow in color.
3. The solvent cement is used only for joining / -inch (12.7 mm) through 2-inch-diameter (51 mm) CPVC/AL/CPVC pipe and CPVC fittings.
4. The CPVC fittings are manufactured in accordance with ASTM D2846.
5. The joint is made in accordance with ASTM F3328.

606.1 Location of full-open valves. *Full-open valves* shall be installed in the following locations:

1. On the building water service pipe from the public water supply near the curb.
2. On the water distribution supply pipe at the entrance into the structure.
   2.1. In multiple-tenant buildings three stories or less in height, where a common water supply piping system is installed to supply other than one and two-family dwellings, a main shutoff valve shall be provided for each tenant.
3. On the discharge side of every water meter.
4. On the base of every water riser pipe in *occupancies* other than multiple-family residential occupancies that are two stories or less in height and in one- and two-family residential *occupancies*.
5. On the top of every water down-feed pipe in *occupancies* other than one- and two-family residential *occupancies*.
6. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops.
7. On the water supply pipe to a gravity or pressurized water tank.
8. On the water supply pipe to every water heater.

606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one- and two-family residential *occupancies*, and other than in individual dwelling or sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar *occupancies*.
2. On the water supply pipe to each sillcock.
3. On the water supply pipe to each appliance or mechanical equipment.

~~**606.7 Labeling of water distribution pipes in bundles.** Where water distribution piping is bundled at installation, each pipe in the bundle shall be identified using stenciling or commercially available pipe labels. The identification shall indicate the pipe contents and the direction of flow in the pipe. The interval of the identification markings on the pipe shall not exceed 25 feet (7620 mm). There shall be not less than one identification label on each pipe in each room, space or story.~~

607.1.1 Temperature limiting means. A thermostat control for a water heater shall ~~not~~ only serve as the temperature limiting means for the purposes of complying with the requirements of this code for maximum allowable hot or tempered water delivery temperature at fixtures where the water heater complies with ASSE 1082 or ASSE 1085.

607.1.2 Tempered water temperature control. Tempered water shall be ~~supplied through a water temperature~~ controlled by one the following:

1. A limiting device ~~that conforms~~ conforming to ASSE 1070/ASME A112.1070/CSA B125.70 ~~and shall limit the tempered water to not greater than 110°F (43°C).~~ and set to not greater than 110°F (43°C).
2. A thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.
4. A water heater conforming to ASSE 1084.

This provision shall not supersede the requirement for protective shower valves in accordance with Section 412.3.

607.2.1 Commercial energy provisions. In occupancies that are required to comply with the Commercial provisions of the International Energy Conservation Code, the developed length of hot or tempered water piping shall limited in accordance with Sections C404.5.1 through C404.5.2.1 of that code.

607.2.3 Piping for recirculation systems having ~~master thermostatic~~ temperature-actuated mixing valves. Where a ~~thermostatic mixing~~ temperature-actuated mixing valve is used in a system with a hot water recirculating pump, the hot water or tempered water return line shall be routed to the cold water inlet pipe of the water heater and the cold water inlet pipe or the hot water return connection of the ~~thermostatic~~ temperature-actuated mixing valve.

TABLE 608.1 APPLICATION OF BACKFLOW PREVENTERS

The remaining portion of the table is unchanged and omitted for clarity.

DEVICE	DEGREE OF HAZARD[a]	APPLICATION[b]	APPLICABLE STANDARDS
Backflow prevention assemblies:			
Double check backflow prevention assembly ~~and double check fire protection backflow prevention assembly~~	Low hazard	Backpressure or backsiphonage Sizes ~~3/8″–16″~~ 1/4"-16"	ASSE 1015; AWWA C510; CSA B64.5; CSA B64.5.1
Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage Sizes ~~2″–~~ 1"– 16″	ASSE 1048
Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2″–2″	ASSE 1020; CSA B64.1.2
Reduced pressure principle backflow prevention assembly ~~and reduced pressure principle fire protection backflow assembly~~	High or low hazard	Backpressure or backsiphonage Sizes ~~3/8”~~ 1/4"″–16″	ASSE 1013; AWWA C511; CSA B64.4; CSA B64.4.1
Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backsiphonage or backpressure (automatic ~~Fire~~ sprinkler systems)	ASSE 1047
Spill-resistant vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/4″–2″	ASSE 1056; CSA B64.1.3
Backflow preventer plumbing devices:			
Antisiphon-type fill valves for gravity water closet flush tanks	High hazard	Backsiphonage only	ASSE 1002/ASME A112.1002/CSA B125.12; CSA B125.3

Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes ~~1/4″–3/8″~~ 1/4"-1/2"	ASSE 1022
Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4″–3/4″	ASSE 1012; CSA B64.3
Backflow preventer with intermediate atmospheric vent and pressure-reducing valve.	Low hazard	Backpressure or backsiphonage Sizes 1/2"-3/4"	ASSE 1081
Dual-check-valve-type backflow preventer	Low hazard	Backpressure or backsiphonage Sizes 1/4″–2"	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″	ASME A112.21.3; 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″	ASME A112.21.3; ASSE 1011; CSA B64.2; CSA B64.2.1
Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and backsiphonage Sizes 1/8" - 8"	ASSE 1035; CSA B64.7
Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only Sizes ~~1/4″–4″~~	ASSE 1001; CSA B64.1.1

For SI: 1 inch = 25.4 mm.

a. Low hazard—See Pollution (Section 202).

b. High hazard—See Contamination (Section 202).

c. See Backpressure, low head (Section 202, Backflow). See Backsiphonage (Section 202, Backflow).

608.14.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012, ASSE 1081, or 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.

608.15.2.1 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. The indirect waste receptor and drainage piping shall be sized to drain the maximum discharge flow rate from the relief port as published by the backflow preventer manufacturer.

608.17.2 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, ASSE 1081, or 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, CSA B64.4 or AWWA C511.

608.17.1.2 Coffee machines and noncarbonated drink dispensers. The water supply connection to each coffee machine and each noncarbonated beverage dispenser shall be protected against backflow by a backflow preventer conforming to ASSE 1022, ~~or~~ ASSE 1024, ASSE 1032 or protected by an *air gap*.

608.17.4 Connections to automatic ~~fire~~ sprinkler systems and standpipe systems. The potable water supply to automatic ~~fire~~ sprinkler systems and standpipe systems shall be protected against backflow by a double check backflow prevention assembly, a double check fire protection backflow prevention assembly or a reduced pressure principle fire protection backflow prevention assembly.

Exceptions:

1. Where systems are installed as a portion of the water distribution system in accordance with the requirements of this code and are not provided with a fire department connection, isolation of the water supply system shall not be required.
2. Isolation of the water distribution system is not required for deluge, preaction or dry pipe systems.

608.17.4.1 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 prevention assembly or a reduced pressure principle fire protection backflow prevention assembly. Where chemical additives or antifreeze are added to only a portion of an automatic ~~fire~~ sprinkler system or standpipe system, the reduced pressure principle backflow prevention assembly or the reduced pressure principle fire protection backflow prevention assembly 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 an atmospheric vacuum breaker conforming to ASSE 1001 or CSA B64.1.1.

609.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following *occupancies*: Group I-1, Group I- 2, ~~Group B~~ ambulatory care facilities, medical offices, research and testing laboratories, and Group F facilities manufacturing pharmaceutical drugs and medicines.

609.2 Water service for Group I-2, Condition 2 facilities. ~~Hospitals~~ Group I-2, Condition 2 facilities shall have not fewer than ~~a minimum of~~ two water service pipes ~~installed in such a manner so as to minimize the potential for an interruption of the supply of water in the event of a water main or water service pipe failure.~~ sized such that with the loss of the largest service pipe, the remaining service pipes will meet the water demand for the entire facility. Each water service shall have a shutoff valve in the building and a shutoff valve at the utility-provided point of connection to the water main or other source of potable water.

609.2.1 Tracer wire for nonmetallic piping. An insulated tracer wire listed for the purpose or other approved conductor shall be installed adjacent to underground nonmetallic piping serving as a water service for a hospital. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the wire insulation type shall be suitable for direct burial.

Chapter 7 – Sanitary Drainage

TABLE 702.1 ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
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	ASTM D2661; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Galvanized steel pipe	ASTM A53
Glass pipe	ASTM C1053
Polyolefin pipe	ASTM F1412; ASTM F3371; CSA B181.3
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	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2

Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1

TABLE 702.2 UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
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	ASTM D2661; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714
Polyolefin pipe	ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3
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	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Type 316L	ASME A112.3.1

For SI: 1 inch = 25.4 mm.

TABLE 702.3 BUILDING SEWER PIPE

MATERIAL	STANDARD
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	ASTM D2661; ASTM D2680; ASTM F628; ASTM F1488; CSA B181.1
Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters, including SDR 42 (PS 20), PS 35, SDR 35 (PS 45), PS 50, PS 100, PS 140, SDR 23.5 (PS 150) and PS 200; with a solid, cellular core or composite wall	ASTM D2751; ASTM F1488
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Concrete pipe	ASTM C14; ASTM C76; CSA A257.1; CSA A257.2
Copper or copper-alloy tubing (Type K or L)	ASTM B75; ASTM B88; ASTM B251
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714
Polyethylene (PE) plastic pipe (Profile Wall)	ASTM F2763

Polyethylene (PE) plastic pipe (corrugated wall)	ASTM F2947/F2947M
Polypropylene (PP) plastic pipe	~~ASTM F2736;~~ ASTM F2764; CSA B182.13
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	ASTM D2665; ASTM F891; ASTM F1488
Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters, including PS 25, SDR 41 (PS 28), PS 35, SDR 35 (PS 46), PS 50, PS 100, SDR 26 (PS 115), PS 140 and PS 200; with a solid, cellular core or composite wall	ASTM F891; ASTM F1488; ASTM D3034; CSA B182.2; CSA B182.4
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C4; ASTM C700

For SI: 1 inch = 25.4 mm.

