OFFICE OF STATE FIRE MARSHAL
NC DEPARTMENT OF INSURANCE

2024 NC Plumbing Code Updates

Module 1: 2024 NC Plumbing Code updates

Module 2: 2024 NC Building Code plumbing updates
2024 NC Residential Code plumbing updates
Common Interpretation Requests

OSFM

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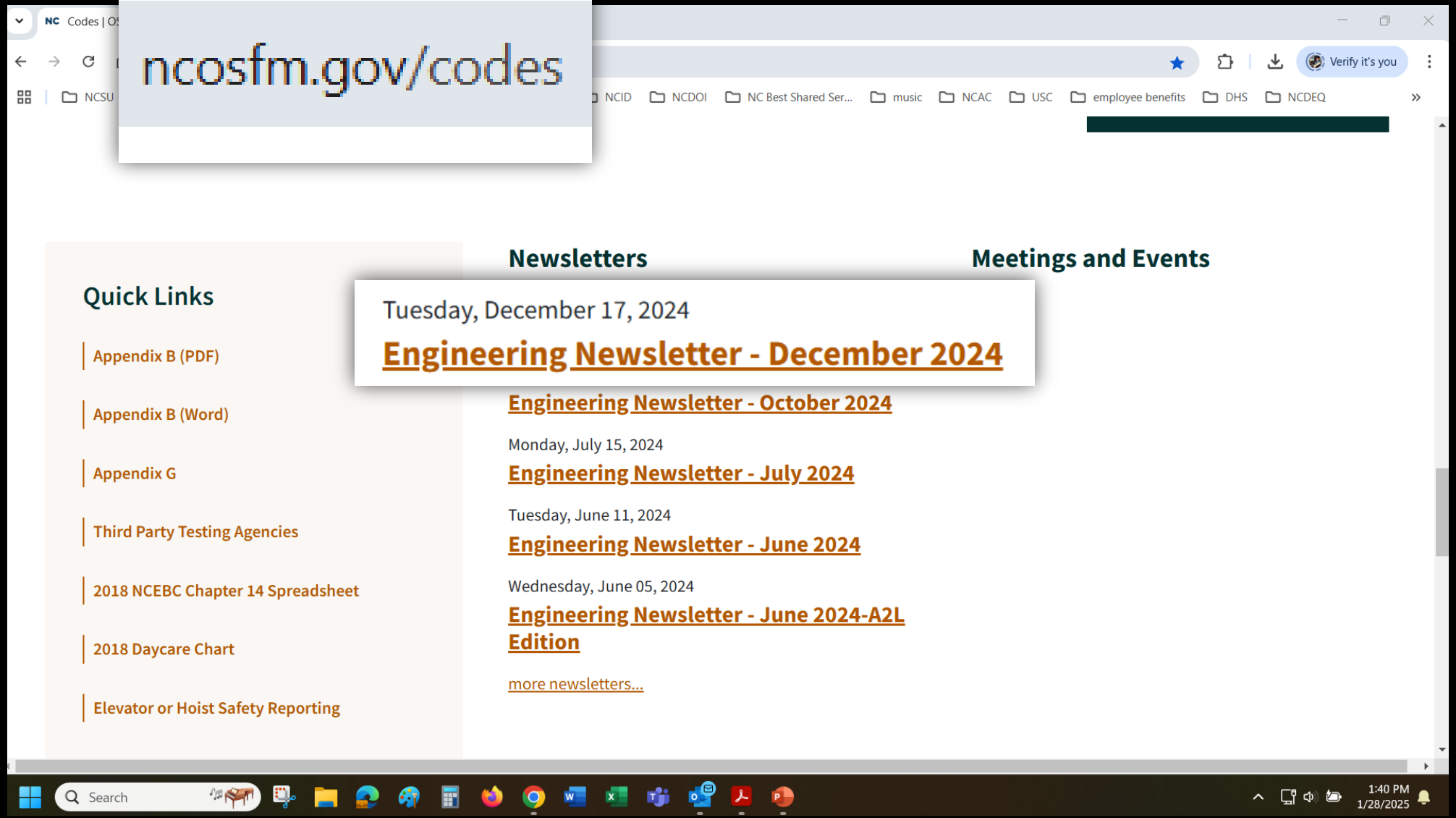

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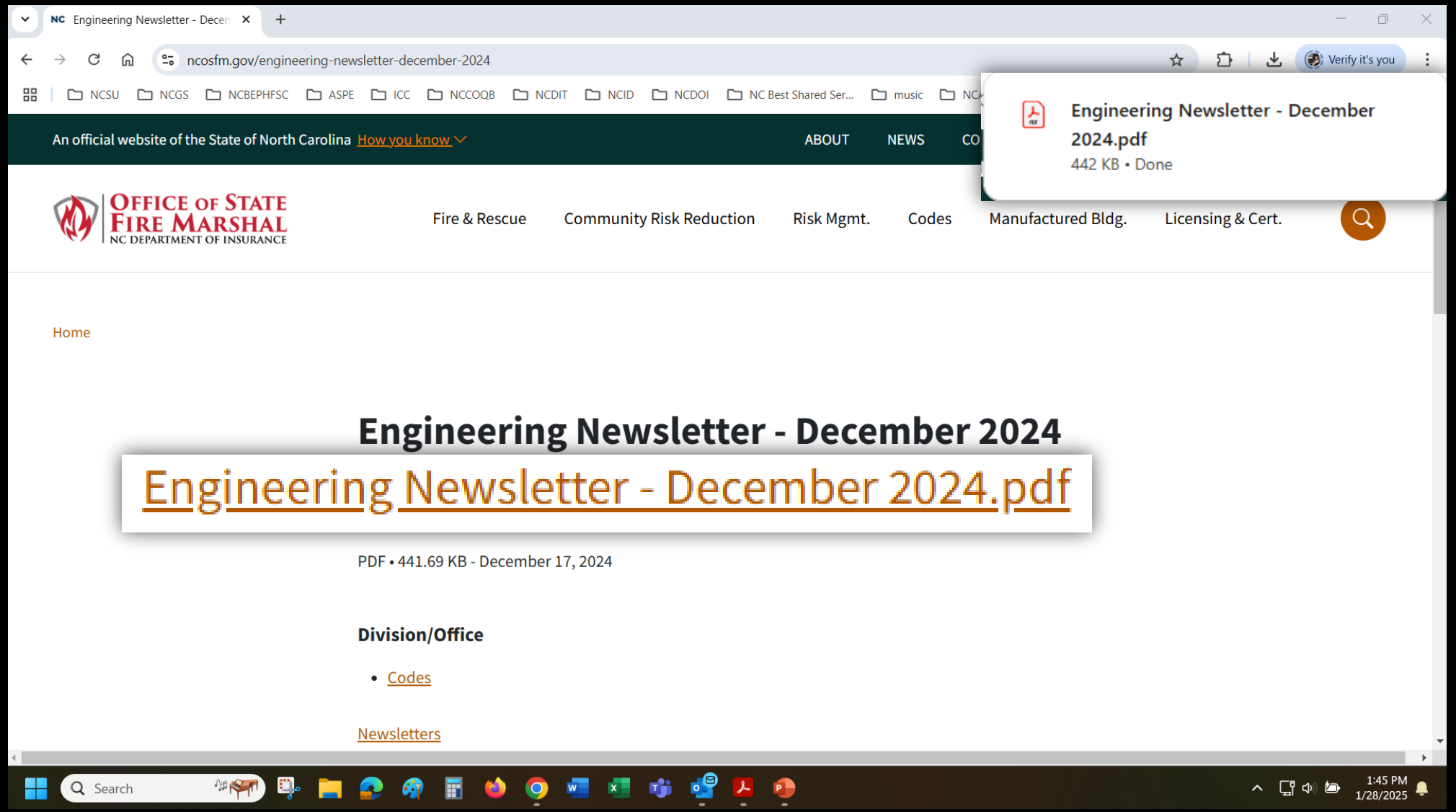
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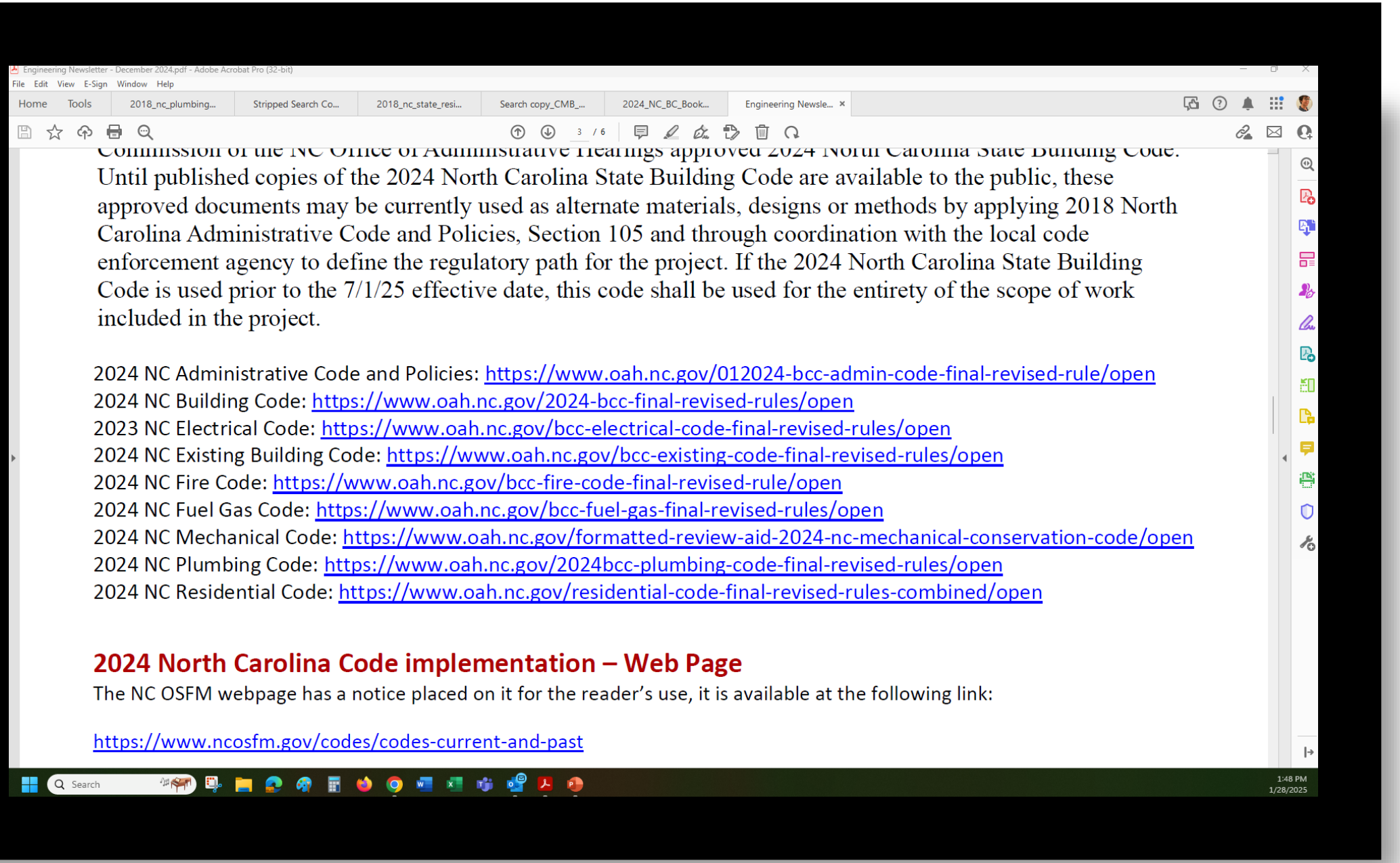
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Commission of the NC Office of Administrative Hearings approved 2024 North Carolina State Building Code. Until published copies of the 2024 North Carolina State Building Code are available to the public, these approved documents may be currently used as alternate materials, designs or methods by applying 2018 North Carolina Administrative Code and Policies, Section 105 and through coordination with the local code enforcement agency to define the regulatory path for the project. If the 2024 North Carolina State Building Code is used prior to the 7/1/25 effective date, this code shall be used for the entirety of the scope of work included in the project.
2024 NC Administrative Code and Policies: https://www.oah.nc.gov/012024-bcc-admin-code-final-revised-rule/open
2024 NC Building Code: https://www.oah.nc.gov/2024-bcc-final-revised-rules/open
2023 NC Electrical Code: https://www.oah.nc.gov/bcc-electrical-code-final-revised-rules/open
2024 NC Existing Building Code: https://www.oah.nc.gov/bcc-existing-code-final-revised-rules/open
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2024 NC Plumbing Code: https://www.oah.nc.gov/2024bcc-plumbing-code-final-revised-rules/open
2024 NC Residential Code: https://www.oah.nc.gov/residential-code-final-revised-rules-combined/open
2024 North Carolina Code implementation – Web Page
The NC OSFM webpage has a notice placed on it for the reader's use, it is available at the following link:
https://www.ncosfm.gov/codes/codes-current-and-past
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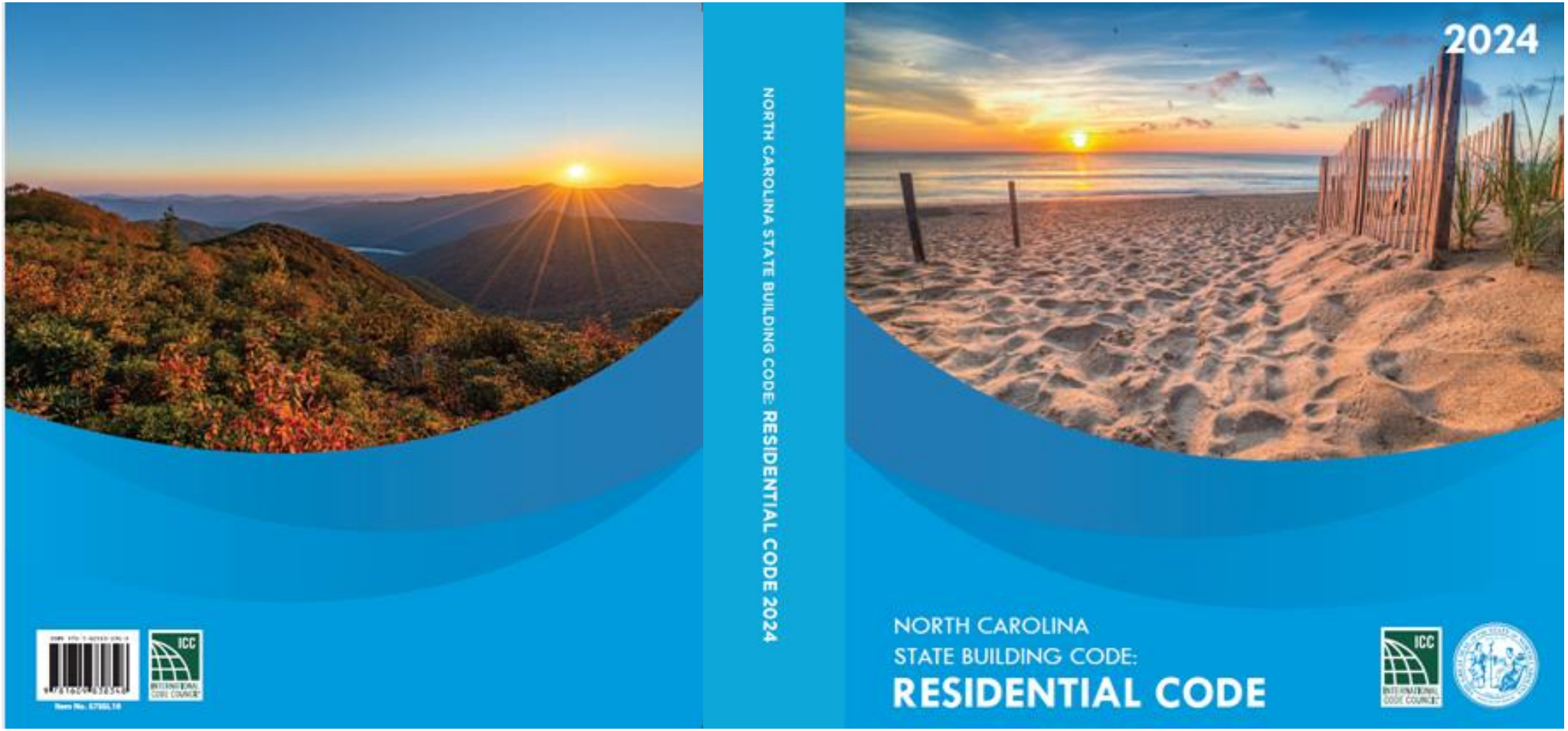

The adopted 2024 NC Building Codes become effective July 1, 2025

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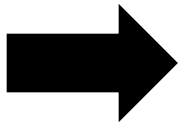
2018 Marginal Markings

2018 NCPC utilized the 2015 IPC as the base code



ICC deletion from the 2012 IPC

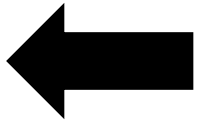
ICC Change from the 2012 IPC

*, ** Relocated Text

<u>Underlined</u> language indicated NC change

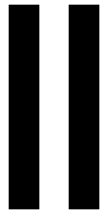
2024 Marginal Markings

2024 NCPC utilized the 2021 IPC as the base code

ICC deletion from the 2018 IPC 

ICC change from the 2018 IPC

NC deletion from the 2021 IPC <

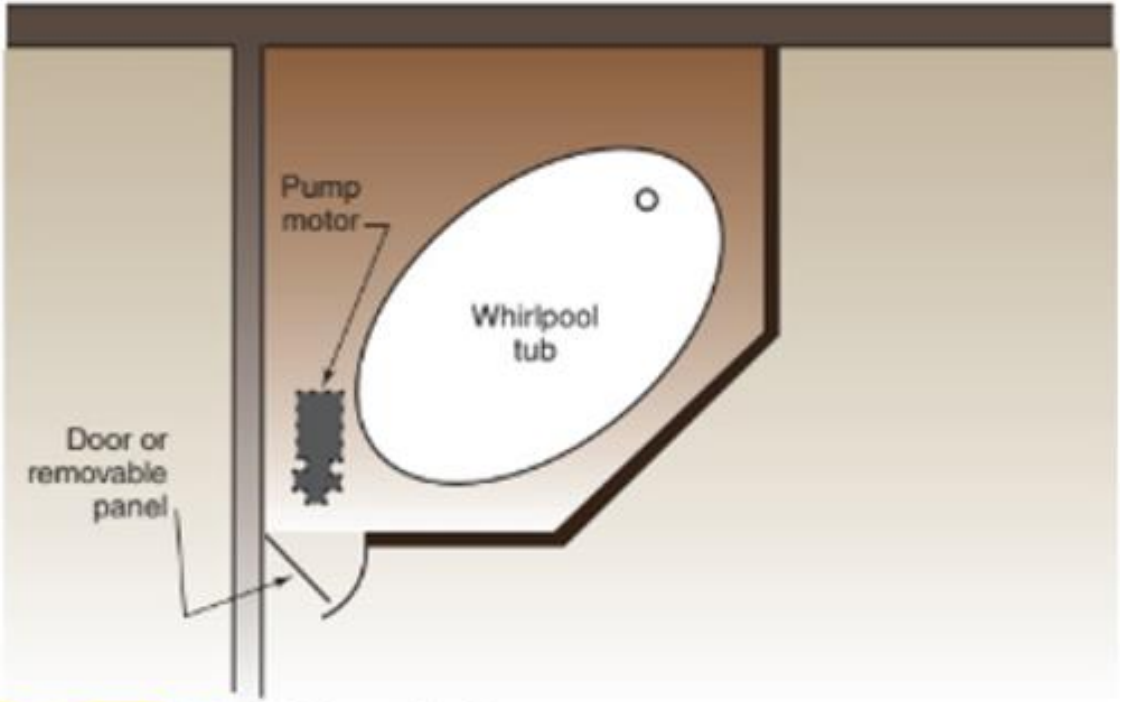


NC change from the 2021 IPC

2024 NC Plumbing Code Updates

2024 NC Plumbing Code Updates

ACCESSIBLE. A site, building, facility or portion thereof that complies with Chapter 11 of the *International Building Code*.



Access to whirlpool tub pump

Accessible drinking fountains

Photo courtesy of iStock.com

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BATHING ROOM. A room containing a bathtub, shower, spa or similar bathing fixture, including or excluding a water closet and/or lavatory.

2024 NC Plumbing Code Updates

BUILDING, EXISTING. Existing building is a building legally erected prior to the adoption of this code, or one for which a legal building *permit* has been issued.

2024 NC Plumbing Code Updates

COPPER ALLOY. A metal alloy where the principle component is copper.

Wrought Products
C100xx-C150xx Cu Commercially Pure Copper
C151xx-C199xx Age Hardenable Cu (w/ Cd, Be, Cr, Fe)
C2xxxx Cu-Zn alloys Brasses
C3xxxx Cu-Zn-Pb alloys Leaded brasses
C4xxxx Cu-Zn-Sn alloys Tin bronzes
C5xxxx Cu-Sn and Cu-Sn-Pb Phosphor bronze alloys
C6xxxx Cu-Al and Cu-Si Bronzes
C7xxxx Cu-Ni Copper Nickel and Cu-Ni-Zn Nickel Silver
Cast Products
C800xx-C811xx Commercially Pure Coppers
C813xx-C828xx 95-99% Copper
C833xx-C899xx Cu-Zn alloys containing Sn, Pb, Mn, or Si
C9xxxx Other alloys, including tin bronze, aluminum bronze, copper nickel

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2024 NC Plumbing Code Updates

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.