TABLE 702.4 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters	ASME A112.4.4; ASTM D2661; ASTM F628; CSA B181.1
Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters	ASTM D2751
Cast iron	ASME B16.4; ASME B16.12; ASTM A74; ASTM A888; CISPI 301
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29
Glass	ASTM C1053
Gray iron and ductile iron	AWWA C110/A21.10
Polyethylene	ASTM D2683
Polyolefin	ASTM F1412; ASTM F3371; CSA B181.3
Polyvinyl chloride (PVC) plastic in IPS diameters	ASME A112.4.4; ASTM D2665; ASTM F1866
Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters	ASTM D3034
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D.	ASTM D2949
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Steel	ASME B16.9; ASME B16.11; ASME B16.28
Vitrified clay	ASTM C700

For SI: 1 inch = 25.4 mm.

702.6 Chemical waste drainage system. A chemical waste drainage system, including its vent system, shall be completely ~~separated~~ independent from the sanitary drainage system. Separate drainage systems for chemical waste and vent pipes shall conform to one of the standards indicated in Table 702.6. The chemical waste shall be treated in accordance with Section 803.2 before discharging to the sanitary drainage system. ~~Separate drainage systems for chemical wastes and vent pipes shall be of an approved material that is~~ Chemical waste drainage system pipe and fitting materials shall be resistant to corrosion and degradation for the concentrations of chemicals involved per manufacturer recommendations.

TABLE 702.6 CHEMICAL WASTE DRAINAGE SYSTEM PIPE AND FITTINGS

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC)	ASTM F2618
Borosilicate glass	ASTM C1053
High silicon iron	ASTM A518/A518M
Polyolefin	ASTM F1412, CSA B181.3
Polyvinylidene fluoride (PVDF)	ASTM F1673, CSA B181.3

705.2.4 Mechanical joints above ground. Mechanical joint couplings used above ground to connect ABS pipe to ABS pipe shall be of the shielded type and shall be marked by the manufacturer as being recommended for the application.

705.2.5 Push-fit joints. Push-fit DWV fittings shall be listed and labeled to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

705.10.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F656 shall be applied. Solvent cement not purple in color and conforming to ASTM D2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D2855. Solvent-cement joints shall be permitted above or below ground.

Exception: A primer is not required where both of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM D2564.
2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in nonpressure applications in sizes up to and including 4 inches (102 mm) in diameter.
3. The joint is made in accordance with ASTM F3328.

705.10.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

705.10.5 Mechanical joints above ground. Mechanical joint couplings used above ground to connect PVC pipe to PVC pipe shall be of the shielded type and shall be marked by the manufacturer as being recommended for the application.

705.13.1 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 F1412, ASTM F3371 or CSA B181.3.

705.16 Joints between different materials. Joints between different piping materials shall be made with a mechanical joint ~~of the compression or mechanical sealing type~~ conforming to ASTM C1173, ASTM C1460 or ASTM C1461. Connectors and adapters shall be approved for the application and such joints shall have an elastomeric seal conforming to ASTM C425, ASTM C443, ASTM C564, ASTM C1440, ASTM F477, CSA A257.3M or CSA B602, or as required in Sections 705.16.1 through 705.16.7. 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.

708.1 Cleanouts required. Cleanouts shall be provided for drainage piping in accordance with Sections 708.1.1 through ~~708.1.11~~ 708.1.12.

708.1.6 Cleanout equivalent. A fixture trap or a fixture with integral trap, removable without altering concealed piping, shall be acceptable as a cleanout equivalent.

SECTION 717 RELINING BUILDING SEWERS AND BUILDING DRAINS

717.1 General. This section shall govern the relining of existing building sewers and building drainage piping.

717.2 Applicability. The relining of existing building sewers and building drainage piping shall be limited to gravity drainage piping 4 inches (102 mm) in diameter and larger. The relined piping shall be of the same nominal size as the existing piping.

717.3 Preinstallation requirements. Prior to commencement of the relining installation, the existing piping sections to be relined shall be descaled and cleaned. After the cleaning process has occurred and water has been flushed through the system, the piping shall be inspected internally by a recorded video camera survey.

717.3.1 Preinstallation recorded video camera survey. The video survey shall include verification of the project address location. The video shall include notations of the cleanout and fitting locations, and the approximate depth of the existing piping. The video shall also include notations of the length of piping at intervals not greater than 25 feet (7620 mm).