2024 NC Plumbing Code Updates

FULL-OPEN VALVE. A water control or shutoff component in the water supply system piping that, where adjusted for maximum flow, the flow path through the component's closure member is not a restriction in the component's through-flow area.

Image source valvesonline.co.uk

2024 NC Plumbing Code Updates

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.

2024 NC Plumbing Code Updates

LAVATORY. A hand-washing plumbing fixture located in a bathroom, or toilet room.

2024 NC Plumbing Code Updates

PRESS-CONNECT JOINT. A permanent mechanical joint incorporating an elastomeric seal or an elastomeric seal and corrosion-resistant grip ring. The joint is made with a pressing tool and jaw or ring approved by the fitting manufacturer.

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2024 NC Plumbing Code Updates

PRIMARY STRUCTURAL FRAME. The primary structural frame shall include all of the following structural members:

1. The columns.
2. Structural members having direct connections to the columns, including girders, beams, trusses and spandrels.
3. Members of the floor construction and roof construction having direct connections to the columns.
4. Members that are essential to the vertical stability of the *primary structural frame* under gravity loading.

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2024 NC Plumbing Code Updates

PUBLIC SWIMMING POOL. A pool, other than a residential pool, that is intended to be used for swimming or bathing and is operated by an owner, lessee, operator, licensee or concessionaire, regardless of whether a fee is charged for use.

2024 NC Plumbing Code Updates

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

2024 NC Plumbing Code Updates

RELIEF VALVE.

Pressure relief valve. A pressure-actuated valve held closed by a spring or other means and designed to relieve pressure automatically at the pressure at which such valve is set.

Temperature and pressure relief (T&P) valve. A combination relief valve designed to function as both a temperature relief and a pressure relief valve.

Temperature relief valve. A temperature-actuated valve designed to discharge automatically at the temperature at which such valve is set.

Vacuum relief valve. A device to prevent excessive buildup of vacuum in a pressure vessel.

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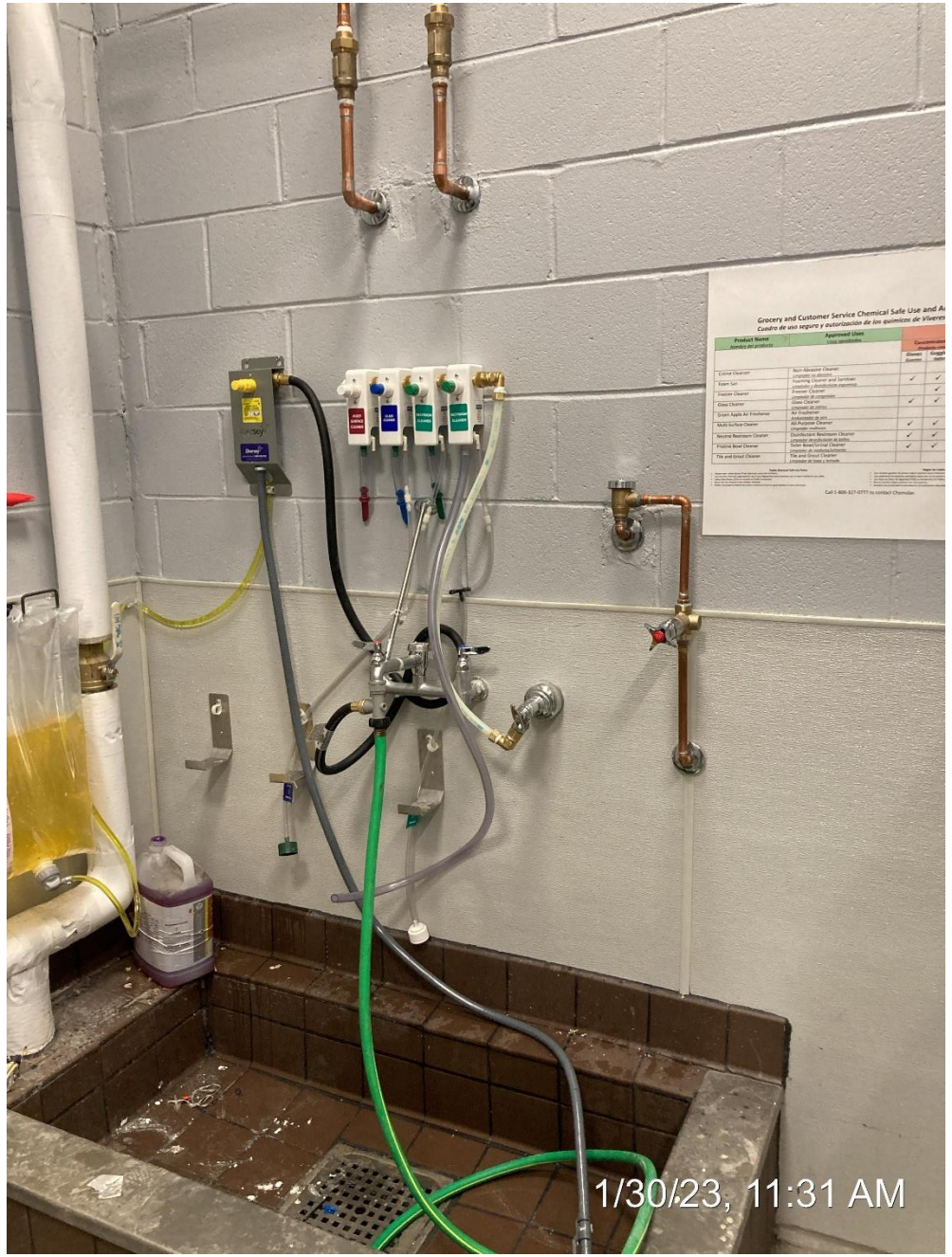
2024 NC Plumbing Code Updates

SERVICE SINK. A plumbing fixture capable of filling or emptying mop buckets which incorporates a threaded hose connection.



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SUMP PUMP, SINGLE POINT-OF-USE. An automatic water pump powered by an electric motor for the removal of drainage, except raw sewage, from a single fixture trap. The pump is selected for the specific head and volume of the load and is usually operated by level controllers.

image source grainger.com

2024 NC Plumbing Code Updates

SWIMMING POOL. A permanent or temporary structure, basin, chamber or tank containing an artificial body of water that is intended to be used for swimming, diving, recreational bathing or wading and that is designed and manufactured or built to be connected to a circulation system and having a depth of 2 feet (610 mm) or more at any point. A swimming pool can be open to the public regardless of whether a fee is charged for its use or can be accessory to a residential setting where the pool is available only to the household and guests of the household.

Residential swimming pool (In-ground)

Photo courtesy of iStock.com

Residential swimming pool (On-ground)

Public swimming pool

2024 NC Plumbing Code Updates

WASTE. The discharge from any fixture, appliance, area or appurtenance that does not contain fecal matter.

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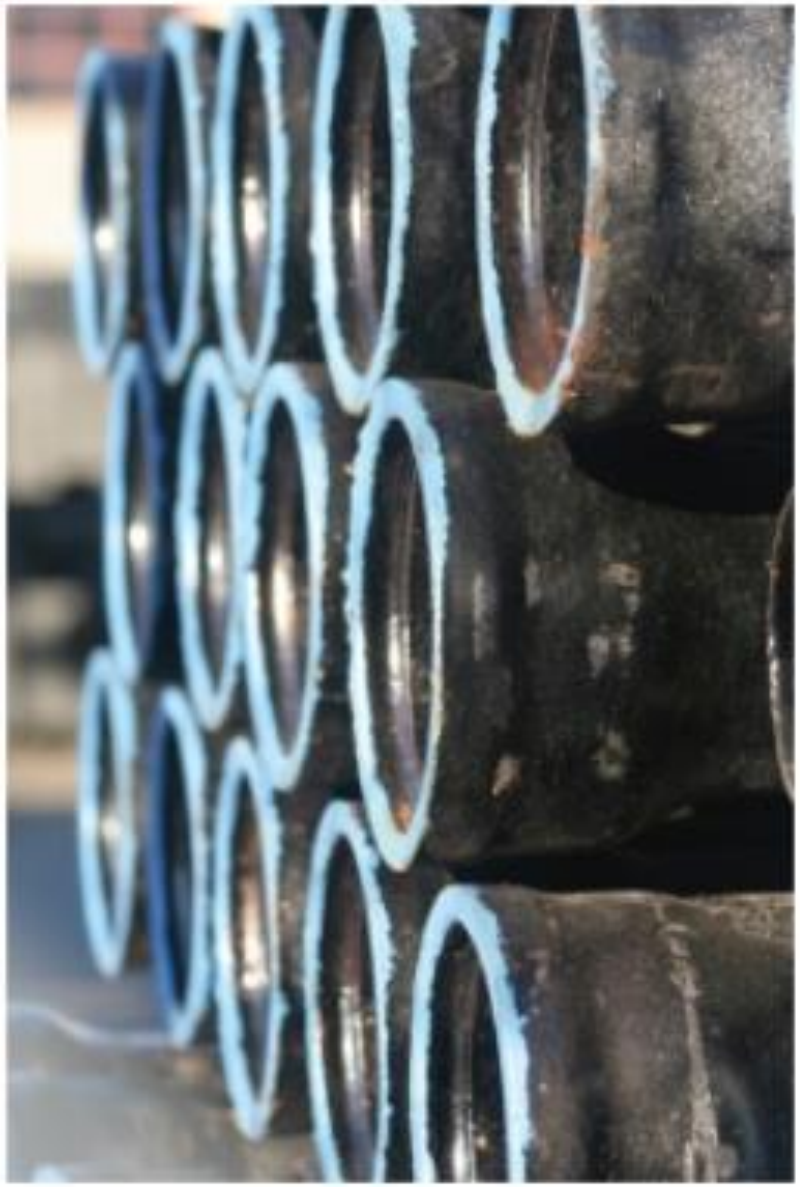
303.5 Cast-iron soil pipe, fittings and components. Cast-iron soil pipes and fittings, and the couplings used to join these products together, shall be third-party listed and labeled.



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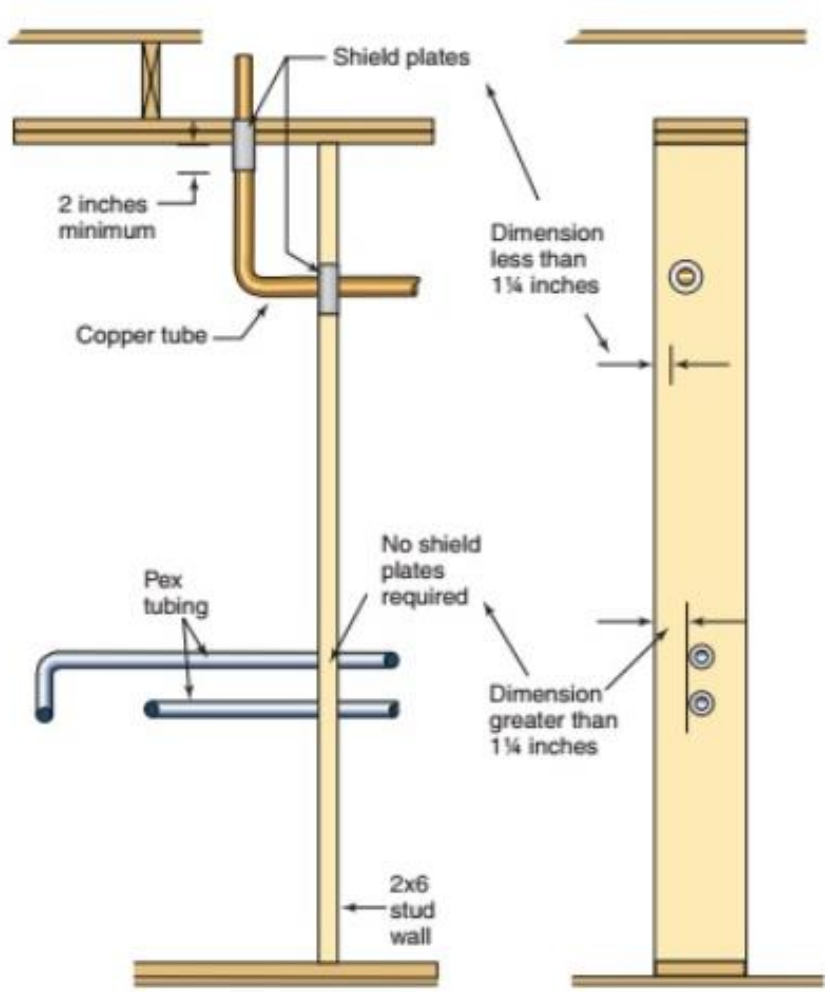

305.6 Protection against physical damage. In concealed locations where piping, other than cast iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1 ¼ inches (32 mm) from the nearest edge of the member, the pipe shall be protected by 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.

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2024 NC Plumbing Code Updates

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 the building sewer. The tracer wire shall be not less than 14 AWG and the insulation type shall be listed for direct burial.

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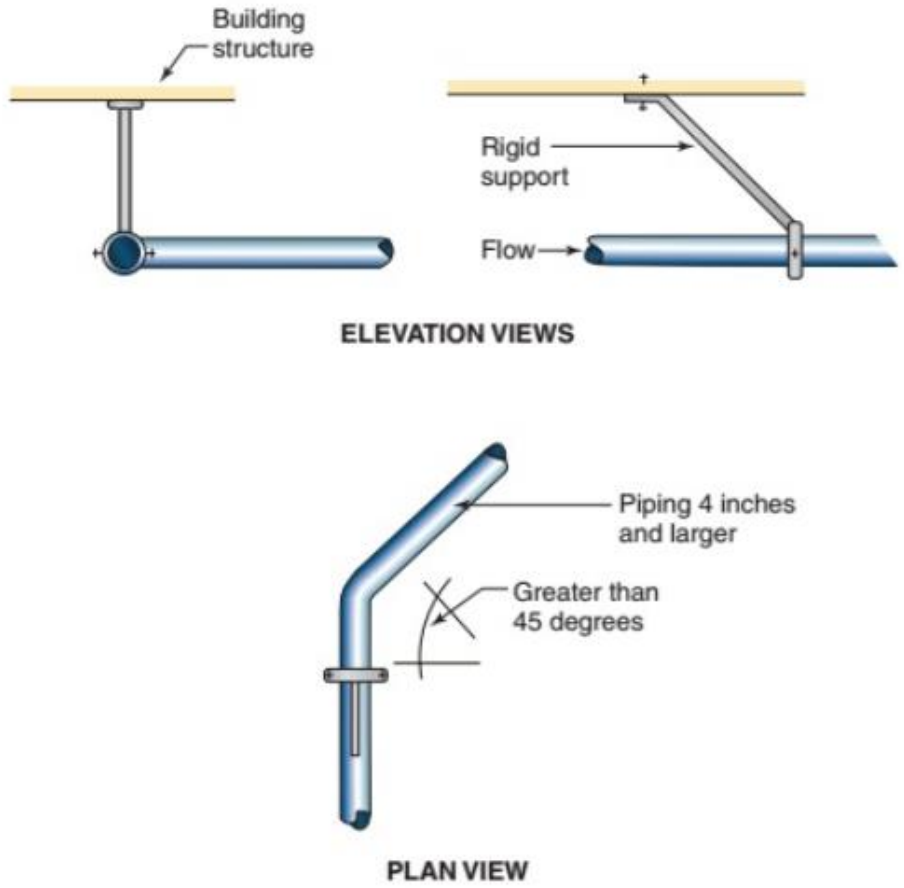
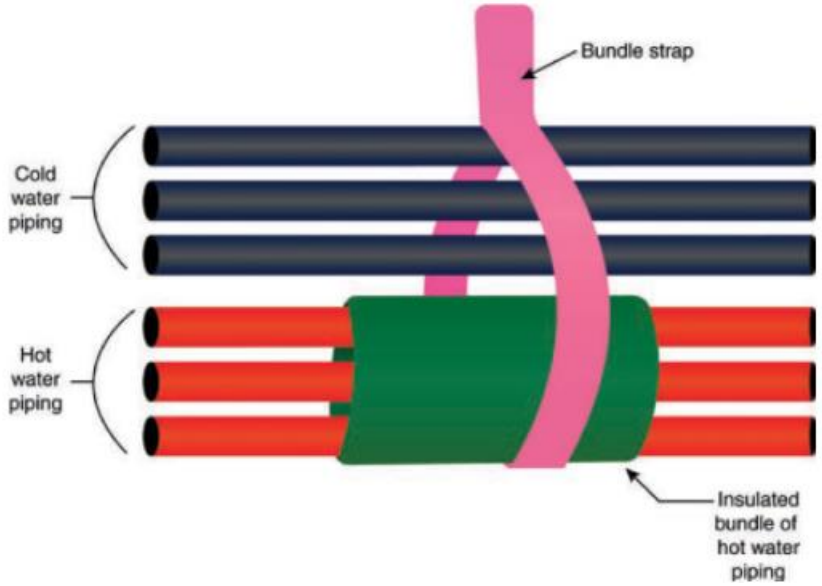


308.6 Sway bracing. Where *horizontal pipes* 4 inches (102 mm) and larger convey drainage or waste, and where a pipe fitting in that piping changes the flow direction greater than 45 degrees (0.79 rad), rigid bracing or other rigid support arrangements shall be installed to resist movement of the upstream pipe in the direction of pipe flow. A change of flow direction into a vertical pipe shall not require the upstream pipe to be braced.

2024 NC Plumbing Code Updates



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 water piping, hot water piping shall be insulated in accordance with Section 607.5.

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308.10 Thermal expansion tanks. A thermal expansion tank shall be supported in accordance with the manufacturer's instructions. Thermal expansion tanks shall not be supported by the piping that connects to such tanks.

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2024 NC Plumbing Code Updates

403.1 Minimum number of fixtures. In new construction or building additions and in changes of occupancy as defined in the *International Building Code*, plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 403.1 based on the actual use of the building or space. Uses not shown in Table 403.1 shall be considered individually by the code official. The number of occupants shall be determined by the *International Building Code*. Occupancy classification shall be determined in accordance with the *International Building Code*.

based on the actual use

NCPC 2024

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

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)[j]		LAVATORIES[j]		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)[j]	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly (see Sections 403.2, 403.3, and 403.3.3.2)	Theaters and other buildings for the performing arts and motion pictures[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Theaters in K-12 schools [d, i]	1 per 125	1 per 100	1 per 200		—	1 per 500	1 service sink
		Nightclubs, bars, taverns, dance halls and buildings for similar purposes[d]	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
		Restaurants, banquet halls and food courts[d]	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink[h]

The Occupancy (Group) column has been removed as those designations apply to defining egress, fire separation, and other building safety requirements.

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

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)[j]		LAVATORIES[j]		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)[j]	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly (see Sections 403.2, 403.3, and 403.3.3.2)	Theaters and other buildings for the performing arts and motion pictures[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Theaters in K-12 schools[d, i]	1 per 125	1 per 100	1 per 200		—	1 per 500	1 service sink
		Nightclubs, bars, taverns, dance halls and buildings for similar purposes[d]	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
		Restaurants, banquet halls and food courts[d]	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink[h]

Many footnotes have been relocated with the removal of the Occupancy column

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2024 NC Plumbing Code Updates

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 *North Carolina Building Code*.
b. Toilet facilities for employees shall be separate from facilities for inmates, students or care recipients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted provided that each patient 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. The number of fixtures provided shall be based on either the capacity of the church sanctuary or the church educational building (including fellowship halls and multiple purpose rooms), whichever is larger and within 300 foot horizontal travel distance (91.44 m).
f. For attached one- and two-family dwellings, one automatic clothes washer connection shall be required per 20 dwelling units.
g. A mop receptacle with a water supply, or a hose bibb and floor drain, may be used in lieu of a service sink.
h. A can wash may be used in lieu of a service sink.
i. See Section 403.8 for additional information on plumbing fixtures for public schools.
j. When the rearrangement of an area or space increases the occupant content, the plumbing facilities shall be increased in accordance with this code.
k. For baseball stadiums, the number of fixtures shall be reduced by 50 percent.
l. Service sink may be omitted when located within a single-family dwelling.
m. Self-service mini-storage facilities without an office area are exempt.
n. Unheated storage buildings that are used periodically are not required to have toilet rooms.
o. For business and mercantile occupancies with an occupant load of 30 or fewer, service sinks shall not be required.
p. See Section 403.6 for adjustments in occupant count.

j. When the rearrangement of an area or space increases the occupant content, the plumbing facilities shall be increased in accordance with this code.

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2024 NC Plumbing Code Updates

TABLE 403.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a, p] (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)[j]		LAVATORIES[j]		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)[j]	OTHER[g]
			MALE	FEMALE	MALE	FEMALE			
		Cafeterias in K-12 schools[d, i]	1 per 125	1 per 125	1 per 200		—	1 per 500	1 service sink
		Casino gaming areas	1 per 100 for the first 400 and 1 per 250 for the remainder exceeding 400	1 per 50 for the first 400 and 1 per 150 for the remainder exceeding 400	1 per 250 for the first 750 and 1 per 500 for the remainder exceeding 750		—	1 per 1,000	1 service sink
		[illegible]							
1	Assembly (see Sections			1 per 65	1 per 200		—	1 per 500	1 service sink
				1 per 100	1 per 200		—	1 per 500	1 service sink
				1 per 500	1 per 750		—	1 per 1,000	1 service

Photo courtesy of iStock.com

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403.1.2 Single-user toilet and bathing room fixtures. The plumbing fixtures located in single-user toilet and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1110.2.1 of the *International Building Code*, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of their sex.

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

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403.1.2 Single-user toilet and bathing room fixtures.

A combination of Single-User toilet facilities and Multiple-User toilet facilities

Given: Business Use having an Occupant Load of 360.

Per Table 403.1:

Water Closet Ratio: 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50

Lavatory Ratio: 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80

Calculations per 403.1.1:

Occupant load for males = 360/2 = 180

Occupant load for females = 360/2 = 180

Males:

WCs: 50/25 + (180 - 50)/50 = 4.6 Round up to 5.

LAVs: 80/40 + (180 - 80)/80 = 3.25 Round up to 4.

Females:

WCs: 50/25 + (180 - 50)/50 = 4.6 Round up to 5.

LAVs: 80/40 + (180 - 80)/80 = 3.25 Round up to 4.

Per 403.1.2: Total required WCs = 10

Total required LAVs = 8

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403.1.2 Single-user toilet and bathing room fixtures.

Design chosen is to have 5 single-user toilet facilities and two multiple-user toilet facilities separated by sex.

Total required WCs = 10

Total required Lavatories = 8

Five single-user toilet facilities provide 5 required WCs and 5 required Lavatories.

Five WCs and three Lavatories remain required for the multiple-user toilet facilities separated by sex.

To provide the total required fixtures with the five single-user facilities add either:

- 2 WCs and 1 Lavatory in a male toilet facility and, 3 WCs and 2 Lavatories in a female toilet facility.

OR

- 2 WCs and 1 Lavatory in a female toilet facility and, 3 WCs and 2 Lavatories in a male toilet facility.

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

2024 NC Plumbing Code Updates

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

Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in all other structures or tenant spaces with a total occupant load, including employees and customers, of 25 or fewer.
3. Separate facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.
4. Separate facilities shall not be required in business *occupancies* with a total occupant load, including both employees and customers, of 30 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.
6. Toilet facilities within classrooms located in licensed child daycare facilities with ages 4 years and under may be designed to serve each sex, the minimum fixture count shall be calculated 100 percent within each classroom served, based on total occupant load. In such facilities, each fixture type shall be in accordance with ICC A117.1.

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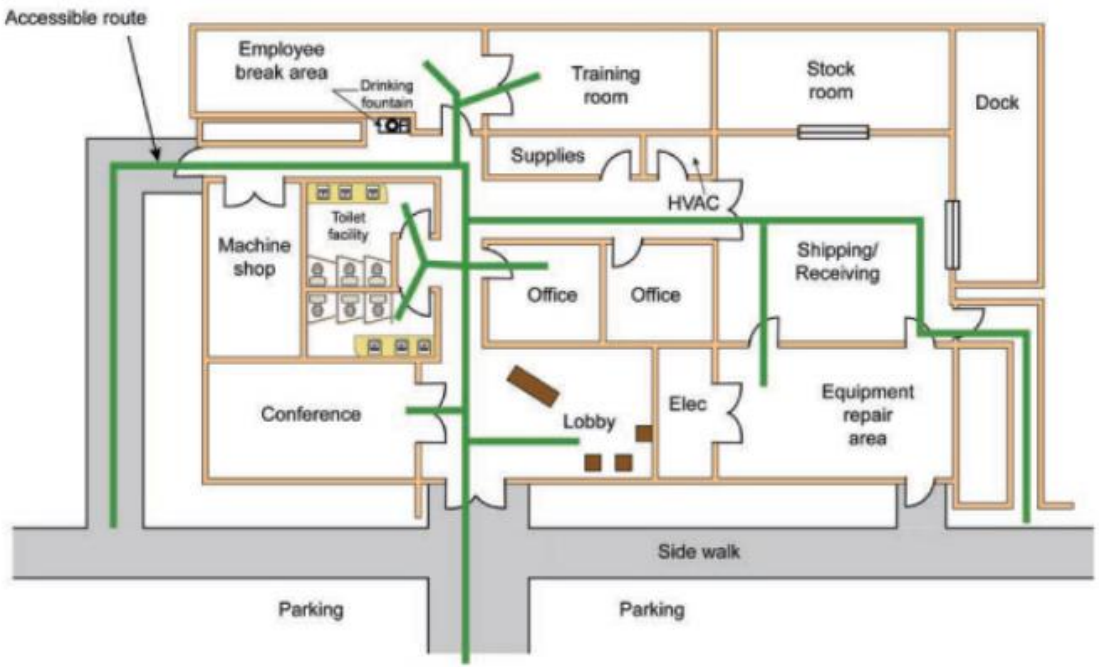
2024 NC Plumbing Code Updates

403.3.1 Access. The route to the *public* toilet facilities required by Section 403.3 shall not pass through kitchens storage rooms or closets. Access to the required facilities shall be from within the building or from the exterior of the building. 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.



403.5 Drinking fountain location. Drinking fountains shall not be required to be located in individual tenant spaces provided that *public* drinking fountains are located within an accessible 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).

2024 NC Plumbing Code Updates

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 accessible path of travel to such facilities shall not exceed a distance of 500 feet (152 m). Employee facilities shall be either separate facilities or combined employee and public facilities. Access to toilet facilities in occupancies other than mercantile and assembly occupancies shall be from within the employees' working area.

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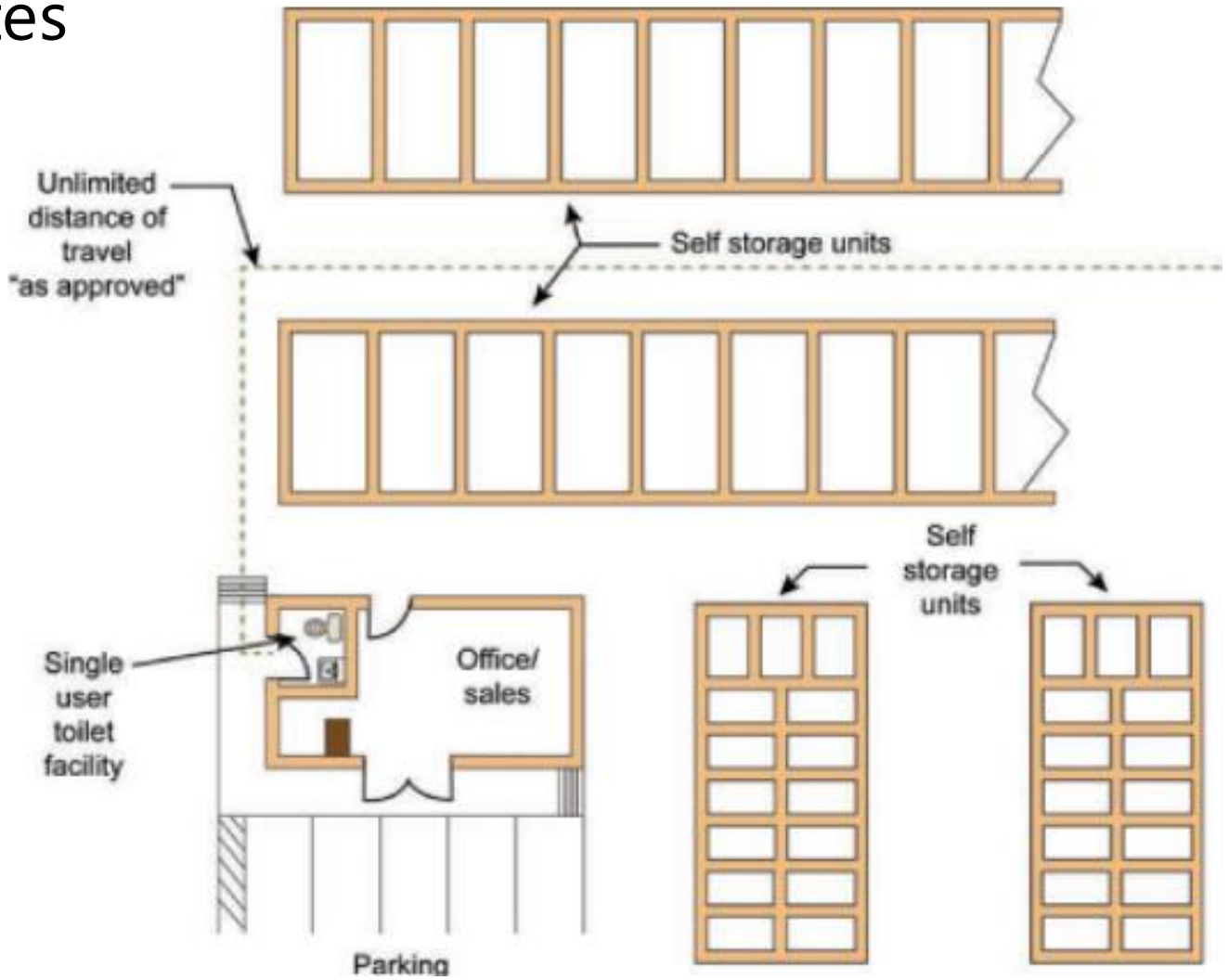
403.3.3 Location of toilet facilities in occupancies other than malls.

Exceptions:

2. The location and maximum accessible distances of travel to required public and employee facilities in Group S *occupancies* shall be permitted to exceed that required by this section, provided that the location and maximum distances of travel are *approved*.



2024 NC Plumbing Code Updates

403.3.3 Location of toilet facilities in occupancies other than malls.

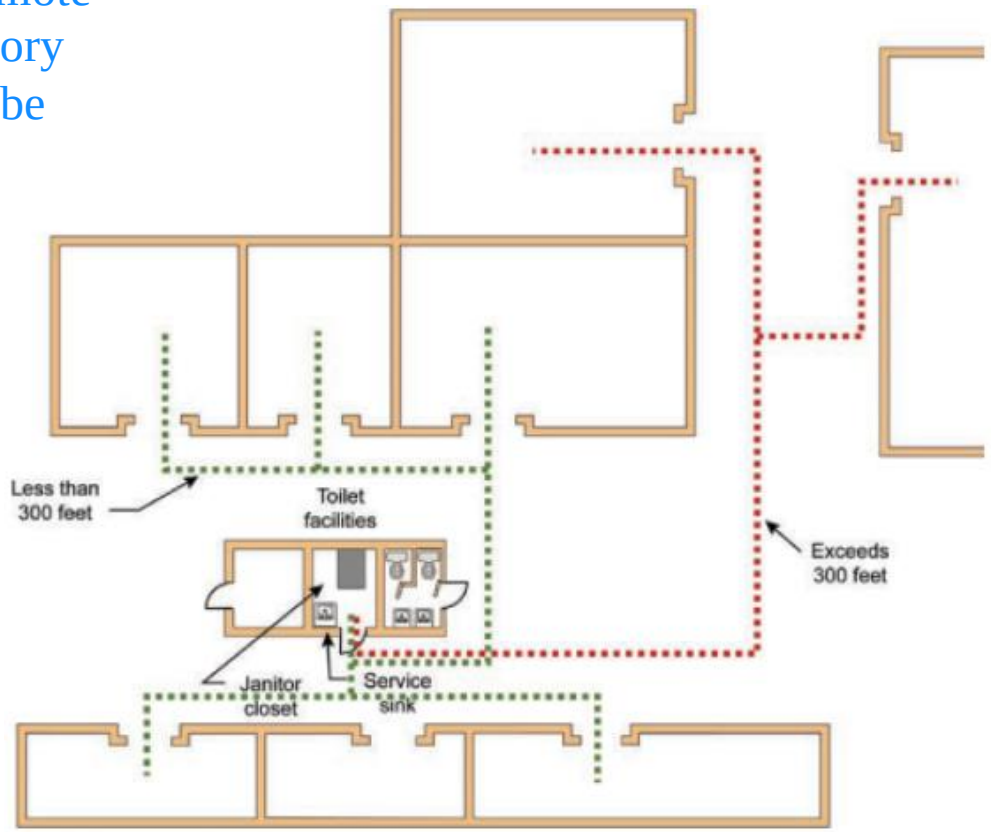
Exceptions:

3. Facilities that are required for employees in storage structures or kiosks, and are located in adjacent structures under the same ownership, lease or control, shall be a maximum accessible travel distance of 500 feet (152 m) from the employees' working area.

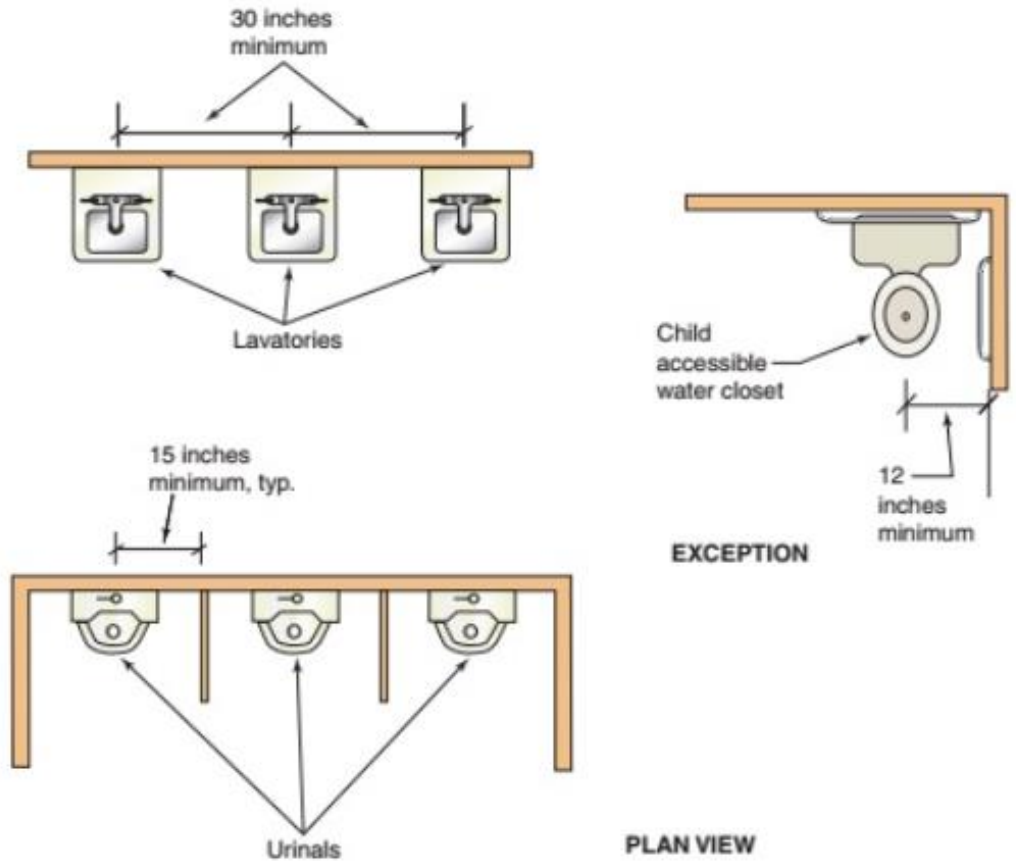
OSFM

2024 NC Plumbing Code Updates

403.9 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.



2024 NC Plumbing Code Updates

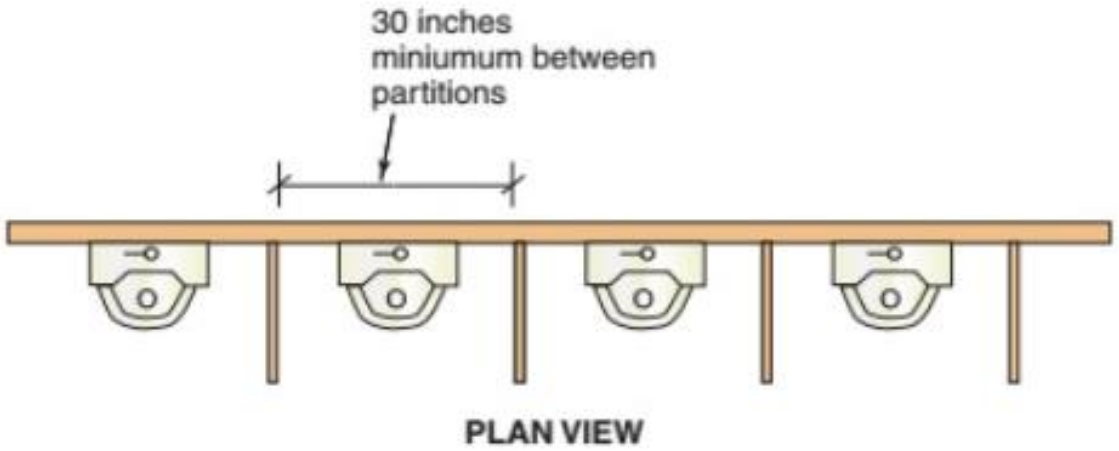


405.3.1 Water closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction. Where partitions or other obstructions do not separate adjacent water closets, urinals, 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.

Exceptions:

1. 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.
2. Private side by side lavatories may be less than 30 inches (762 mm) center to center.

2024 NC Plumbing Code Updates



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 room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions

OSFM

2024 NC Plumbing Code Updates

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 fixture connector or any other part of the plumbing system. The carrier shall conform to ASME A112.6.1M or ASME A112.6.2.

OSFM

2024 NC Plumbing Code Updates

405.5 Plumbing fixtures with a pumped waste. Plumbing fixtures with a pumped waste shall comply with ASME A112.3.4/CSA B45.9. The plumbing fixture with a pumped waste shall be installed in accordance with the manufacturer's instructions.

2024 NC Plumbing Code Updates

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 not less than 1 ½ inches (38 mm) in diameter. The waste outlet shall be equipped with a watertight stopper.

2024 NC Plumbing Code Updates

409.1 Approval. Commercial dishwashing machines shall conform to ASSE 1004 and NSF 3. Residential dishwashers shall conform to NSF 184.