717.4 Permitting. Prior to permit issuance, the code official shall review and evaluate the preinstallation recorded video camera survey to determine if the piping system is capableable to be relined in accordance with the proposed lining system manufacturer's installation requirements and applicable referenced standards.

717.5 Prohibited applications. Where review of the preinstallation recorded video camera survey reveals that piping systems are not installed correctly or defects exist, relining shall not be permitted. The defective portions of piping shall be exposed and repaired with pipe and fittings in accordance with this code. Defects shall include, but are not limited to, backgrade or insufficient slope, complete pipe wall deterioration or complete separations such as from tree root invasion or improper support.

717.6 Relining materials. The relining materials shall be manufactured in compliance with applicable standards and certified as required in Section 303. Fold-and-form pipe reline materials shall be manufactured in compliance with ASTM F1504 or ASTM F1871.

717.7 Installation. The installation of relining materials shall be performed in accordance with the manufacturer's installation instructions, applicable referenced standards and this code.

717.7.1 Material data report. The installer shall record the data as required by the relining material manufacturer and applicable standards. The recorded data shall include but is not limited to the location of the project, relining material type, amount of product installed and conditions of the installation. A copy of the data report shall be provided to the code official prior to final approval.

717.8 Post-installation recorded video camera survey. The completed, relined piping system shall be inspected internally by a recorded video camera survey after the system has been flushed and flow-tested with water. The video survey shall be submitted to the code official prior to finalization of the permit. The video survey shall be reviewed and evaluated to provide verification that no defects exist. Any defects identified shall be repaired and replaced in accordance with this code.

717.9 Certification. A certification shall be provided in writing to the code official, from the permit holder, that the relining materials have been installed in accordance with the manufacturer's

installation instructions, the applicable standards and this code.

717.10 Approval. Upon verification of compliance with the requirements of Sections 717.1 through 717.9, the code official shall approve the installation.

SECTION 718 REHABILITATION OF BUILDING SEWERS AND BUILDING DRAINS

[NY] 718.1 Cure-in-place. Cure-in-place rehabilitation of building sewer piping and sewer service lateral piping shall be in accordance with ASTM F1216, ASTM F1743, ASTM F2561, or ASTM F2599. Hydrophilic rings or gaskets in cure-in-

place rehabilitation of building sewer piping and sewer service laterals shall be in accordance with ASTM F3240 to ensure water tightness and elimination of ground water penetration.

Chapter 9 - Vents

901.3 Chemical waste drainage vent systems. The vent system for a chemical waste drainage system shall be independent of ~~the sanitary vent system and shall terminate separately~~ any sanitary drainage vent system. The termination of a chemical waste drainage vent system shall be through the roof to the outdoors or to an air admittance valve that complies with ASSE 1049. Air admittance valves for chemical waste drainage systems shall be constructed of one of the materials ~~approved in accordance with~~ Section indicated in Table 702.6 and shall be tested for chemical resistance in accordance with ASTM F1412.

902.1.1 Chemical waste drainage system vents. The pipe and fitting materials for a chemical waste drainage vent system shall be in accordance with Section 702.6. The methods utilized for construction and installation of such venting system shall be in accordance with the pipe and fitting manufacturers' instructions.

SECTION 903 VENT TERMINALS

903.1 ~~Roof extension~~ Vent terminal required. ~~Open vent pipes that extend through a roof shall be terminated not less than [NUMBER] inches (mm) above the roof. Where a roof is to be used for assembly or as a promenade, observation deck, sunbathing deck or similar purposes, open vent pipes shall terminate not less than 7 feet (2134 mm) above the roof.~~ The vent pipe shall terminate by extending to the outdoors through the roof or the side wall in accordance with one of the methods identified in Sections 903.1.1 through 903.1.4.

[NY] 903.1.1 Roof extension unprotected. Open vent pipes that extend through a roof shall be terminated not less than 6 inches (150 mm) above the roof or 6 inches (150 mm) above the anticipated snow accumulation, whichever is greater.

903.1.2 Roof used for recreational or assembly purposes. Where a roof is to be used as a promenade, restaurant, bar, or sunbathing deck, as an observation deck, or for similar purposes, open vent pipes shall terminate not less than 7 feet (2134 mm) above the roof.

903.1.3 Protected vent terminal. Where an open vent pipe terminates above a sloped roof and is covered by either a roof-mounted panel (such as a solar collector or photovoltaic panel mounted\ over the vent opening) or a roof element (such as an architectural feature or a decorative shroud), the vent pipe shall terminate not less than 2 inches (51 mm) above the roof surface. Such roof elements shall be designed to prevent the adverse effects of snow accumulation and wind on the function of the vent. The placement of a panel over a vent pipe and the design of a roof element covering the vent pipe shall provide for an open area for the vent pipe to the outdoors that is not less than the area of the pipe, as calculated from the inside diameter of the pipe. Such vent terminals shall be protected by a method that prevents birds and rodents from entering or blocking the vent pipe opening.