Comparison of NSF/ANSI 184 to NSF/ANSI 3

NSF/ANSI 3 establishes design, construction, material and performance requirements for commercial dishwashers used in restaurants and other facilities subject to public health inspections, while NSF/ANSI 184 sets requirements for residential dishwashers:

Residential Dishwashers (NSF/ANSI 184)

- Must achieve a minimum 99.999 percent or 5-log reduction of bacteria
- Must reach a final rinse temperature of 150° F
- Sanitization performance is verified only when the unit is operated on the sanitizing cycle

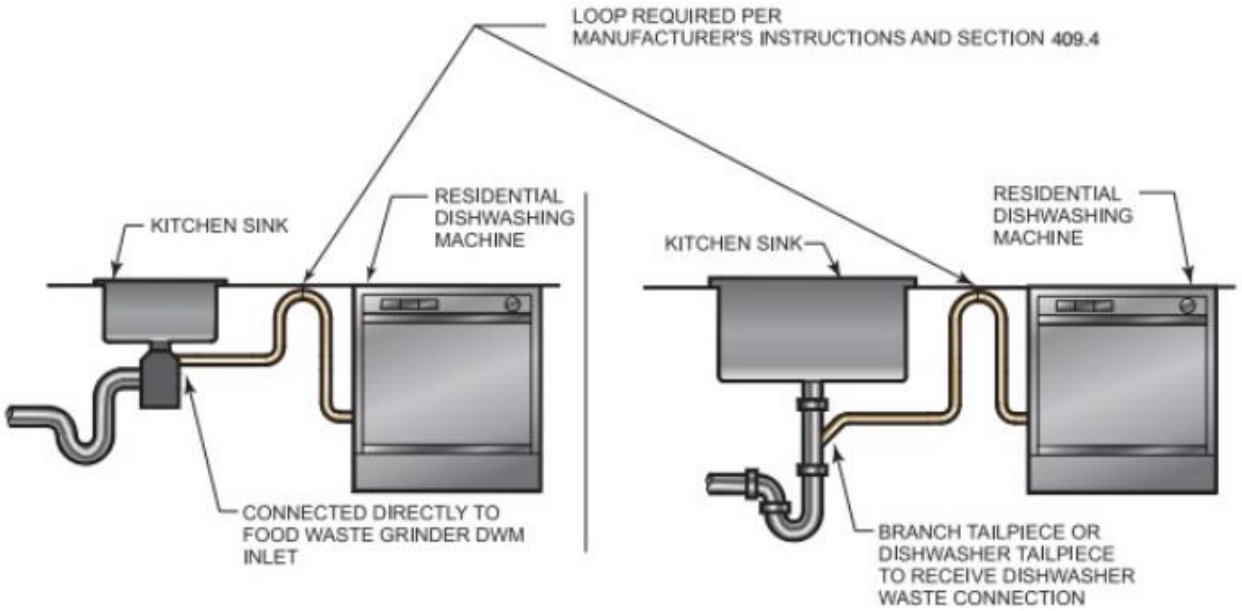
Commercial Dishwashers (NSF/ANSI 3)

- Must achieve a minimum 99.999 percent or 5-log reduction of bacteria
- Must reach a final rinse temperature of 165°F for stationary rack, single-temp dishwashers, and 180°F for all other commercial style dishwashers

OSFM

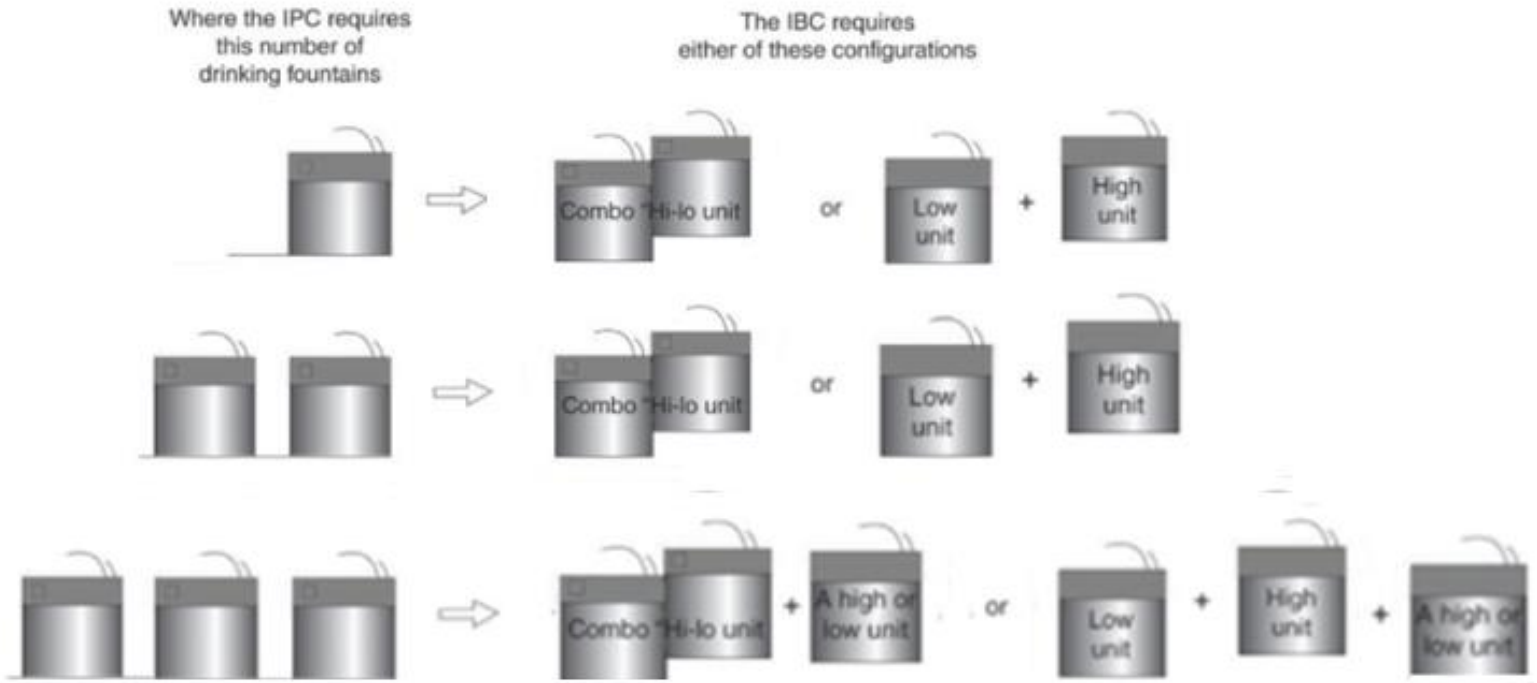
2024 NC Plumbing Code Updates

409.4 Residential dishwasher waste connection. The waste connection of a residential dishwasher shall connect directly to a wye branch fitting on the tailpiece of the kitchen sink, directly to the dishwasher connection of a food waste disposer, or through an *air break* to a standpipe. The waste line of a residential dishwasher shall rise and be securely fastened to the underside of the sink rim or countertop.



2024 NC Plumbing Code Updates

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.



2024 NC Plumbing Code Updates

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.

NCPC 2018	NCPC 2024
SECTION 406 AUTOMATIC CLOTHES WASHERS	SECTION 406 AUTOMATIC CLOTHES WASHERS
SECTION 407 BATHTUBS	SECTION 407 BATHTUBS
SECTION 408 BIDETS	SECTION 408 BIDETS
SECTION 409 DISHWASHING MACHINES	SECTION 409 DISHWASHING MACHINES
SECTION 410 DRINKING FOUNTAINS	SECTION 410 DRINKING FOUNTAINS
SECTION 411 EMERGENCY SHOWERS AND EYEWASH STATIONS	SECTION 411 EMERGENCY SHOWERS AND EYEWASH STATIONS

OSFM

NCPC 2018	NCPC 2024
SECTION 424 FAUCETS AND OTHER FIXTURE FITTINGS	SECTION 412 FAUCETS AND FIXTURE FITTINGS
SECTION 412 FLOOR AND TRENCH DRAINS	SECTION 413 FLOOR AND TRENCH DRAINS
SECTION 427 FLOOR SINKS	SECTION 414 FLOOR SINKS
SECTION 425 FLUSHING DEVICES FOR WATER CLOSETS AND URINALS	SECTION 415 FLUSHING DEVICES FOR WATER CLOSETS AND URINALS
SECTION 413 FOOD WASTE DISPOSER UNITS	SECTION 416 FOOD WASTE DISPOSER UNITS

OSFM

NCPC 2018	NCPC 2024
SECTION 414 GARBAGE CAN WASHERS	SECTION 417 GARBAGE CAN WASHERS
SECTION 415 LAUNDRY TRAYS	SECTION 418 LAUNDRY TRAYS
SECTION 416 LAVATORIES	SECTION 419 LAVATORIES
SECTION 426 MANUAL FOOD AND BEVERAGE DISPENSING EQUIPMENT	SECTION 420 MANUAL FOOD AND BEVERAGE DISPENSING EQUIPMENT
SECTION 417 SHOWERS	SECTION 421 SHOWERS

OSFM

NCPC 2018	NCPC 2024
SECTION 422 HEALTH CARE FIXTURES AND EQUIPMENT	~~SECTION 422~~ ~~HEALTH CARE FIXTURES AND EQUIPMENT~~
SECTION 418 SINKS	SECTION 422 SINKS
SECTION 423 SPECIALTY PLUMBING FIXTURES	SECTION 423 SPECIALTY PLUMBING FIXTURES
SECTION 419 URINALS	SECTION 424 URINALS
SECTION 420 WATER CLOSETS	SECTION 425 WATER CLOSETS
SECTION 421 WHIRLPOOL BATHTUBS	SECTION 426 WHIRLPOOL BATHTUBS

OSFM

2024 NC Plumbing Code Updates

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. 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. Scald preventative valves are not required in dwelling units with individual water heaters set at 120°F (49°C).

2024 NC Plumbing Code Updates

412.5 Bathtub and whirlpool bathtub valves. Bathtubs and whirlpool bathtub valves shall 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 valves are combination tub/shower 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. Scald preventative valves are not required in dwelling units with individual water heaters set at 120°F (49°C).

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.

OSFM

2024 NC Plumbing Code Updates

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). 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.
3. A temperature-actuated, flow-reduction device conforming to ASSE 1062.

OSFM

2024 NC Plumbing Code Updates

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

2024 NC Plumbing Code Updates

419.5 Tempered water for public hand-washing facilities.
When hot water is provided to a public hand-washing facility, such water shall be tempered water delivered through an *approved* water-temperature limiting device that conforms to ASSE 1070 or CSA B125.3.

2024 NC Plumbing Code Updates

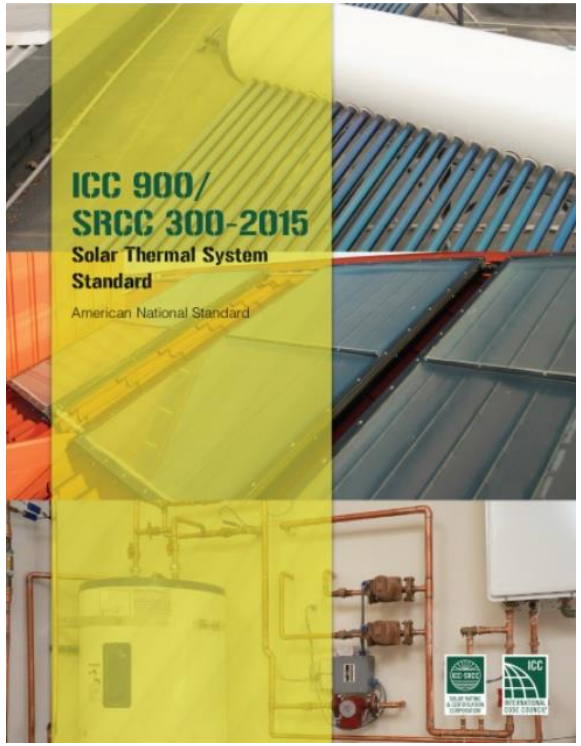
421.3 Shower waste outlet.

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

OSFM

2024 NC Plumbing Code Updates

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 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 *International Mechanical Code*.



2024 NC Plumbing Code Updates

502.1 General. Water heaters shall be installed in accordance with the manufacturer's instructions. Oil-fired water heaters shall conform to the requirements of this code and the *International Mechanical Code*. Electric water heaters shall conform to the requirements of this code and provisions of NFPA 70. Gas-fired water heaters shall conform to the requirements of the *International Fuel Gas Code*. Solar thermal water heating systems shall conform to the requirements of the *International Mechanical Code* and ICC 900/SRCC 300.

2024 NC Plumbing Code Updates

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, such as in: (a) remote locations such as a suspended ceiling, (b) attics, (c) above occupied spaces, (d) above crawl spaces or (e) in unventilated crawl spaces, a location where water leakage from the tank will cause damage to primary structural framing, the tank or water heater 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. A plastic pan shall not be installed beneath a gas-fired water heater.
3. Other materials *approved by the plumbing official.*

Exception: A pan shall not be required for water heater(s) installed on concrete slab construction and located on the lowest floor or in a private garage.

2024 NC Plumbing Code Updates

NCPC 2018

504.7.1 Pan size and drain. The pan shall be not less than 1 ½ inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. ~~The pan drain shall not be obstructed by the appliance.~~ The pan shall be drained by an indirect waste pipe having a diameter of not less than 1 inch (25.4 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4. ~~Where a pan drain was not previously installed, a pan drain shall not be required for a replacement water heater installation.~~

NCPC 2024

504.7.1 Pan size and drain. The pan shall be not less than 1 ½ inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a diameter of not less than 1-inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4.

504.7.1.1 Water heater located in a pan. Water heater(s) are subject to water damage when drain pans fill. That portion of the water heater shall be installed above the rim of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and approved by the plumbing official.

OSFM

2024 NC Plumbing Code Updates

605.14 Copper tubing.

605.14.7 Push-fit joints. Push-fit fittings shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.

605.15 CPVC plastic.

605.15.4 Push-fit joints. Push-fit joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.

605.17 PEX plastic.

605.17.3 Push-fit joints. Push-fit joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.

OSFM

NCPC 2018

607.1.1 Temperature limiting means. A thermostat control for a water heater shall not 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.

607.1.2 Tempered water temperature control. *Tempered water* shall be supplied through a water temperature limiting device that conforms to ASSE 1070 and shall limit the *tempered water* to a maximum of 110ºF (43ºC). This provision shall not supersede the requirement for protective shower valves in accordance with Section 424.3.

NCPC 2024

607.1.1 Temperature limiting means. A thermostat control for a water heater shall 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 controlled by one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 and set to not greater than 110ºF (43ºC).
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.

OSFM

2024 NC Plumbing Code Updates

607.3 Thermal expansion control. Where a storage water heater is supplied with cold water that passes through a check valve, pressure reducing valve or backflow preventer, a thermal expansion control device shall be connected to the water heater cold water supply pipe at a point that is downstream of all check valves, pressure reducing valves and backflow preventers. Thermal expansion tanks shall be sized in accordance with the tank manufacturer's instructions and shall be sized such that the pressure in the water distribution system shall not exceed that required by Section 604.8.

2024 NC Plumbing Code Updates

608.3 Devices, appurtenances, appliances and apparatus. Devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, distillation, processing, cooling, or storage of ice or foods, and that connect to the water supply system, shall be provided with protection against backflow and contamination of the water supply system.

608.4 Potable water handling and treatment equipment. Water pumps, filters, softeners, tanks and other appliances and devices that handle or treat potable water to be supplied to the potable water distribution system shall be located to prevent contamination from entering the appliances and devices. Overflow, relief valve and waste discharge pipes from such appliances and devices shall terminate through an *air gap*.

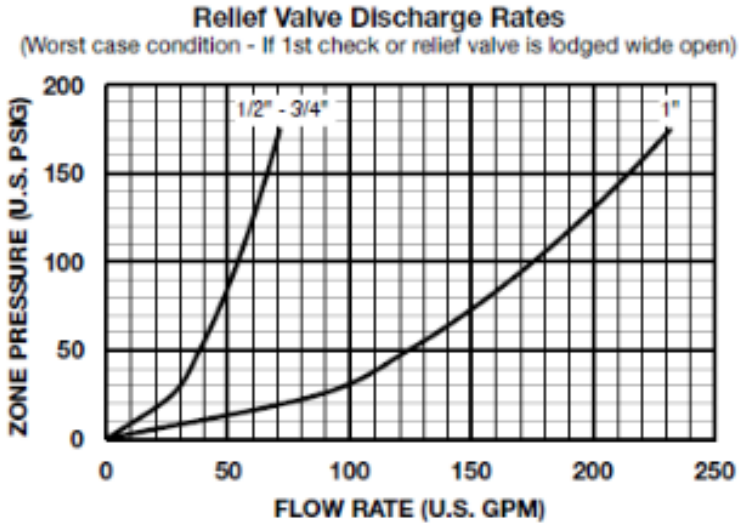
OSFM

2024 NC Plumbing Code Updates

608.12 Potable water tanks. Where in contact with potable water intended for drinking water, water tanks, coatings for the inside of tanks and liners for water tanks shall conform to NSF 61. The interior surface of a potable water tank shall not be lined, painted or repaired with any material that changes the taste, odor, color or potability of the water supply when the tank is placed in, or returned to, service.

2024 NC Plumbing Code Updates

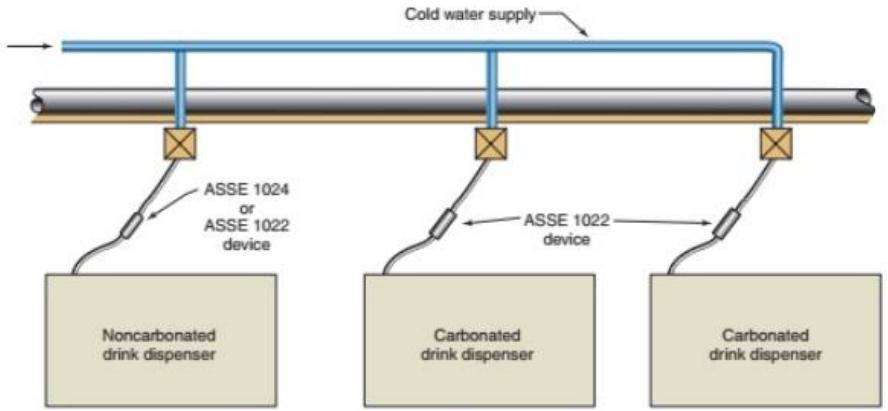
608.15.2.1 Relief port piping. The termination of the piping from the relief port or *air gap* fitting of a backflow preventer shall discharge to an *approved* indirect waste receptor or to the outdoors where it will not cause damage or create a nuisance. The indirect waste receptor and drainage piping shall be sized to drain the maximum discharge flow rate from the relief port as published by the backflow preventer manufacturer.



709.4.1 Clear-water waste receptors. Where waste receptors such as floor drains, floor sinks and hub drains receive only clear-water waste from display cases, refrigerated display cases, ice bins, coolers and freezers, such receptors shall have a *drainage fixture unit* value of one half.

OSFM

2024 NC Plumbing Code Updates



NCPC 2024

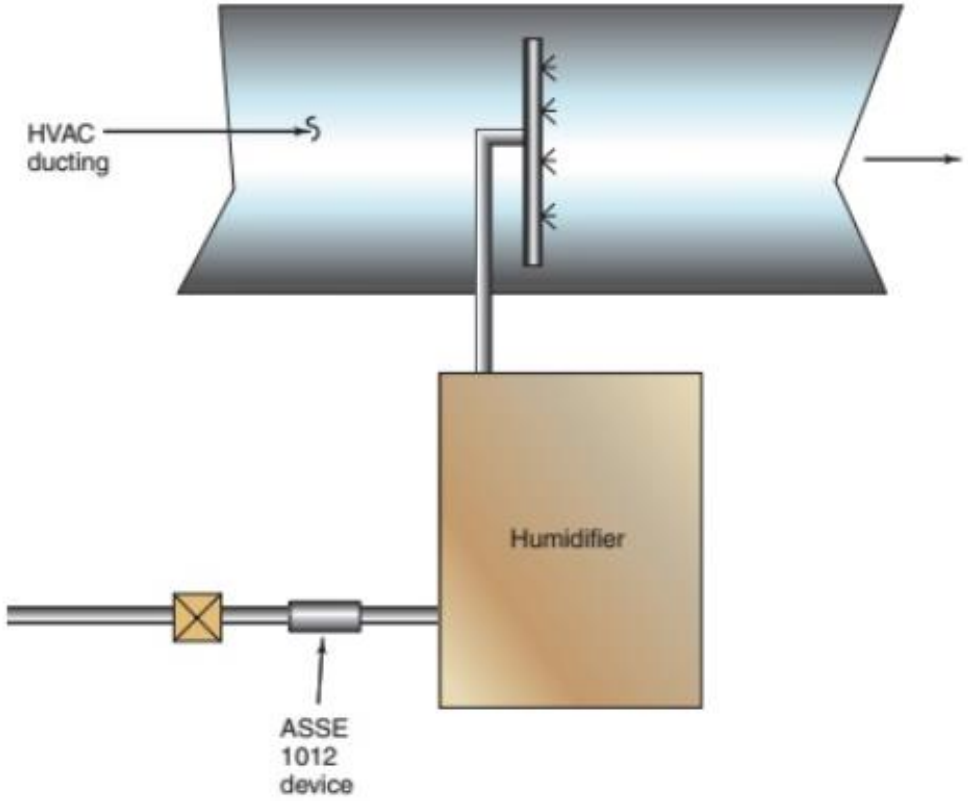
608.17.1 Beverage dispensers. The water supply connection to beverage dispensers shall be protected against backflow in accordance with Sections 608.17.1.1 and 608.17.1.2.

608.17.1.1 Carbonated beverage dispensers. The water supply connection to each carbonated beverage dispenser shall be protected against backflow by a backflow preventer conforming to ASSE 1022 or by an *air gap*. The portion of the backflow preventer device downstream from the second check valve of the device and the piping downstream therefrom shall not be affected by carbon dioxide gas.

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, or protected by an *air gap*.

2024 NC Plumbing Code Updates

608.17.10 Humidifiers. The water supply connection to humidifiers that do not have internal backflow protection shall be protected against backflow by a backflow preventer conforming to ASSE 1012 or by an *air gap*.



2024 NC Plumbing Code Updates

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, AWWA C511 or CSA B64.4.

OSFM

2024 NC Plumbing Code Updates

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.

2024 NC Plumbing Code Updates

NCPC 2018

609.2 Water service. Hospitals shall have two water service pipes installed in such a manner so as to minimize the potential for an interruption of the supply of water in the event of a water main or water service pipe failure.

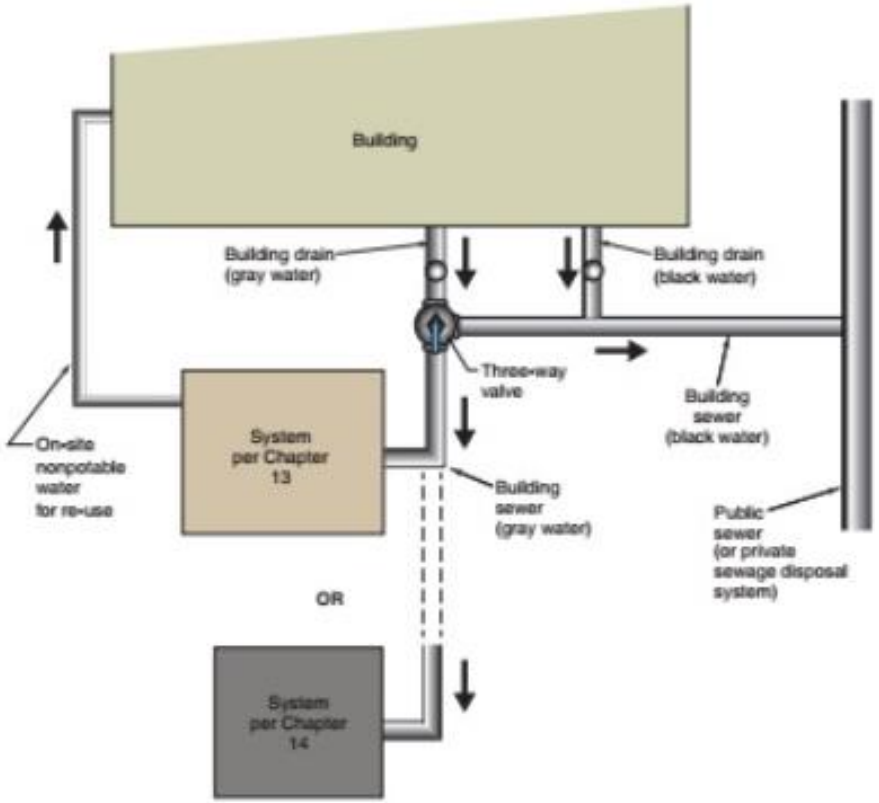
NCPC 2024

609.2 Water service for Group I-2, Condition 2 facilities. Group I-2, Condition 2 facilities shall have not fewer than two water service pipes 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.