903.1.4 Sidewall vent terminal. Vent terminals extending through the wall shall terminate not less than 10 feet (3048 mm) from the lot line and 10 feet (3048 mm) above the highest adjacent grade within 10 feet (3048 mm) horizontally of the vent terminal. Vent terminals shall not terminate under the overhang of a structure with soffit vents. Sidewall vent terminals shall be protected to prevent birds and rodents from entering or blocking the vent opening.

~~**903.6 Extension through the wall.** Vent terminals extending through the wall shall terminate at a point not less than 10 feet (3048 mm) from a lot line and not less than 10 feet (3048 mm) above average ground level. Vent terminals shall not terminate under the overhang of a structure with soffit vents. Side wall vent terminals shall be protected to prevent birds or rodents from entering or blocking the vent opening.~~

915.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks, lavatories and drinking fountains. Combination waste and vent systems shall not receive the discharge from a ~~food waste disposer or~~ clinical sink.

Chapter 10 Traps, Interceptors and Separators

1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. 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 (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.4.3. 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 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. Floor drains in multilevel parking structures that discharge to a building storm sewer shall not be required to be individually trapped. Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.
5. Where a hydromechanical grease interceptor serves a food utensil, dishes, pots and pans sink, in accordance with the manufacturer's installation instructions. The branch drain serving the interceptor shall be provided with an emergency floor drain downstream of the interceptor connection, and the branch shall serve only the emergency floor drain and the interceptor. Where the interceptor serves 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). The food utensil, dishes, pots and pans sink shall be required to connect directly with the interceptor.

1002.4.1 Trap seal protection. Trap seals of emergency floor drain traps and trap seals subject to evaporation shall be protected by one of the methods in Sections 1002.4.1.1 through ~~1002.4.1.4~~1002.4.1.5.

1002.4.1.5 Fixture drain connection for trap priming. A fixture drain from a lavatory or hand sink shall serve as a method of providing trap seal protection for an emergency floor drain, a trench drain, or a floor sink where such fixtures are located in the same room. A fixture drain from a drinking fountain shall serve as a method of providing trap seal protection for an emergency floor drain, a trench drain, or a floor sink where such fixtures are in the same room or in a room adjacent to the room having the drinking fountain. The fixture drain shall not be routed on or above the surface of the floor and shall connect to the floor drain, trench drain, or floor sink at a point that is below the flood level rim and above the inlet to the trap of the receiving fixture.

[NY]1003.3 Grease interceptors. *Grease interceptors* shall comply with the requirements of Sections 1003.3.1 through 1003.3.~~8~~9.

[NY]1003.3.9 Safety provisions. New and existing *grease interceptors* shall comply with Section 1003.3.9.1 through 1003.3.9.3.

Exemption. *Grease interceptors* that meet all of the following requirements are exempt from the requirements of this Section:

1. Serve individual *dwelling units*;
2. Are not accessible to or open to the public;
3. Are installed in accordance with the manufacturer's installation instructions;
4. Are maintained in accordance with the applicable provisions of this Code, and the *Property Maintenance Code of New York State*, and the manufacturer's installation instructions; and
5. Are regularly serviced and cleaned to prevent the discharge of oil, grease, 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, and a record of all maintenance, cleaning, and repairs is kept.

[NY] 1003.3.9.1 Expected loads. All *grease interceptors* shall be designed to withstand all expected earth, pedestrian, traffic, and other loads as applicable. Openings in *grease interceptors* that provide access to the grease interceptor shall have covers that are watertight and secure, not capable of sliding, rotating, or flipping to expose the opening, and be capable of withstanding all expected earth, pedestrian, traffic, and other loads as applicable.

[NY] 1003.3.9.2 Preventing unauthorized access. Only authorized individuals shall have access to *grease interceptors*. Access to the *grease interceptor* shall be restricted by at least one of the following means:

1. Covers that can be removed only with tools;
2. Covers with minimum weight of 66 pounds (30 kg);
3. Covers that have a keyed or combination locking device;
4. A permanent barrier such as a fence or wall that: is not less than 48 inches (1219 mm) tall; has installed on any gates or doors in the barrier a self-closing mechanism, a self-latching mechanism with the latch release installed at a minimum of 54 inches (1372 mm) from the finished floor or ground surface, and a keyed or combination locking mechanism; completely surrounds all openings in *grease interceptors* that provide access to the *grease interceptor* separating them from all other purposes and uses other than for service, cleaning, or other maintenance of the *grease interceptor*; and prevents unauthorized individuals from accessing the covers; or
5. An approved alternative method of preventing unauthorized access.