2024 NC Plumbing Code Updates

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 nonmetalic piping. The tracer wire size shall be not less than 14 AWG and the wire insulation type shall be suitable for direct burial.

2024 NC Plumbing Code Updates



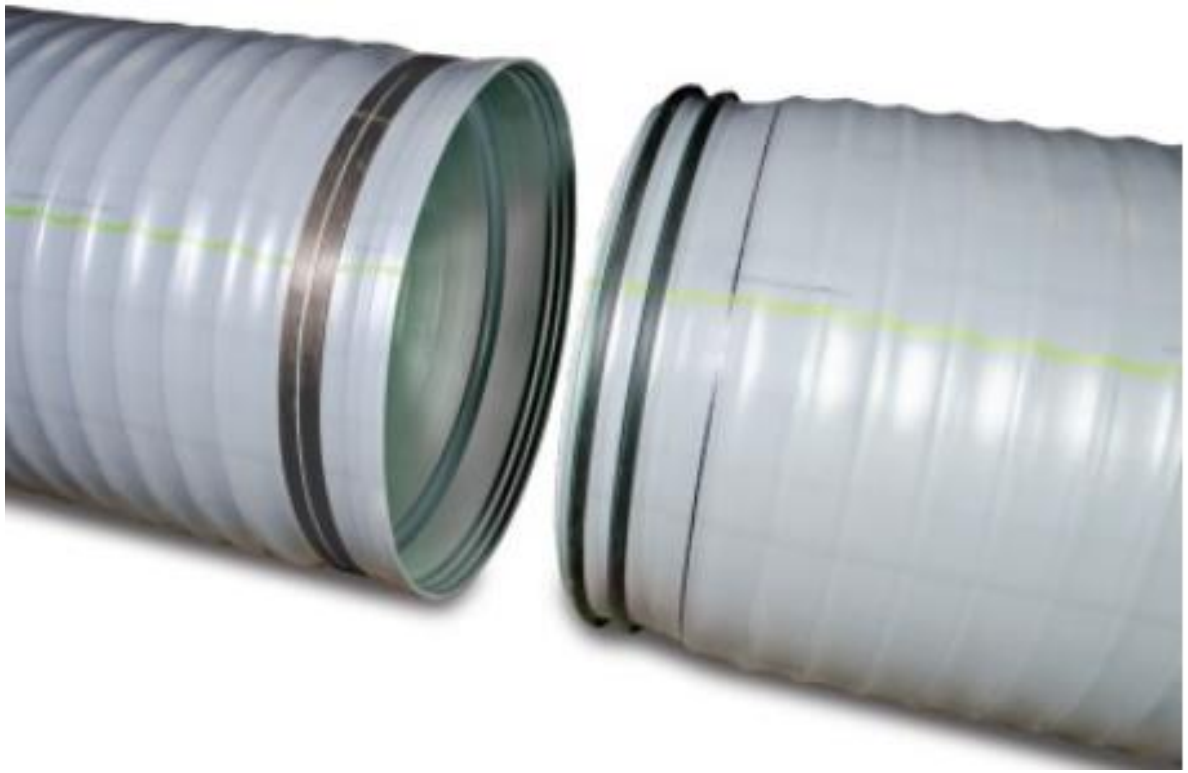
701.2 Connection to sewer required. Sanitary drainage piping from plumbing fixtures in buildings and sanitary drainage piping systems from premises shall be connected to a public *sewer*. Where a public *sewer* is not available, the sanitary drainage piping and systems shall be connected to a private sewage disposal system in compliance with state or local requirements.

Exception: Sanitary drainage piping and systems that convey only the discharge from bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to connect to a public sewer or to a private sewage disposal system provided that the piping or systems are connected to a system in accordance with Chapter 13.

2024 NC Plumbing Code Updates

TABLE 702.3
BUILDING SEWER PIPE

MATERIAL	STANDARD
Polypropylene (PP) plastic pipe	ASTM F2736; ASTM F2764; CSA B182.13

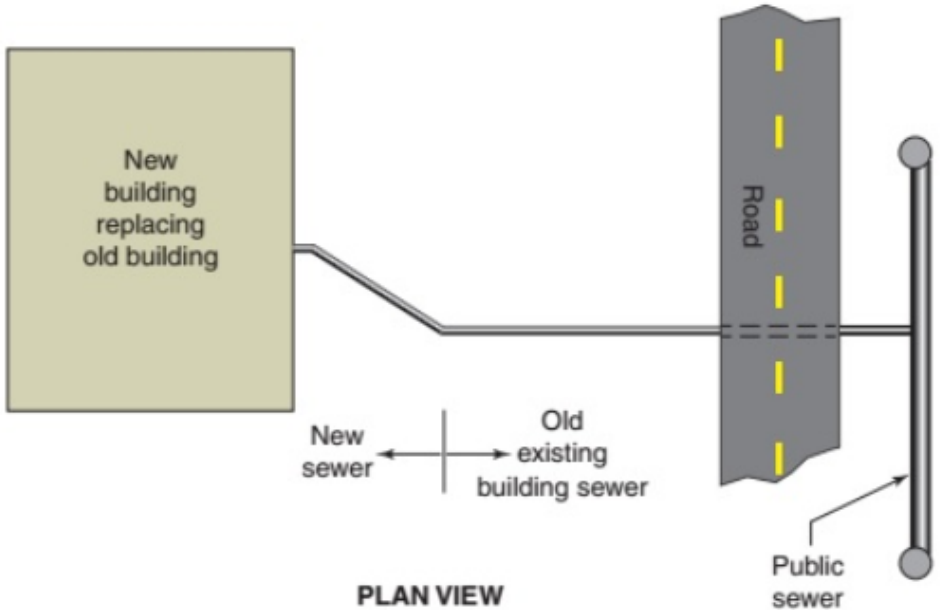


2024 NC Plumbing Code Updates

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

2024 NC Plumbing Code Updates



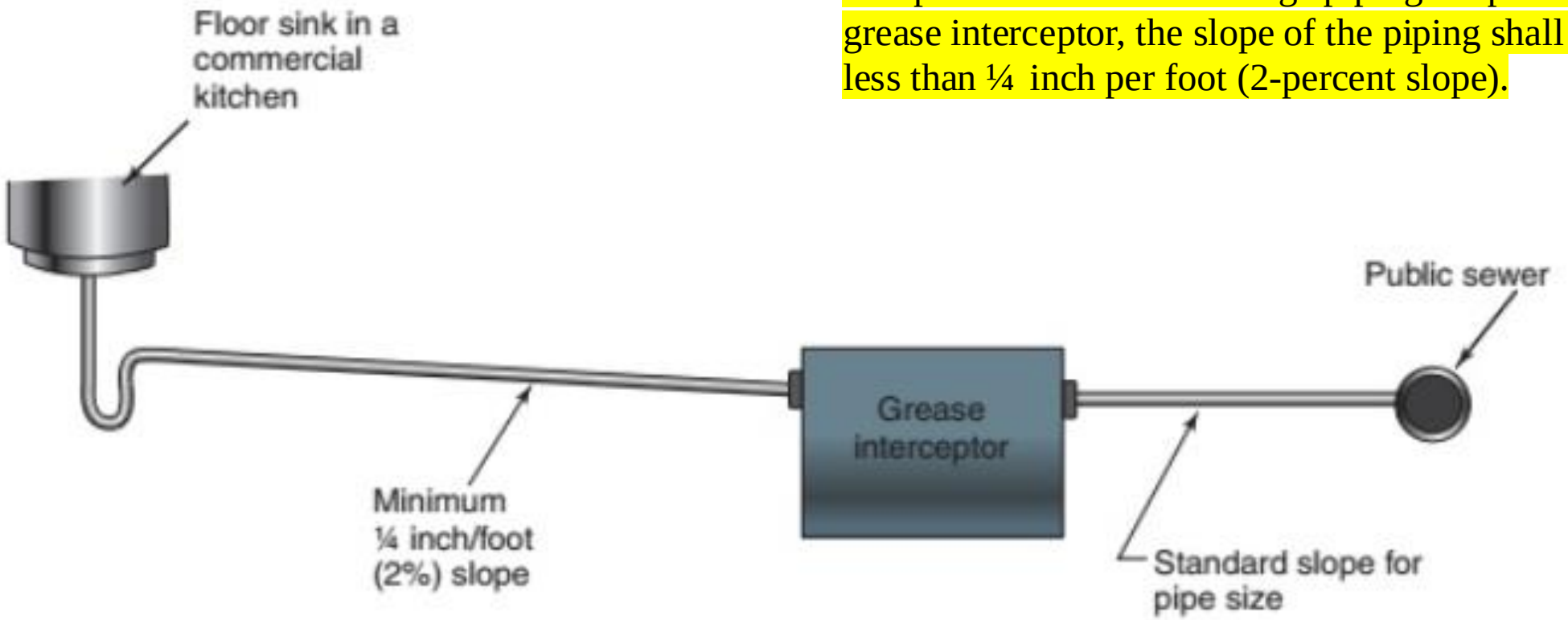
NCPC 2024

703.4 Existing building sewers and building drains. Existing *building sewers* and *drains* shall connect with new *building sewer* and drainage systems only where found by examination and test to conform to the new system in quality of material. Where the entire sanitary drainage system of an existing building is replaced, existing *building drains* under concrete slabs and existing *building sewers* that will serve the new system shall be internally examined to verify that the piping is sloping in the correct direction, is not broken, is not obstructed and is sized for the drainage load of the new plumbing drainage system to be installed.

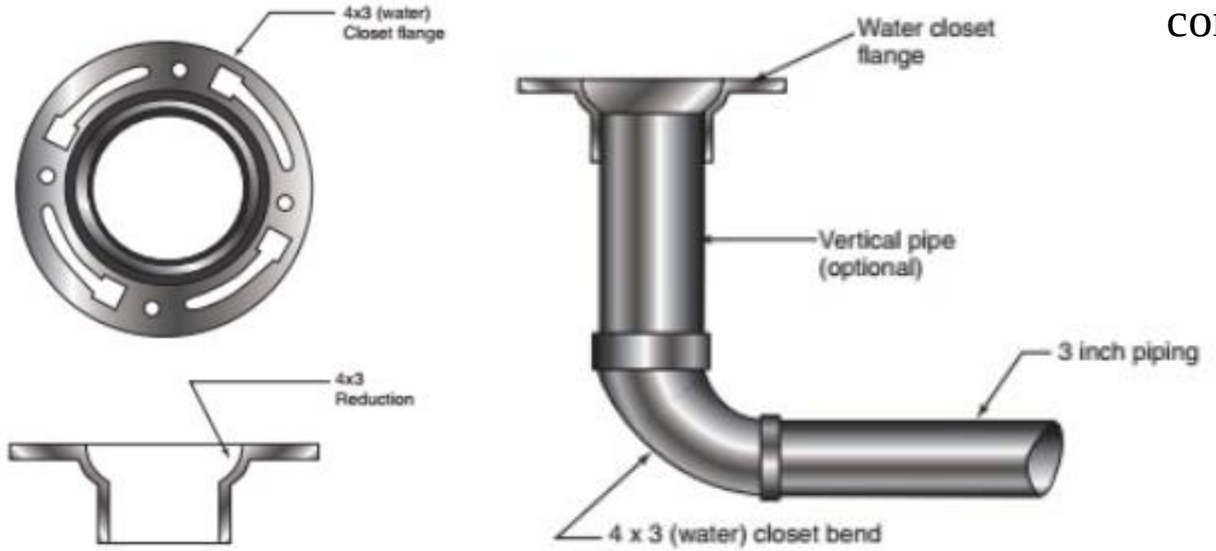
OSFM

2024 NC Plumbing Code Updates

704.1 Slope of horizontal drainage piping. Horizontal drainage piping shall be installed in uniform alignment at uniform slopes. The slope of a horizontal drainage pipe shall be not less than that indicated in Table 704.1 except that where the drainage piping is upstream of a grease interceptor, the slope of the piping shall be not less than ¼ inch per foot (2-percent slope).



2024 NC Plumbing Code Updates



704.2 Reduction in pipe size in the direction of flow.
The size of the drainage piping shall not be reduced in the direction of the flow. The following shall not be considered as a reduction in size in the direction of flow:

1. A 4-inch by 3-inch (102 mm by 76 mm) water closet flange.
2. A water closet bend fitting having a 4-inch (102 mm) inlet and a 3-inch (76 mm) outlet provided that the 4-inch leg of the fitting is upright and below, but not necessarily directly connected to, the water closet flange.
3. An offset closet flange with a full flow, minimum 3-inch (76 mm) interior diameter throat.

2024 NC Plumbing Code Updates

705.2 ABS plastic.

705.2.4 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 PVC plastic.

705.2.4 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.

OSFM

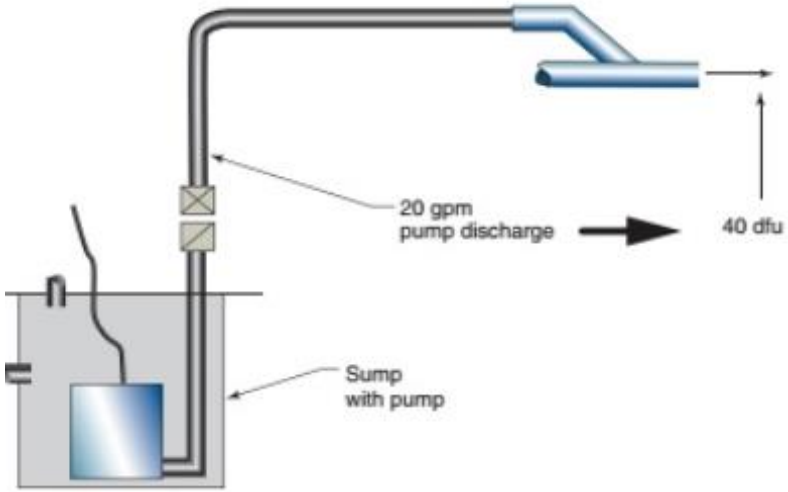
2024 NC Plumbing Code Updates

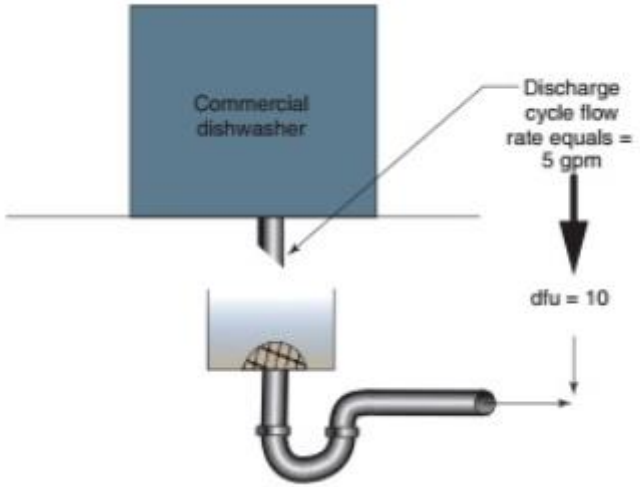
705.16.4 Plastic pipe or tubing to other piping material. Joints between different types of plastic pipe shall be made with an *approved* adapter fitting. Joints between plastic pipe and other piping material shall be made with an *approved* adapter fitting. Joints between plastic pipe and cast-iron hub pipe shall be made by a caulked joint or a mechanical compression joint.

2024 NC Plumbing Code Updates

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.

2024 NC Plumbing Code Updates

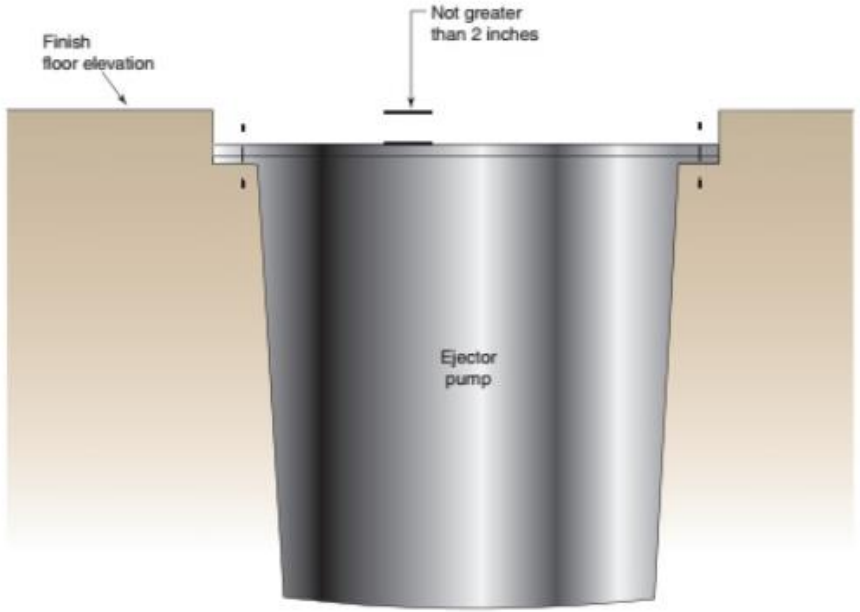




709.3 Conversion of gpm flow to dfu values. Where discharges to a waste receptor or to a drainage system (hub drains, sewage lift pumps, etc.) are only known in gallons per minute (liters per second) values, the *drainage fixture unit* values for those flows shall be computed on the basis that 1 gpm (0.06 L/s) of flow is equivalent to two *drainage fixture units*.

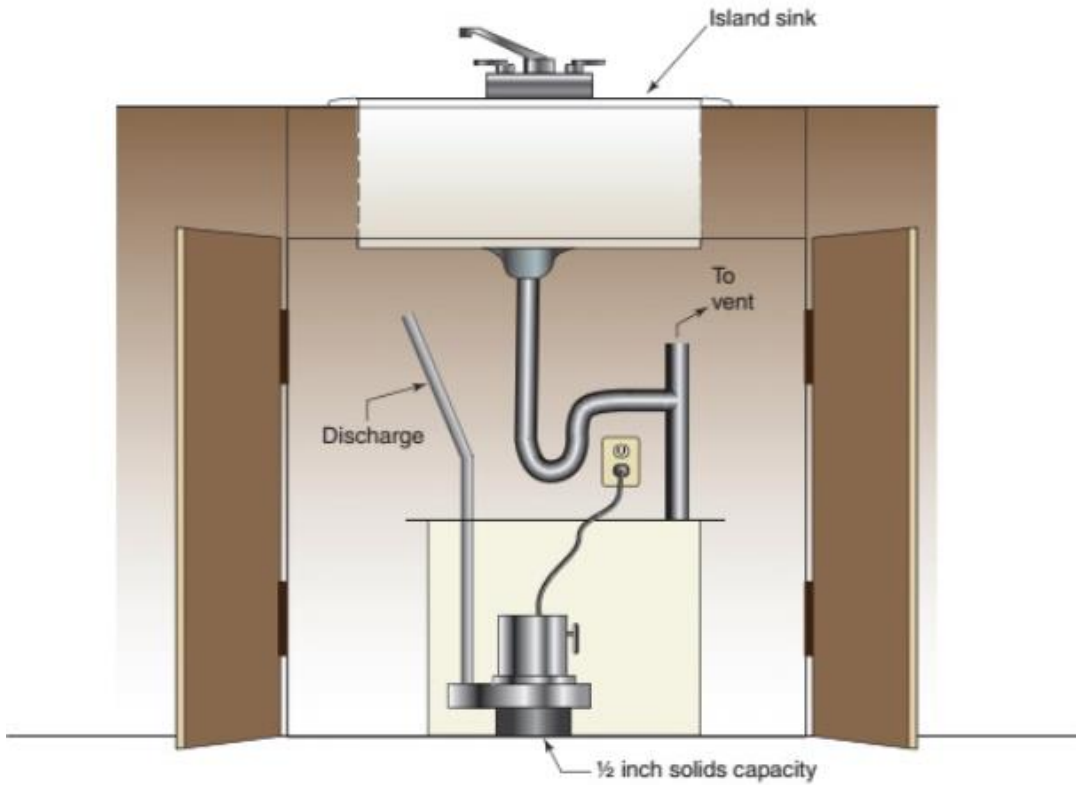
OSFM

2024 NC Plumbing Code Updates



712.3.2 Sump pit. The sump pit shall be not less than 18 inches (457 mm) in diameter and not less than 24 inches (610 mm) in depth, unless otherwise *approved*. The pit shall be provided with *access* and shall be located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, concrete, steel, plastic or other *approved* materials. The pit bottom shall be solid and provide permanent support for the pump. The sump pit shall be fitted with a gastight removable cover that is installed not more than 2 inches (51 mm) below grade or floor level. The cover shall be adequate to support anticipated loads in the area of use. The sump pit shall be vented in accordance with Chapter 9.