[NY] 1003.3.9.3 Grease interceptor signage. *Grease interceptors* shall be provided with a minimum of one approved sign. The *code official* shall have the authority to require additional signs as necessary to ensure the warning is clearly visible and readable at all times by persons who are in the vicinity of the *grease interceptor*. The *code official* may accept sign(s) designed in conformance with a hazard alerting sign complying with ANSI Z535.2, with a warning hazard classification. Sign(s) shall comply with the following:

1. The sign(s) shall be mounted in a conspicuous location in the vicinity of any cover or covers that provide access to the *grease interceptor*.
2. The sign(s) shall be made of a non-fading, rigid, weather-resistant material suitable for the installation location. Laminated paper shall not be allowed. Adhesive backed signs shall only be allowed for *grease interceptors* that have a depth less than 24-inches when measured from the top of the access cover to the bottom of the tank.
3. The sign(s) shall be in substantial compliance with Figure 1003.3.9.3 below with a separate top and bottom panel with black borders. The top panel shall consist of the word “WARNING” in uppercase black letters with an orange background preceded by a black triangle with an orange exclamation mark. The bottom panel shall consist of the words “ACCESS COVERS SHALL BE SECURED AT ALL TIMES” in uppercase black letters with a white background.

[NY] Figure 1003.3.9.3: Grease Interceptor Warning Sign

4. The sign(s) shall have a minimum nominal width of 14-inches and a minimum nominal height of 10-inches.

   Exception: The sign(s) for *grease interceptors* that have a depth less than 24-inches when measured from the top of the access cover to the bottom of the tank shall have a minimum nominal width of 7-inches and a minimum nominal height of 5-inches.

5. The sign(s) shall be permanently affixed and any mounting hardware and supporting devices shall be of a sturdy, weather-resistant material suitable for the installation location.

Chapter 11 – Storm Drainage

TABLE 1102.4 BUILDING STORM SEWER PIPE

The remaining portion of the table is unchanged and omitted for clarity.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; ASTM F2763; ASTM F2947/F2947M; CSA B182.8
Polypropylene (PP) pipe	ASTM F2764; ASTM F2881; CSA B182.13

TABLE 1102.5 SUBSOIL DRAIN PIPE

The remaining portion of the table is unchanged and omitted for clarity.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	~~ASTM F405;~~ ASTM F667; CSA B182.1; CSA B182.6; CSA B182.8

1102.6 Roof drains. Roof drains shall conform to ASME 112.3.1 or ASME A112.6.4. Roof drains, other than siphonic roof drains, shall be tested and rated in accordance with ASME A112.6.4 or ASPE/IAPMO Z1034.

TABLE 1102.7 PIPE FITTINGS

The remaining portion of the table is unchanged and omitted for clarity.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; ASTM F2763; ASTM F2947/F2947M; ASTM F667/F667M; ASTM F3202
Polypropylene (PP) plastic pipe	ASTM F2764; ASTM F2881/F2881M

1106.2 Size of storm drain piping. Vertical and horizontal storm drain piping shall be sized based on the flow rate through the roof drain. The flow rate, as calculated in accordance with Section 1106.2.1, shall be checked against the roof drain manufacturer's published flow rate for the specific roof drain model and size to verify that the selected roof drain will handle the anticipated flow. The flow rate in storm drain piping shall not exceed that specified in Table 1106.2.

1106.2.1 Rainfall rate conversion method. The rainfall rate falling on a roof surface shall be converted to a gallon per minute (L/m) flow rate in accordance with Equation 11-1.

GPM = R x A x 0.0104

where:

R = Rainfall intensity in inches per hour.

A = Roof area in square feet.

Chapter 12 – Special Piping and Storage Systems

[F] 1202.1 Nonflammable medical gases. Nonflammable medical gas systems, inhalation anesthetic systems and vacuum piping systems shall be ~~designed~~ installed, tested and ~~installed~~ labeled in accordance with NFPA 99.

Exceptions:

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

Chapter 13 – Nonpotable Water Systems

1301.1 ~~Scope~~. General. The provisions of Chapter 13 shall govern the materials, design, construction and installation of systems for the collection, storage, treatment and distribution of nonpotable water. For nonpotable rainwater systems, the provisions of CSA B805/ICC 805 shall be an alternative for regulating the materials, design, construction and installation of systems for rainwater collection, storage, treatment and distribution of nonpotable water. The use and application of nonpotable water shall comply with laws, rules and ordinances applicable in the jurisdiction.

1302.9 Pumping and control system. Mechanical equipment including pumps, valves and filters shall ~~be easily accessible~~ have access and be removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section 604.

Chapter 14 – Subsurface ~~Landscape Irrigation~~ Graywater Soil Absorption Systems

1401.1 Scope. The provisions of this chapter shall govern the materials, design, construction and installation of subsurface ~~landscape irrigation~~ graywater soil absorption systems connected to nonpotable water from on-site water reuse systems.