2024 NC Plumbing Code Updates



712.4.2 Capacity. A sewage pump or sewage ejector shall have the capacity and head for the application requirements. Pumps or ejectors that receive the discharge of water closets shall be capable of handling spherical solids with a diameter of up to and including 2 inches (51 mm). Other pumps or ejectors shall be capable of handling spherical solids with a diameter of up to and including ½ inch (13 mm). The capacity of a pump or ejector based on the diameter of the discharge pipe shall be not less than that indicated in Table 712.4.2.

Exceptions:

1. Grinder pumps or grinder ejectors that receive the discharge of water closets shall have a discharge opening of not less than 1 ¼ inches (32 mm).
2. Macerating toilet assemblies that serve single water closets shall have a discharge opening of not less than ¾ inch (19.1 mm).

2024 NC Plumbing Code Updates

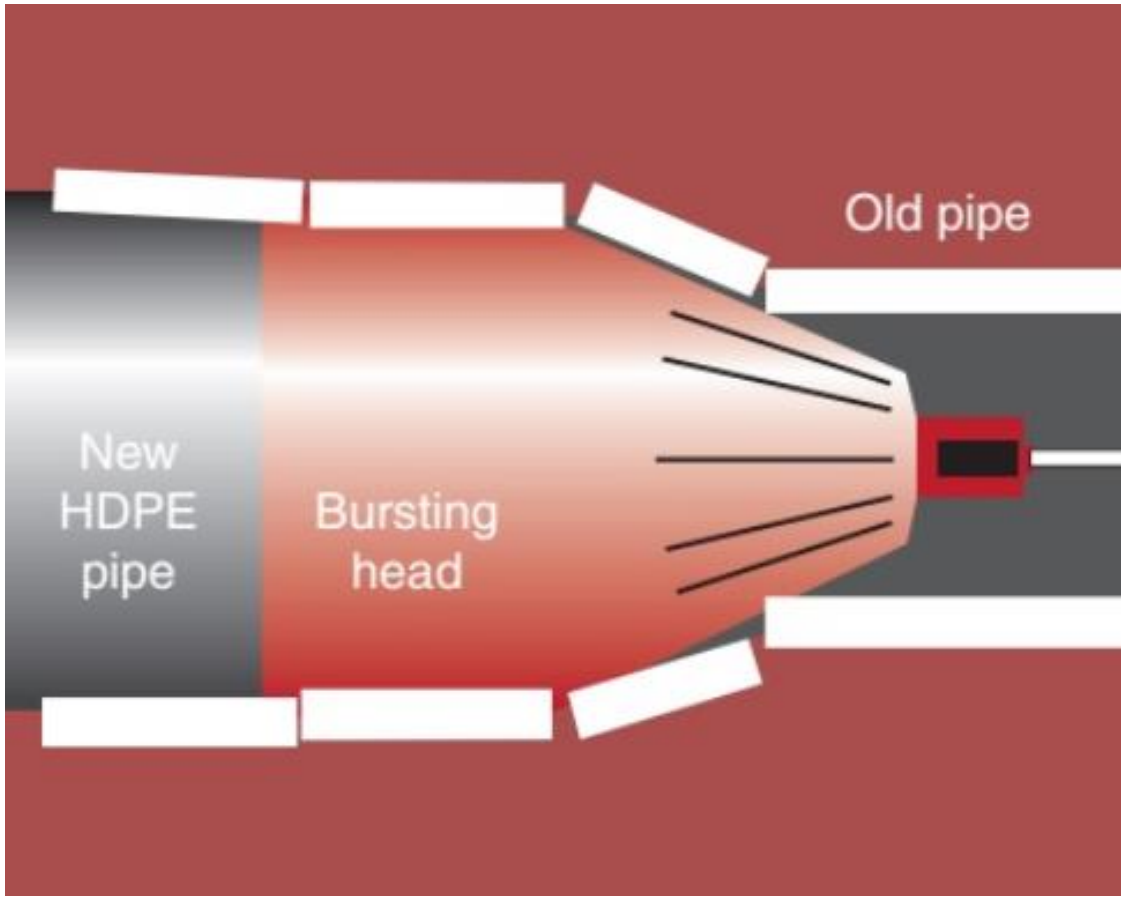
NCPC 2018

SECTION 713
HEALTH CARE PLUMBING

NCPC 2024

~~**SECTION 713**~~
~~**HEALTH CARE PLUMBING**~~

2024 NC Plumbing Code Updates



SECTION 716
REPLACEMENT OF UNDERGROUND BUILDING SEWERS AND BUILDING DRAINS BY PIPE-BURSTING METHODS

716.1 General. This section shall govern the replacement of existing *building sewer* and *building drain* piping by pipe-bursting methods.

OSFM

2024 NC Plumbing Code Updates

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.

OSFM

2024 NC Plumbing Code Updates

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 able to be relined in accordance with the proposed lining system manufacturer's installation requirements and applicablereferenced 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 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.

OSFM

2024 NC Plumbing Code Updates

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.

OSFM

2024 NC Plumbing Code Updates

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

OSFM

2024 NC Plumbing Code Updates

SECTION 718
REHABILITATION OF
BUILDING SEWERS AND BUILDING DRAINS

718.1 Cure-in-place. Sectional cure-in-place rehabilitation of *building sewer* piping and sewer service lateral piping shall be in accordance with ASTM F2599. Main and lateral cure-in-place rehabilitation of *building sewer* and sewer service lateral pipe and their connections to the main sewer pipe shall be in accordance with ASTM F2561. 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.

OSFM

2024 NC Plumbing Code Updates

SECTION 802
INDIRECT WASTES

801.2 Protection. Devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, humidification, distillation, processing, cooling, or storage of ice or foods, and that discharge to the drainage system, shall be provided with protection against backflow, flooding, fouling, contamination and stoppage of the drain.

802.1 Where required. Food-handling equipment, in other than dwelling units, clear-water waste, humidifiers, dishwashing machines and utensils, pots, pans and dishwashing sinks shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.8. Fixtures not required to be indirectly connected by this section and the exception to Section 301.6 shall be directly connected to the plumbing system in accordance with Chapter 7.

OSFM

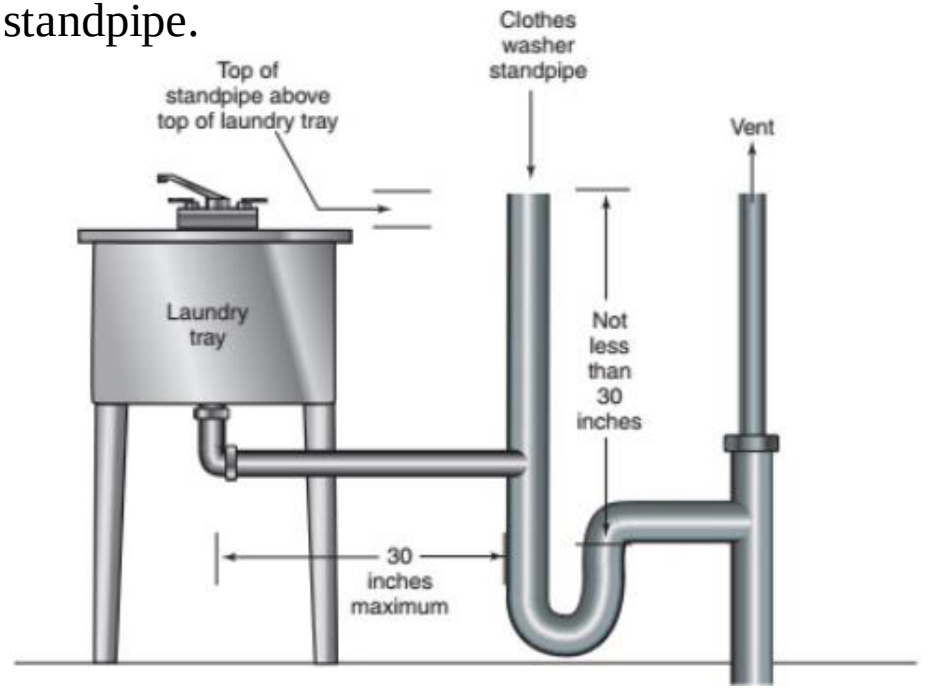
2024 NC Plumbing Code Updates

NCPC 2018

802.3.3 Standpipes. Standpipes shall be individually trapped. *Access* shall be provided to standpipes and drains for rodding. Standpipes shall be 2 inches (51 mm) in diameter and not less than 18 inches (762 mm) or more than 48 inches (1219 mm) in height as measured from the crown weir. The standpipe shall extend 34 inches (864 mm) minimum above the base of the clothes washer unless recommended otherwise by the manufacturer. The connection of a laundry tray waste line may be made into a standpipe for the automatic clothes-washer drain. The standpipe shall extend above the flood level rim of the laundry tray. The outlet of the laundry tray shall be a maximum horizontal distance of 30 inches (762 mm) from the standpipe trap.

NCPC 2024

802.4.3.1 Connection of laundry tray to standpipe. As an alternative for a laundry tray fixture connecting directly to a drainage system, a laundry tray waste line without a fixture trap shall connect to a standpipe for an automatic clothes washer drain. The standpipe shall extend not less than 30 inches (762 mm) above the weir of the standpipe trap and shall extend above the *flood level rim* of the laundry tray. The outlet of the laundry tray shall not be greater than 30 inches (762 mm) horizontal distance from the side of the standpipe.



2024 NC Plumbing Code Updates

SECTION 903
VENT TERMINALS

903.1 Vent terminal required. 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.

903.1.1 Roof extension unprotected. Open vent pipes that extend through a roof shall be terminated not less than 6 inches (152 mm) above the roof.

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.

Exception: Vent terminals greater than 10 feet (3048 mm) from a demarcation line of the occupied area.

OSFM

2024 NC Plumbing Code Updates

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 6 inches (153 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.

2024 NC Plumbing Code Updates

NCPC 2018

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.

NCPC 2024

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.

OSFM

2024 NC Plumbing Code Updates

NCPC 2018

903.5 Location of vent terminal. An open vent terminal from a drainage system shall not be located directly beneath any door, openable window, or other air intake opening of the building or of an adjacent building or property line, and any such vent terminal shall not be within 10 feet (3048 mm) horizontally of such an opening unless it is 2 feet (610 mm) or more above the top of such opening.

NCPC 2024

903.5 Location of vent terminal. An open vent terminal from a drainage system shall not be located directly beneath any door, openable window, or other air intake opening of the building or of an adjacent building, or property line and any such vent terminal shall not be within 10 feet (3048 mm) horizontally of such an opening unless it is 2 feet (610 mm) or more above the top of such opening.

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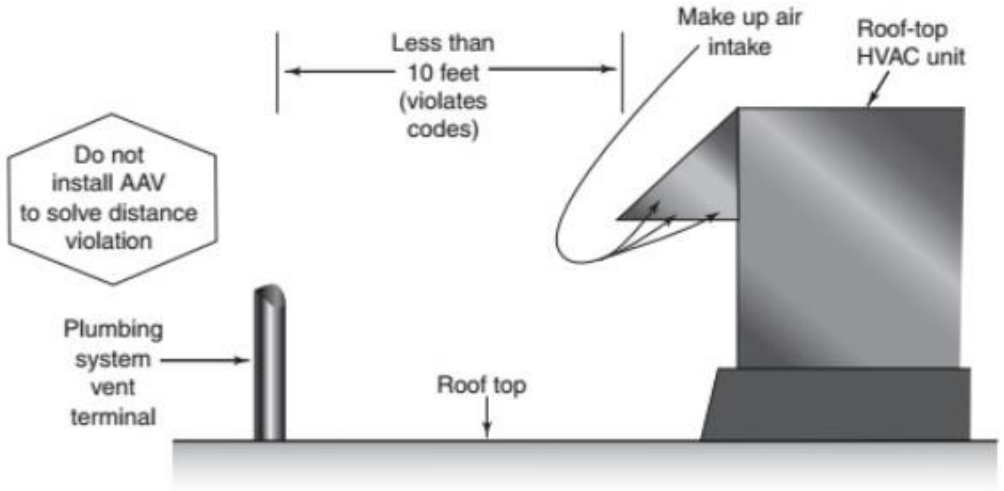
2024 NC Plumbing Code Updates



918.8 Prohibited installations. Air admittance valves shall not be installed in nonneutralized special waste systems as described in Chapter 8 except where such valves are in compliance with ASSE 1049, are constructed of materials *approved* in accordance with Section 702.5, and are tested for chemical resistance in accordance with ASTM F1412. Air admittance valves shall not be located in spaces utilized as supply or return air plenums. Air admittance valves shall not be used to vent sumps or tanks except where the vent system for the sump or tank has been designed by an engineer. Air admittance valves shall not be installed on outdoor vent terminals for the sole purpose of reducing clearances to gravity air intakes or mechanical air intakes.

OSFM

2024 NC Plumbing Code Updates

NCPC 2018

1002.1 Fixture traps.

Exceptions:

~~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).~~

NCPC 2024

1002.1 Fixture traps.

Exceptions:

3. 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 this section.

OSFM

2024 NC Plumbing Code Updates

1002.4 Trap seals. Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures.

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 1002.4.1.5.

1002.4.1.4 Barrier-type trap seal protection device. A barrier-type trap seal protection device shall protect the floor drain trap seal from evaporation. Barrier-type floor drain trap seal protection devices shall conform to ASSE 1072. The devices shall be installed in accordance with the manufacturer's instructions.

OSFM

2024 NC Plumbing Code Updates

1002.4 Trap seals.

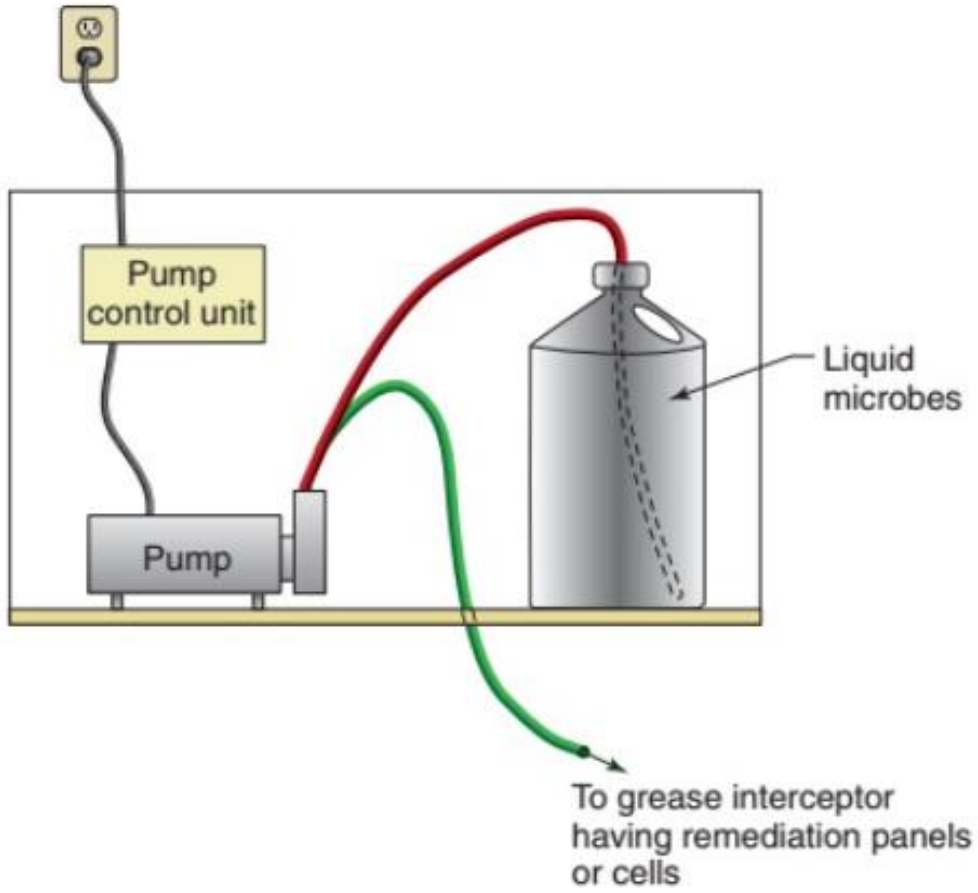
1002.4.1 Trap seal protection.

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. This is not considered double trapping the sink.

OSFM

2024 NC Plumbing Code Updates

1003.3.3 Additives to grease interceptors. Dispensing systems that dispense interceptor performance additives to grease interceptors shall not be installed except where such systems dispense microbes for the enhancement of aerobic bioremediation of grease and other organic material, or for inhibiting growth of pathogenic organisms by anaerobic methods. Such microbial dispensing systems shall be installed only where the grease interceptor manufacturer's instructions allow such systems and the systems conform to ASME A112.14.6. Systems that discharge emulsifiers, chemicals or enzymes to grease interceptors shall be prohibited.



2024 NC Plumbing Code Updates

TABLE 1102.4
BUILDING STORM 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 F628; ASTM F1488; CSA B181.1; CSA B182.1
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, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M
Polypropylene (PP) pipe	ASTM F2881; CSA B182.13
Polyvinyl chloride (PVC) plastic pipe (Type DWV, SDR26, SDR35, SDR41, PS50 or PS100) 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 D3034; ASTM F891; ASTM F1488; CSA B181.2; CSA B182.2; CSA B182.4
Stainless steel drainage systems, Type 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C4; ASTM C700

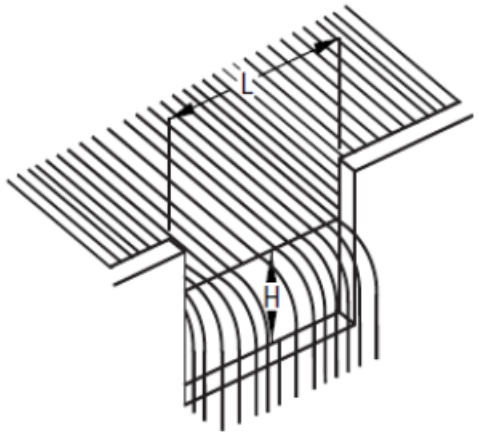
OSFM

2024 NC Plumbing Code Updates

1102.6 Roof drains. Roof drains shall conform to ASME A112.3.1 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.

OSFM

2024 NC Plumbing Code Updates



Head (H) (inches)	CAPACITY OF SCUPPER (gallons per minute) Length (L) of scupper (inches)									
	4	6	8	10	12	18	24	30	36	48
1	10.7	17.4	23.4	29.3	35.4	53.4	71.5	89.5	107.5	143.7
2	30.5	47.5	64.4	81.4	98.5	149.4	200.3	251.1	302.1	404.0
3	52.9	84.1	115.2	146.3	177.8	271.4	364.9	458.5	552.0	739.0
4	76.7	124.6	172.6	220.5	269.0	413.3	557.5	701.8	846.0	1135.0
6	123.3	211.4	299.5	387.5	476.5	741.1	1005.8	1270.4	1535.0	2067.5

For SI:1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m

Based on the Francis formula:

$Q = 3.33 (L - 0.2H) H^{1.5}$

where:

Q = *Flow rate (cubic feet per second).*

L = Length of scupper opening (feet).

H = Head on scupper [feet (measured 6 feet back from opening)].

FIGURE 1106.5
SIZE OF SCUPPERS

1106.5 Parapet wall scupper location. Where scuppers are used for primary roof drainage or for secondary (emergency overflow) roof drainage or both, the quantity, size, location and inlet elevation of the scuppers shall be chosen to prevent the depth of ponding water on the roof from exceeding the maximum water depth that the roof was designed for as determined by Section 1611.1 of the *International Building Code*. Scupper openings shall be not less than 4 inches (102 mm) in height and be designed in accordance with Figure 1106.5 (Note: 1 gpm = 0.0104 * (rainfall rate) * area). The flow through the primary system shall not be considered when locating and sizing secondary scuppers.

OSFM

2024 NC Plumbing Code Updates

1301.1 General. The provisions of Chapter 13 shall govern the materials, design, construction and installation of systems for the collection, storage, treatment and distribution of non-potable water. For non-potable 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 non-potable water. The use and application of non-potable water shall comply with laws, rules and ordinances applicable in the jurisdiction.

2024 NC Plumbing Code Updates

SECTION 1303
NONPOTABLE RAINWATER
COLLECTION AND DISTRIBUTION SYSTEMS

1303.1.1 Fire protection systems. The storage, treatment and distribution of non-potable water to be used for fire protection systems shall be in accordance with the *International Fire Code*.

2024 NC Plumbing Code Updates

1303.15.9 Collected raw rainwater quality. ASTM E2727 shall be used to determine what, if any, site conditions impact the quality of collected raw rainwater and whether those site conditions require treatment of the raw water for the intended end use or make the water unsuitable for specific end uses.

2024 NC Building Code Plumbing Updates

2024 NC **Building** Code Plumbing Updates

2902.1.2 Single-user toilet and bathing room fixtures. The plumbing fixtures located in single-user toilet and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1110.2.1, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of their sex. The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or separate facilities.

Single-User Facilities

Given: Business Classification having an Occupant Load of 60. Toilet facility design chosen to be all single-user facilities.

Per Table 2902.1:

Water Closet Ratio:	1 per 25 for the first 50 and 1 per 50 for the remainder > 50
Lavatory Ratio:	1 per 40 for the first 80 and 1 per 80 for the remainder > 80

Calculations:

WCs: 50/25 + (60-50)/50 = 2.2	Round up to 3 **water closets minimum.**
LAVs: 60/40 = 1.5	Round up to 2. However, because each single-user facility requires a LAV, 3 **lavatories minimum.**

OSFM

2024 NC Building Code Plumbing Updates

SECTION 2902
MINIMUM PLUMBING FACILITIES

2902.1 Minimum number of fixtures.

2902.1.1 Fixture calculations.

2902.1.2 Single-user toilet and bathing room fixtures.

2902.1.3 Lavatory distribution. Where two or more toilet rooms are provided for each sex, the required number of lavatories shall be distributed proportionately to the required number of water closets.

OSFM

2024 NC Building Code Plumbing Updates

NCBC 2018

[P] 2902.6 Small occupancies. Drinking fountains shall not be required for an occupant load of 15 or fewer.

NCPC 2018

410.2 Small occupancies. Deleted.

NCPC 2024

410.2 Small occupancies. Drinking fountains shall not be required for an occupant load of 30 or fewer.

OSFM

2024 NC Building Code Plumbing Updates

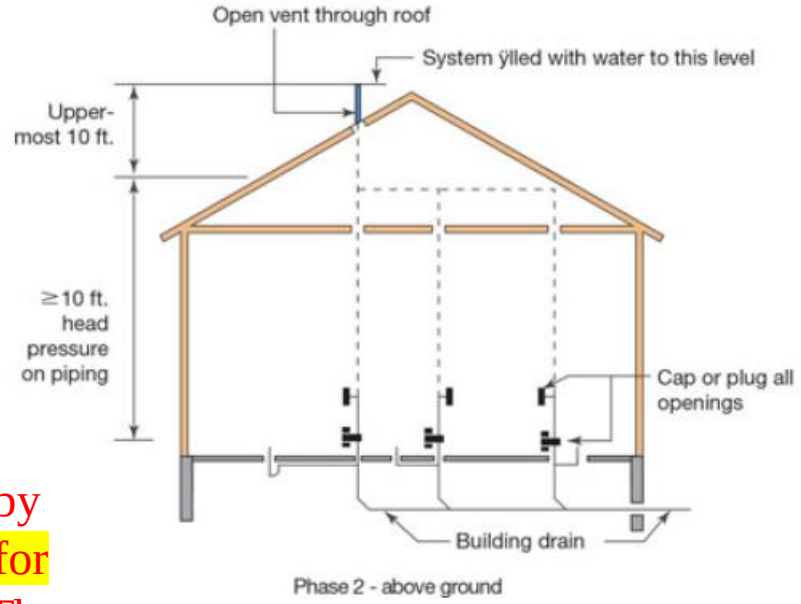
2902.3.3 Location of toilet facilities in occupancies other than malls.

Exceptions:

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

2024 NC Residential Code Plumbing Updates

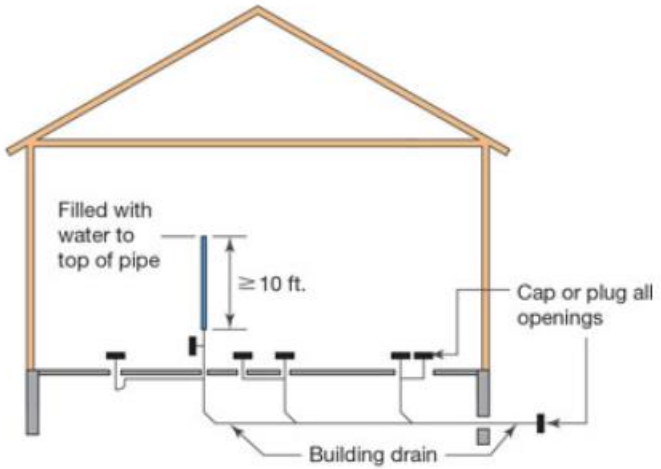
2024 NC **Residential** Code Plumbing Updates



Phase 2 - above ground

P2503.5 Drain, waste and vent systems testing.

P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water, by air for piping systems, or by vacuum or air for plastic piping systems, without evidence of leakage. The test shall be applied to the drainage system in its entirety or in sections after rough-in piping has been installed, as follows:



Phase 1 - below slab

3. Vacuum test. The portion under test shall be evacuated of air by a vacuum-type pump to achieve a uniform gauge pressure of -5 pounds per square inch or a negative 10 inches of mercury column (-34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes.

OSFM

2024 NC Residential Code Plumbing Updates

P2601.2 Connections to drainage system. Plumbing fixtures, drains, appurtenances and *appliances* used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste connections where required by the code.

Exception: All drain waste and vent piping associated with gray water or rainwater recycling systems shall be installed in compliance with this code. Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to systems complying with Sections P2910 and P2911.

OSFM

2024 NC Residential Code Plumbing Updates

P2602.1 General. The water-distribution system of any building or premises where plumbing fixtures are installed shall be connected to a public water supply. Where a public water-supply system is not available, or connection to the supply is not feasible, an individual water supply shall be provided. Individual water supplies shall be constructed and installed in accordance with the applicable state and local laws. Sanitary drainage piping from plumbing fixtures in buildings and sanitary drainage piping systems from premises shall be connected to a public sewer. Where a public sewer is not available, the sanitary drainage piping and systems shall be connected to a private sewage disposal system in compliance with state or local requirements.

Exception: Sanitary drainage piping and systems that convey only the discharge from bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to connect to a public sewer or to a private sewage disposal system provided that the piping or systems are connected to a system in accordance With Section P2910 or P2911.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2603
STRUCTURAL AND PIPING PROTECTION

P2603.5 Freezing.

P2603.5.1 Frost protection. No traps of soil or waste pipe shall be installed or permitted outside of a building, or concealed in outside walls or in any place where they may be subjected to freezing temperatures, unless adequate provision is made to protect them from freezing.

OSFM

2024 NC Residential Code Plumbing Updates

P2604.5 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 the building sewer. The tracer wire shall be not less than 14 AWG and the insulation type shall be listed for direct burial.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2605
SUPPORT

P2605.1 General. Piping shall be supported in accordance with the following:

4.Where horizontal pipes 4 inches (102 mm) and larger convey drainage or waste, and where a pipe fitting changes the flow direction greater than 45 degrees (0.79 rad), rigid bracing or other rigid support arrangements shall be installed to resist movement of the upstream pipe in the direction of flow. A change of flow direction into a vertical pipe shall not require the upstream pipe to be braced.

6. A thermal expansion tank shall be supported in accordance with the manufacturer's instructions. Thermal expansion tanks shall not be supported by the piping that connects to such tanks.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2706
WASTE RECEPTORS

P2706.1 General. Every waste receptor shall be of an *approved* type. A removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall be installed in ventilated spaces. Waste receptors shall not be installed in concealed spaces. Waste receptors shall not be installed in plenums, attics, crawl spaces or interstitial spaces above ceilings and below floors. Waste receptors shall be *readily accessible*.

Exceptions:

1. Where hub drains are installed in a crawl space for condensate waste.
2. This section shall not apply to hub drains in equipment rooms and furnace rooms in dwelling units.
3. Hub drains shall not be required to have strainers.

OSFM

2024 NC Residential Code Plumbing Updates

P2706.1.2.1 Laundry tray connection to standpipe.
Where a laundry tray waste line connects into a standpipe for an automatic clothes washer drain, the standpipe shall extend not less than 30 inches (762 mm) above the standpipe trap weir and shall extend above the flood level rim of the laundry tray. The outlet of the laundry tray shall not be greater than 30 inches (762 mm) horizontally from the standpipe trap.

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018

SECTION P2707
DIRECTIONAL FITTINGS
Deleted.

NCRC 2024

SECTION P2707
DIRECTIONAL FITTINGS

P2707.1 Directional fitting required. *Approved* directional-type branch fittings shall be installed in fixture tailpieces receiving the discharge from food-waste disposer units or dishwashers.

OSFM

2024 NC Residential Code Plumbing Updates

P2708.2 Shower drain.

P2708.2.1 Waste fittings. Waste fittings shall conform to ASME A112.18.2/CSA B125.2.

OSFM

2024 NC Residential Code Plumbing Updates

P2708.4 Shower control 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 112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1. Shower control valves shall be rated for the flow rate of the installed shower head. Such valves shall be installed at the point of use. 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 120ºF (49°C). In-line thermostatic valves shall not be utilized for compliance with this section. Scald preventative valves are not required in dwelling units with individual water heaters set at 120°F (49°C).

2024 NC Residential Code Plumbing Updates

P2709.4 Receptor drains. drain.

P2709.4.1 Waste fittings. Flanged drains shall conform to ASME A112.18.2/CSA B125.2.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2713
BATHTUBS

P2713.1 Bathtub waste outlets and overflows. Where an overflow is installed, the overflow shall be not less than 1 inches (38 mm) in diameter. Bathtubs shall be equipped with a waste outlet and an overflow outlet. The outlets shall be connected to waste tubing or piping not less than 1 ½ inches (38 mm) in diameter. The waste outlet shall be equipped with a water-tight stopper.

Exception: An overflow outlet is not required for bathtubs located on an impervious floor with a floor drain or trench drain, or installed in a shower enclosure.

OSFM

2024 NC Residential Code Plumbing Updates

P2713.3 Bathtub and whirlpool bathtub valves. Bathtubs and whirlpool bathtub valves shall have or be supplied by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70, except where such valves are combination tub/shower valves in accordance with Section P2708.4. The water-temperature-limiting device required by this section shall be equipped with a means to limit the maximum setting of the device to 120ºF (49ºC), and, where adjustable, shall be field adjusted in accordance with the manufacturer's instructions to provide hot water at a temperature not to exceed 120ºF (49ºC). Access shall be provided to water-temperature-limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70.

Exception: Access is not 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.

OSFM

2024 NC Residential Code Plumbing Updates

P2714.3 Approval. Sinks 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.

P2715.2 Approval. Laundry tubs 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.

P2716.3 Approval. Domestic food waste disposers shall conform to ASSE 1008 and shall be listed and labeled in accordance with UL 430.

OSFM

2024 NC Residential Code Plumbing Updates

P2717.2 Sink and dishwasher waste connection. The combined discharge from a dishwasher and a one- or two compartment sink, with or without a food-waste disposer, shall be served by a trap of not less than 1 ½ inches (38 mm) in outside diameter. The waste connection of a residential dishwasher shall connect directly to a wye branch fitting on the tailpiece of the kitchen sink, directly to the dishwasher connection of a food waste disposer, or through an *air break* to a standpipe. The waste line of a residential dishwasher shall rise and shall be securely fastened to the underside of the sink rim or countertop, before connecting to the head of the food-waste disposer or to a wye fitting in the sink tailpiece.

P2717.3 Approval. Residential dishwashers shall conform to NSF 184.

2024 NC Residential Code Plumbing Updates

P2719.3 Approval. Floor drains shall conform to ASME A112.3.1, ASME A112.6.3 or CSA B79.

P2720.6 Approval. Whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10 and shall be listed and labeled in accordance with UL 1795.

P2721.3 Approval. Bidets shall conform to ASME A112.19.2/ CSA B45.1.

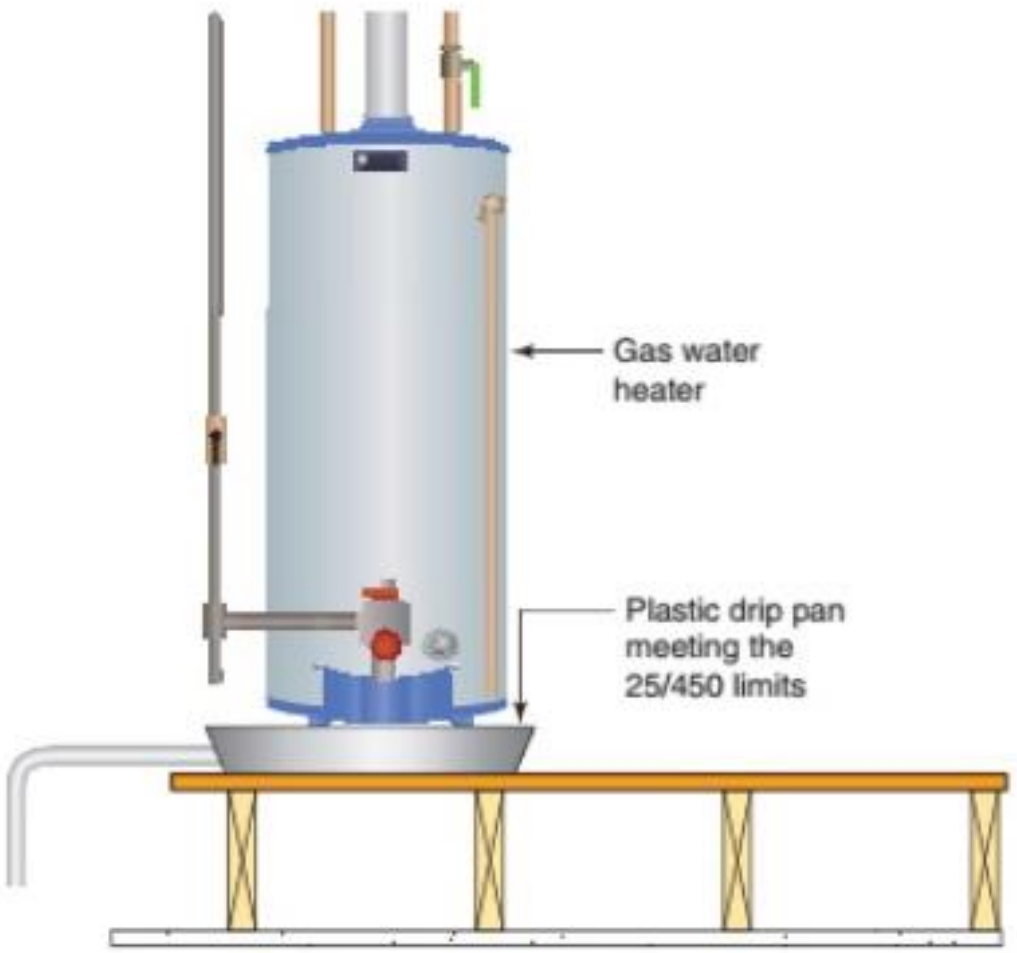
OSFM

2024 NC Residential Code Plumbing Updates

P2801.2 Drain valves. Drain valves for emptying shall be installed at the bottom of each tank-type water heater and hot water storage tank. Drain valves shall conform to ASSE 1005. The drain valve inlet shall be not less than 3/4-inch (19.1 mm) nominal iron pipe size and the outlet shall be provided with a male hose thread.

OSFM

2024 NC Residential Code Plumbing Updates



P2801.6 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in: (a) remote locations such as a suspended ceiling, (b) attics, (c) above occupied spaces, (d) above crawl spaces or (e) in unventilated crawl spaces, a location where water leakage from the tank will cause damage to primary structural framing, the tank or water heater shall be installed in a galvanized steel or aluminum 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 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.

Exception: Water heater(s) installed on concrete slab construction and located on the lowest floor or in a private garage.

OSFM

2024 NC Residential Code Plumbing Updates

P2801.6.1 Pan size and drain. The pan shall be not less Than 1 ½ inches (38 mm) deep and shall be of sufficient size and shape to receive dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe of not less than 3/4 inch (19 mm) diameter. Piping for safety pan drains shall be of those materials indicated in Table P2906.5. Where a pan drain was not previously required, a pan drain shall not be required for a replacement water heater installation.

2024 NC Residential Code Plumbing Updates

P2801.6.1 Pan size and drain.

P2801.6.1.1 Water Heater Located in a Pan. Where Water Heater(s) are subject to water damage when drain pans fill, that portion of the Water Heater shall be installed above the rim of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and approved.

OSFM

2024 NC Residential Code Plumbing Updates

P2801.7 Water heaters installed in garages. Water heaters having an *ignition source* shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the garage floor.

Exception: Elevation of the *ignition source* is not required for *appliances* that are *listed* as flammable vapor ignition-resistant (FVIR).

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018

P2804.6.1 Requirements for discharge pipe. The discharge piping serving a pressure-relief valve, temperature relief valve or combination valve shall:
1. Not be directly connected to the drainage system.
2. Discharge in the same room as the water heater either on the floor, into ~~an indirect waste receptor or into~~ a water heater pan.
   ~~a. Discharge through an *air gap* or air gap fitting to a remote termination point that is observable by the building occupants.~~
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
…

Abridged for demonstration

>

NCRC 2024

P2804.6.1 Requirements for discharge pipe. The discharge piping serving a pressure relief valve, temperature relief valve or combination valve shall:
1. Not be directly connected to the drainage system.
2. Discharge through an *air gap* located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the *air gap*.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
…

Abridged for demonstration

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2808
VEHICLE IMPACT PROTECTION

P2808.1 General. Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturer's installation instructions and this code. Manufacturer's installation instructions shall be available on the job site at the time of inspection.

P2808.2 Protection from impact. *Appliances* located in private garages and carports shall be installed with a minimum clearance of 6 feet (1829 mm) above the floor.

Appliances located out of the normal path of travel are not required to be protected.

> **Exception:** The requirements of this section shall not apply where the appliances are protected from motor vehicle impact and installed in accordance with Figure P2808.1.

OSFM

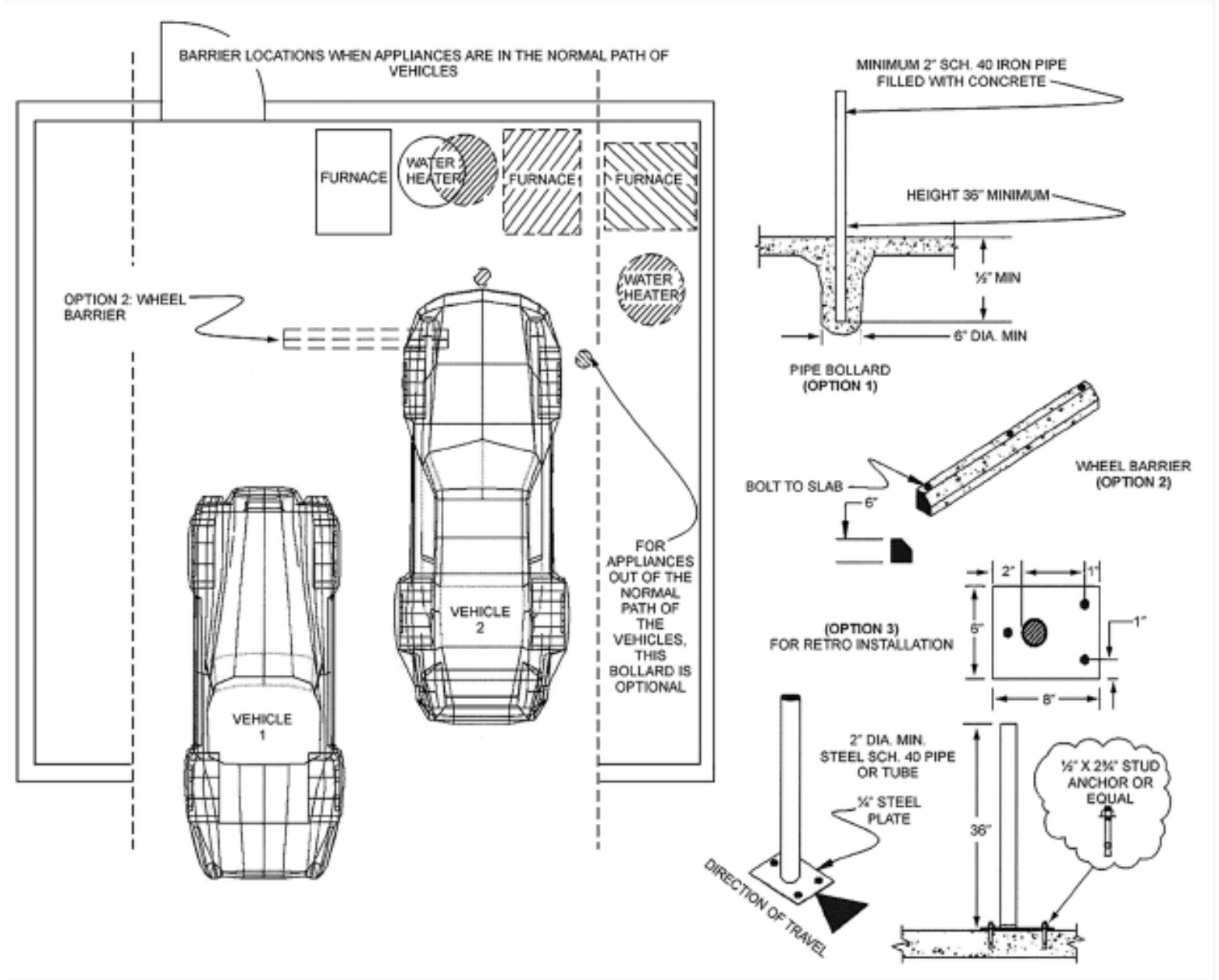


Figure 2808.1
MOTOR VEHICLE IMPACT PROTECTION

2024 NC Residential Code Plumbing Updates

P2901.3 (608.10) Reuse of piping. Piping that has been utilized for any purpose other than conveying potable water shall not be utilized for conveying potable water.