1401.2 Materials. Above-ground drain, waste and vent piping for subsurface ~~landscape irrigation~~ graywater soil absorption systems shall conform to one of the standards listed in Table 702.1. Subsurface ~~landscape irrigation~~ graywater soil absorption systems, underground building drainage and vent pipe shall conform to one of the standards listed in Table 702.2.

1401.3 Tests. Drain, waste and vent piping for subsurface ~~landscape irrigation~~ graywater soil absorption systems shall be tested in accordance with Section 312.

~~[NY]~~ 1401.4 Inspections. Subsurface ~~landscape irrigation~~ graywater soil absorption systems shall be inspected in accordance with Section ~~105.3~~ 111.

1401.5 Disinfection. Disinfection shall not be required for on-site nonpotable water reuse for subsurface ~~landscape irrigation~~ graywater soil absorption systems.

1401.6 Coloring. On-site nonpotable water reuse for subsurface ~~landscape irrigation~~ graywater soil absorption systems shall not be required to be dyed.

1402.1 Sizing. The system shall be sized in accordance with the sum of the output of all water sources connected to the ~~subsurface irrigation~~ graywater soil absorption system. Where graywater collection piping is connected to subsurface landscape irrigation systems, graywater output shall be calculated according to the gallons-per-day-per-occupant number based on the type of fixtures connected. The graywater discharge shall be calculated by the following equation:

1402.3 Subsurface ~~landscape irrigation~~ graywater soil absorption site location. The surface grade of all soil absorption systems shall be located at a point lower than the surface grade of any water well or reservoir on the same or adjoining lot. Where this is not possible, the site shall be located so surface water drainage from the site is not directed toward a well or reservoir. The soil absorption system shall be located with a minimum horizontal distance between various elements as indicated in Table 1402.3. Private sewage disposal systems in compacted areas, such as parking lots and driveways, are prohibited. Surface water shall be diverted away from any soil absorption site on the same or neighboring lots.

TABLE 1402.3 LOCATION OF SUBSURFACE ~~IRRIGATION~~ GRAYWATER SOIL ABSORPTION SYSTEM

The remaining portion of the table is unchanged and omitted for clarity.

Element	MINIMUM HORIZONTAL DISTANCE	
	Storage tank (feet)	~~Irrigation disposal~~ Absorption field (feet)

1403.1 Installation. Absorption systems shall be installed in accordance with Sections 1403.1.1 through 1403.1.5 ~~to provide landscape irrigation without surfacing of water.~~

Chapter 15 – Reference Standards

ISO New Promulgator

~~TCNA/ANSI A118.10—99 Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin Set Ceramic Tile and Dimension Stone Installation~~

ANSI

ANSI Z535.2: 2011 (R2017) American National Standard for Environmental and Facility Safety Signs,

ANSI/CAN/IAPMO/ISO 30500-2019: Non-sewered sanitation systems - Prefabricated integrated treatment units - General Safety and performance requirements for design and testing

ASME

A112.4.4—2017 Plastic Push-Fit Drain, Waste, and Vent (DWV) Fittings

A112.6.1M—1997(R2017) Floor Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use

ASSE

1014-2020: Performance Requirements for Backflow Prevention Devices for Hand-held Showers

1023-19: Performance Requirements for Electrically Heated or Cooled Water Dispensers

1032- 2004(R2021): Dual Check Valve Type Backflow Preventers for Carbonated Beverage Dispensers – Post Mix Type

1064—2006 (R2011) Performance Requirements for Backflow Prevention Assembly Field Test Kits

1081—2014 Performance Requirements for Backflow Preventers with Integral Pressure Reducing Boiler Feed Valve and Intermediate Atmospheric Vent Style for Domestic and Light Commercial Water Distribution Systems

1082—2018 Performance Requirements for Water Heaters with Integral Temperature Control Devices for Hot Water Distribution Systems.

1084—2018 Performance Requirements for Water Heaters with Temperature Limiting Capacity

1085—2018 Performance Requirements for Water Heaters for Emergency Equipment

ASTM

A269/A269M-15a Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service

A518/A518M-99(2018): Standard Specification for Corrosion-Resistant High-Silicon Iron Castings

A554-16: Standard Specification for Welded Stainless Steel Mechanical Tubing

C1822-2015: Standard Specification for Insulating Covers on Accessible Lavatory Piping

D2680 - 01(2014): Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping

D2855-20: Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

E84-2018B: Standard Test Methods for Surface Burning Characteristics of Building Materials

F1216-22: Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube

F1504—2014: Standard Specification for Folded Poly (Vinyl Chloride) (PVC) for Existing Sewer and Conduit Rehabilitation

F1743-22: Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured in-Place Thermosetting Resin Pipe (CIPP)

F1871 —2011 Standard Specification for Folded/Formed Poly (Vinyl Chloride) Pipe Type A for Existing Sewer and Conduit Rehabilitation

F2561—17 Standard Practice for Rehabilitation of a Sewer Service Lateral and its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner

F2599—16 Standard Practice for The Sectional Repair of Damaged Pipe by Means of an Inverted Cured-in-Place Liner

F2618-19: Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems

F2763-16: Standard Specification for 12 to 60 in. [300 to 1500 mm] Dual and Triple Profile-Wall Polyethylene (PP) Pipe and Fittings for Sanitary Sewer Applications

F2764/2764M-19: Standard Specification for 6 to 60 in. [150 to 1500 mm] Polypropylene (PP) Corrugated Double and Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications

F2881/F2881M-19: Standard Specification for 12 to 60 in. [300 to 1500 mm] Polypropylene (PP) Dual Wall Pipe and Fittings for Non- Pressure Storm Sewer Applications

F2947/F2947M-20: Standard Specification for 150 to 1500 mm [6 to 60 in] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

F3202-19a: Standard Specification for Solid Wall Poly (Vinyl Chloride) PVC Fittings for Joining Corrugated Wall High Density Polyethylene (PE) and Propylene (PP) Piping

F3226/F3226M—16 Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems

F3240—17 Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long Term Watertightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines

F3328-19: Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

F3348-20b: Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Crosslinked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

F3371-19: Standard Specification for Polyolefin Pipe and Fittings for Drainage, Waste, and Vent

CSA

B182.8-18: Profile Polyethylene (PE) Storm Sewer and Drainage Pipe and Fittings

ASME A112.3.4—2018/CSA B45.9—18 Macerating Toilet Systems and Waste Pumping Systems for Plumbing Fixtures

CSA B45.5—17/IAPMO Z124—2017 with errata dated August 2017 Plastic Plumbing Fixtures

CSA B805-18/ICC 805-2018 Rainwater Harvesting Systems

IAPMO

ASPE/IAPMO Z1034-2015 Test Method for Evaluating Roof Drain Performance

UL

723-2018: Test for Surface Burning Characteristics of Building Materials

Appendix C – Structural Safety

~~**[BS] C101.1 Joist notching**. Notches on the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third the depth of the joist. Notches in the top or bottom of joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span.~~

~~**[BS] C101.2 Stud cutting and notching**. In exterior walls and bearing partitions, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.~~

~~**[BS] C101.3 Bored holes**. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall be not closer than $^{5}/_{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.~~

~~**[BS] C101.5 Cutting, notching and boring holes in cold-formed steel framing**. Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the registered design professional.~~

~~[**BS] C101.6 Cutting, notching and boring holes in nonstructural cold-formed steel wall framing**. Flanges and lips of nonstructural cold- formed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed $1^{1}/_{2}$ inches (38 mm) in width or 4 inches (102 mm) in length, and the holes shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.~~

[BS] C101.1 Cutting, notching and boring holes in structural steel framing. The cutting, notching and boring of holes in structural steel framing members shall be as prescribed by the registered design professional.

Appendix F – Reserved ~~Board of Appeals~~

APPENDIX F - RESERVED ~~BOARD OF APPEALS~~

~~SECTION A101 GENERAL~~

~~**A101.1 Scope**. A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section XXX (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.~~

A101.2 Application for appeal. Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.

A101.2.1 Limitation of authority. The board shall not have authority to waive requirements of this code or interpret the administration of this code.

A101.2.2 Stays of enforcement. Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.

109.2 A101.3 Membership of board. The board of appeals shall consist of five voting members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.

109.2.1 A101.3.1 Qualifications. The board of appeals shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines:

1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.
2. Registered design professional with structural engineering or architectural experience.
3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.
4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.
5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.

109.2.2A101.3.2 Alternate members. The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairman chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years the same term or until a successor has been appointed.

A101.3.3 Vacancies. Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.

109.2.3 A101.3.4 Chairman. Chairperson. The board shall annually select one of its members to serve as chairman. chairperson.

109.2.5 A101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer. which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.

109.2.4 A101.3.6 Disqualification Conflict of member. interest. A member shall not hear an appeal in which that member has with any personal, professional or financial interest. interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.

109.2.6 A101.3.7 Compensation of members. Compensation of members shall be determined by law.

A101.3.8 Removal from the board. A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.

109.4.1 A101.4 Procedure .Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received. presented.

109.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman chairperson, within 10 days of the filing of an appeal or at stated periodic meetings. intervals.

109.4 A101.5.1 Open hearing. Hearings All hearings before the board shall be open to the public. The appellant, the appellant's representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.

A101.5.2 Quorum. Three members of the board shall constitute a quorum.

109.5 A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.

A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.

109.6 A101.7 Board decision. The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.

109.6.1A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant's representative and to the code official.

109.6.2 A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.

109.7 A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.