OSFM

2024 NC Residential Code Plumbing Updates

TABLE P2902.3
APPLICATION FOR BACKFLOW PREVENTERS

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"	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" – 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 prevention assembly	High or low hazard	Backpressure or backsiphonage sizes $^3/_8$" – 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 sprinkler systems)	ASSE 1047
Spill-resistant vacuum breaker	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 with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage sizes $^1/_4$" – $^3/_8$"	ASSE 1012, CSA B64.3
Backflow preventer with intermediate atmospheric vent and pressure-reducing valve	Low hazard	Backpressure or backsiphonage sizes $^1/_4$" – $^3/_8$"	ASSE 1081
Dual-check-valve-type backflow preventers	Low hazard	Backpressure or backsiphonage sizes $^1/_4$" – 1"	ASSE 1024, CSA B64.6
Hose-connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure backpressure or backsiphonage sizes $^1/_2$" – 1"	ASSE 1052, CSA B64.2.1.1
Hose-connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage sizes $^1/_2$", $^3/_4$", 1"	ASSE 1011, CSA B64.2, CSA B64.2.1
Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and backsiphonage	ASSE 1035, CSA B64.7
Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only sizes $^1/_4$" – 4"	ASSE 1001, CSA B64.1.1
Vacuum breaker wall hydrants, frost-resistant, automatic-draining type	High or low hazard	Low head backpressure or backsiphonage sizes $^3/_4$" – 1"	ASSE 1019, CSA B64.2.2
Other Means or Methods			
Air gap	High or low hazard	Backsiphonage only	ASME A112.1.2
Air gap fittings for use with plumbing fixtures, appliances and appurtenances	High or low hazard	Backsiphonage or backpressure	ASME A112.1.3

For SI: 1 inch = 25.4 mm.
a. Low hazard—See "*Pollution*" (Section R202). High hazard—See "*Contamination*" (Section R202).
b. See "*Backpressure*" (Section R202). See "*Backpressure, Low Head*" (Section R202). See "*Backsiphonage*" (Section R202).

OSFM

2024 NC Residential Code Plumbing Updates

P2902.6.3 Relief port piping. 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. The termination of the piping from the relief port or air gap fitting of the backflow preventer shall discharge to an *approved* indirect waste receptor or to the outdoors where it will not cause damage or create a nuisance.

OSFM

2024 NC Residential Code Plumbing Updates

P2903.3.1 Pumps handling drinking water. Pumps intended to supply drinking water shall conform to NSF 61.

OSFM

2024 NC Residential Code Plumbing Updates

P2903.5 Water hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves are utilized for clothes washers, dishwashers, ice makers, or similar applications. Water-hammer arrestors shall be installed in accordance with the manufacturer's instructions. Water-hammer arrestors shall conform to ASSE 1010.

OSFM

2024 NC Residential Code Plumbing Updates

P2903.9.1 Service valve. Each *dwelling unit* shall be provided with an accessible main shutoff valve located either inside or outside the dwelling within 5 feet (1524 mm) of the foundation wall in a readily accessible valve box, in the crawl space within 3 feet (914 mm) of the crawl space access door or within the dwelling in a location where it may be accessed without the use of a ladder or a tool. The valve shall be of a full-open type having nominal restriction to flow, with provision for drainage such as a bleed orifice or installation of a separate drain valve.

OSFM

2024 NC Residential Code Plumbing Updates

P2903.9.2 Water heater valve. A *readily accessible* full-open valve shall be installed in the cold-water supply pipe to each water heater within 3 feet (914 mm) the water heater. The valve shall not interfere or cause a disruption of the cold water supply to the remainder of the cold water system. The valve shall be provided with *access* on the same floor level as the water heater served.

2024 NC Residential Code Plumbing Updates

The following slides include significant changes to **Dwelling Unit Fire Sprinkler Systems** Section P2904:

••Section P2904.2.1: Permits intermediate temperature sprinklers to be used in lieu of ordinary temperature sprinklers

••Section P2904.2.3: Allows a listed dry pipe residential sprinkler system for freeze protection

••Section P2904.3.2: Permits a control valve on a standalone sprinkler system

••Section P2904.4.1: Correlates with NFPA 13D and current installation practices for protecting spaces with sloped or beamed ceilings

••Table P2904.6.2(2): Revises the water meter table in the IRC to better correlate with the water meter table in NFPA 13D

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2904
DWELLING UNIT FIRE SPRINKLER SYSTEMS

P2904.1 General. The design and installation of residential automatic sprinkler systems shall be in accordance with NFPA 13D or Section P2904, which shall be considered to be equivalent to NFPA 13D. Partial residential sprinkler systems shall be permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Section P2904 shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system shall provide domestic water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system shall be separate and independent from the water distribution system. A backflow preventer shall not be required to separate a sprinkler system from the water distribution system, provided that the sprinkler system complies with all of the following:

1. The system complies with NFPA 13D or Section P2904.
2. The piping material complies with Section P2906.
3. The system does not contain antifreeze.

OSFM

2024 NC Residential Code Plumbing Updates

P2904.2.1 Temperature rating and separation from heat sources. Except as provided for in Section P2904.2.2, sprinklers shall have a temperature rating of not less than 135°F (57°C) and not more than 225°F (107°C). Sprinklers shall be separated from heat sources as required by the sprinkler manufacturer's installation instructions.

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018

P2904.2.3 Freezing areas. Piping shall be protected from freezing as required by Section P2603.5. Where sprinklers are required in areas that are subject to freezing, dry-sidewall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area shall be installed.

NCRC 2024

P2904.2.3 Freezing areas. Piping shall be protected from freezing as required by Section P2603.5 or by using one of the following:

1. A dry-pipe automatic sprinkler system that is listed for residential occupancy applications.
2. Dry-sidewall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area.

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018

P2904.3.2 Shutoff valves prohibited. With the exception of shutoff valves for the entire water distribution system, valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers.

NCRC 2024

P2904.3.2 Shutoff valves prohibited. With the exception of shutoff valves for the entire water distribution system or a single master control valve for the automatic sprinkler system that is locked in the open position, valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers.

OSFM

NCRC 2024

P2904.4.1.1 Ceiling configurations. Manufacturer's published flow rates for sprinklers tested under a ceiling 8 feet (2438 mm) in height, in accordance with the sprinkler listing, shall be used for the following ceiling configurations, provided that the ceiling surface does not have significant irregularities, lumps or indentations and is continuous in a single plane.

1. Ceilings that are horizontal or that have a slope not exceeding 8 units vertical in 12 units horizontal (67 percent), without beams, provided that the ceiling height, measured to the highest point, does not exceed 24 feet (7315 mm) above the floor. Where the slope exceeds 2 units vertical in 12 units horizontal (17 percent), the highest sprinkler installed along the sloped portion of a ceiling shall be positioned above all communicating openings connecting the sloped ceiling compartment with an adjacent space.
2. Ceilings that are horizontal or that have a slope not exceeding 8 units vertical in 12 units horizontal (67 percent), with beams, provided that the ceiling height, measured to the highest point, does not exceed 24 feet (7315 mm) above the floor. Beams shall not exceed 14 inches (350 mm) in depth, and pendent sprinklers shall be installed under the beams as described at the end of this section. The compartment containing the beamed ceiling shall not exceed 600 square feet (56 m_2) in area. Where the slope does not exceed 2 units vertical in 12 units horizontal (17 percent), the highest sprinkler in the compartment shall be above all communicating openings connecting the compartment with an adjacent space. Where the slope exceeds 2 units vertical in 12 units horizontal (17 percent), the highest sprinkler installed along the sloped portion of a ceiling shall be positioned above all communicating openings connecting the sloped ceiling compartment with an adjacent space.

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2024 NC Residential Code Plumbing Updates

3. Ceilings that have a slope exceeding 2 units vertical in 12 units horizontal (17 percent) but not exceeding 8 units vertical in 12 units horizontal (67 percent), with beams of any depth, provided that the ceiling height, measured to the highest point, does not exceed 24 feet (7315 mm) above the floor. Sidewall or pendent sprinklers shall be installed in each pocket formed by beams. The compartment containing the sloped, beamed ceiling shall not exceed 600 square feet (56 m_2) in area. Pendent, recessed pendent and flush-type pendent sprinklers installed directly under a beam having a maximum depth of 14 inches (356 mm) shall have the sprinkler deflector located not less than 1 inch (25 mm) or more than 2 inches (51 mm) below the bottom of the beam. Pendent sprinklers installed adjacent to the bottom of a beam having a maximum depth of 14 inches (356 mm) shall be positioned such that the vertical centerline of the sprinkler is not more than 2 inches (51 mm) from the edge of the beam, with the sprinkler deflector located not less than 1 inch (25 mm) or more than 2 inches (51 mm) below the bottom of the beam. Pendent sprinklers shall also be permitted to be installed less than 1 inch (25 mm) below the bottom of a beam where in accordance with manufacturer's instructions for installation of flush sprinklers.

P2904.4.1.2 Ceiling configurations with special sprinkler listings. For ceiling configurations not specified in Section 2904.4.1.1, the manufacturer's published flow rate for sprinklers that have been listed for protection of such configurations shall be used.

P2904.4.1.3 Other ceiling configurations. For ceiling configurations not addressed by Section P2904.4.1.1 or P2904.4.1.2, the flow rate shall be subject to approval by the building official.

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2024 NC Residential Code Plumbing Updates

NCRC 2018

TABLE P2904.6.2(2)
MINIMUM WATER METER PRESSURE LOSS (PL_m)[a]

FLOW RATE (gallons per minute, gpm)[b]	5/8-INCH METER PRESSURE LOSS (pounds per square inch, psi)	3/4-INCH METER PRESSURE LESS (pounds per square inch, psi)	1-INCH METER PRESSURE LOSS (pounds per square inch, psi)
8	2	1	1
10	3	1	1
12	4	1	1
14	5	2	1
16	7	3	1
18	9	4	1
20	11	4	2
22	NP	5	2
24	NP	5	2
26	NP	6	2
28	NP	6	2
30	NP	7	2
32	NP	7	3
34	NP	8	3
36	NP	8	3

For SI: 1 inch = 25.4 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.063 L/s.
NP—Not permitted unless the actual water meter pressure loss is known.
a. Table P2904.6.2(2) establishes conservative values for water meter pressure loss or installations where the water meter loss is unknown. Where the actual water meter pressure loss is known, P_m shall be the actual loss.
b. Flow rate from Section P2904.4.2. Add 5 gpm to the flow rate required by Section P2904.4.2 where the water-service pipe supplies more than one dwelling.

NCRC 2024

TABLE P2904.6.2(2)
MINIMUM WATER METER PRESSURE LOSS (PL_m)[a]

FLOW RATE (gallons per minute, gpm)[b]	5/8-INCH METER PRESSURE LOSS (pounds per square inch, psi)	3/4-INCH METER PRESSURE LESS (pounds per square inch, psi)	1-INCH METER PRESSURE LOSS (pounds per square inch, psi)
8	3	3	1
10	3	3	1
12	4	3	1
14	6	5	1
16	7	6	1
18	9	7	2
20	11	9	2
23	14	11	3
26	18	14	3
31	26	22	4
39	38	35	6
52	NP	NP	10

For SI: 1 inch = 25.4 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.063 L/s.
NP = Not permitted unless the actual water meter pressure loss is known.
a. Table P2904.6.2(2) establishes conservative values for water meter pressure loss or installations where the water meter loss is unknown. Where the actual water meter pressure loss is published and available from the meter manufacturer, PL_m shall be the published pressure loss for the selected meter.
b. Flow rate from Section P2904.4.2. Add 5 gpm to the flow rate required by Section P2904.4.2 where the water service pipe supplies more than one dwelling.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2905
HEATED WATER DISTRIBUTION SYSTEMS

P2905.1 Heated water circulation systems and heat trace systems.

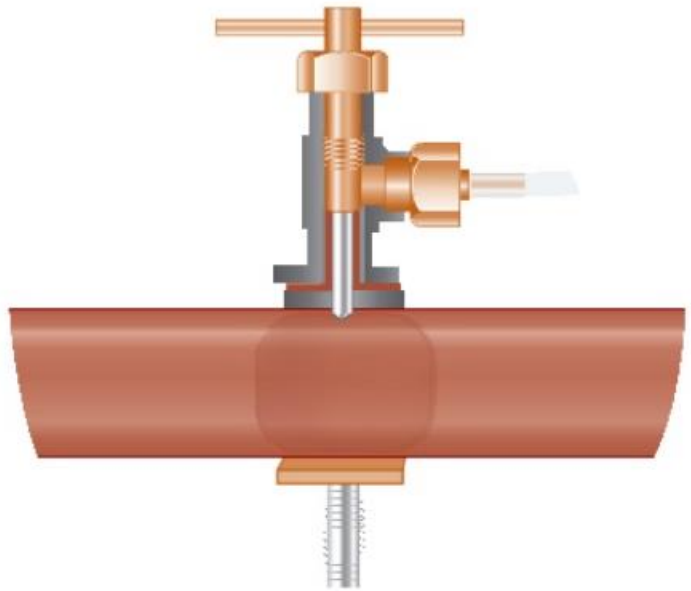
P2905.3 Hot water supply to fixtures. The *developed length* of hot water piping, from the source of the hot water to the fixtures that require hot water, shall not exceed 100 feet (30.48 m). Water heaters and recirculating system piping shall be considered to be sources of hot water.

OSFM

2024 NC Residential Code Plumbing Updates

P2906.6 Fittings.

P2906.6.1 Saddle tap fittings. The use of saddle tap fittings and combination saddle tap and valve fittings shall be prohibited.



2024 NC Residential Code Plumbing Updates

NCRC 2018

P2906.17.3 Stainless steel. Joints between stainless steel and different piping materials shall be made with a mechanical joint of the compression or mechanical-sealing type or a dielectric fitting ~~or a dielectric union conforming to ASSE 1079.~~

>

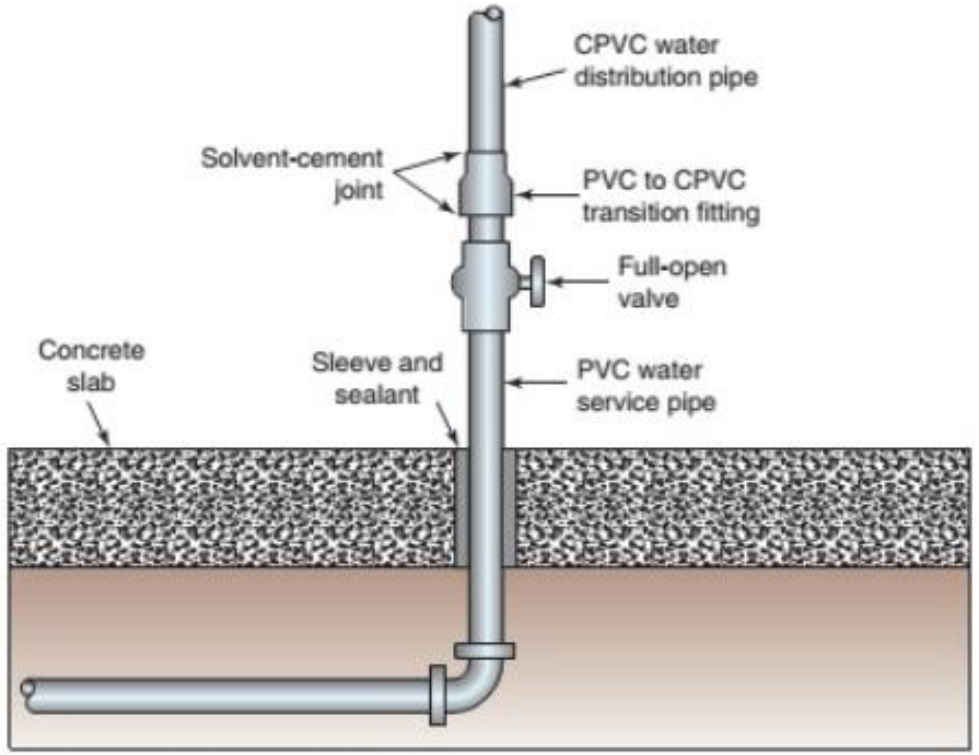
NCRC 2024

P2906.18.4 Stainless steel. Joints between stainless steel and different piping materials shall be made with a mechanical joint of the compression or mechanical-sealing type or a dielectric fitting.

OSFM

2024 NC Residential Code Plumbing Updates

P2906.18.2 Joint between PVC water service and CPVC water distribution. Where a PVC water service pipe connects to a CPVC pipe at the beginning of a water distribution system, the transition shall be by a mechanical fitting, an *approved* adapter fitting or transition fitting.



2024 NC Residential Code Plumbing Updates

P2906.20 Polyethylene of raised temperature plastic.

P2906.20.2 Heat fusion joints. Joints shall be of the socket-fusion, saddle-fusion, or butt-fusion type, and shall be joined in accordance with ASTM D2657. Joint surfaces shall be clean and free of moisture. Joint surfaces shall be heated to melt temperatures and joined. The joint shall remain undisturbed until cool. Fittings shall be manufactured in accordance with ASTM D2683 or ASTM D3261.

P2906.20.3 Electrofusion joints. Joints shall be of the electrofusion type. Joint surfaces shall be clean and free of moisture and scoured to expose virgin resin. Joint surfaces shall be heated to melt temperatures for a period of time specified by the manufacturer and joined. The joint shall remain undisturbed until cool. Fittings shall be manufactured in accordance with ASTM F1055.

OSFM

2024 NC Residential Code Plumbing Updates

P2906.21 Push-fit fitting joints. Push-fit fittings shall be used only on copper-tube-size outside diameter dimensioned CPVC, PEX, PE-RT and copper tubing. Push-fit fittings shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P2910
NONPOTABLE WATER SYSTEMS

P2910.1 Scope. The provisions of Sections P2909, P2910, P2911, P2912 and P2913 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

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018

SECTION P2910
NONPOTABLE WATER SYSTEMS

P2910.14 Outdoor outlet access. Deleted.

NCRC 2024

SECTION P2910
NONPOTABLE WATER SYSTEMS

P2910.14 Outdoor outlet access. Sillcocks, hose bibbs, wall hydrants, yard hydrants and other outdoor outlets supplied by nonpotable water shall be located in a locked vault or shall be operable only by means of a removable key.

OSFM

2024 NC Residential Code Plumbing Updates

P3001.2 Protection from freezing. Water pipes installed in a wall or ceiling exposed to the exterior shall be located on the heated side of the wall insulation. Water, soil and waste pipes shall not be installed outside of a building. When soil and waste piping is installed under a non-enclosed area of a building or structure, freeze protections shall be installed at the discretion of the authority having jurisdiction. When installed in unconditioned utility rooms, or in the building in any other place subjected to freezing temperatures, adequate provision shall be made to protect such pipes from freezing by a minimum of R6.5 insulation determined at 75°F (24°C) in accordance with ASTM C177 or heat, or both.

No traps of soil or waste pipe shall be installed or permitted outside of a building, or concealed in outside walls or in any place where they may be subjected to freezing temperatures, unless adequate provision is made to protect them from freezing.

Exterior water supply system piping shall be installed below the frost line and in no case less than 12 inches (305 mm) below grade.

Building sewers that connect to private sewage disposal systems shall be installed not less than 3 inches (76.2 mm) below finished grade at the point of septic tank connection. *Building sewers* shall be installed not less than 3 inches (76.2 mm) below grade.

Note: These provisions are minimum requirements, which have been found suitable for normal weather conditions. Abnormally low temperatures for extended periods may require additional provisions to prevent freezing.

OSFM

2024 NC Residential Code Plumbing Updates

P3002.3.1 Drainage. Drainage fittings shall have a smooth interior waterway of the same diameter as the piping served. Fittings shall conform to the type of pipe used. Drainage fittings shall not have ledges, shoulders or reductions that can retard or obstruct drainage flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type, black or galvanized. Drainage fittings shall be designed to maintain ¼ unit vertical in 12 units horizontal (2-percent slope) grade. This section shall not be applicable to tubular waste fittings used to convey vertical flow upstream of the trap seal liquid level of a fixture trap. This section shall not be applicable to tubular waste fittings used to convey vertical flow upstream of the trap seal liquid level of a fixture trap.

OSFM

2024 NC Residential Code Plumbing Updates

P3003.3 ABS plastic.

P3003.3.4 Push-fit fitting 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.

P3003.9 PVC plastic.

P3003.9.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

OSFM

2024 NC Residential Code Plumbing Updates

P3005.1.6 Drainage piping size reduction in the direction of flow. The size of the drainage piping shall not be reduced in the direction of the flow. The following shall not be considered a reduction in size in the direction of flow:

1. A 4-inch by 3-inch (102 mm by 76 mm) water closet flange.
2. A water closet bend fitting having a 4-inch (102 mm) inlet and a 3-inch (76 mm) outlet provided that the 4-inch (102 mm) leg of the fitting is upright and below, but not necessarily directly connected to, the water closet flange.
3. An offset closet flange with a full flow, minimum 3-inch interior diameter throat

OSFM

NCRC 2018

P3005.2.5 (708.1.5) Cleanout size.

Exceptions:

1. “P” traps connected to the drainage piping with slip joints or ground joint connections.
2. “P” traps into which floor drains, shower drains or tub drains with removable strainers discharge.
3. “P” traps into which the straight-through type waste and overflow discharge with the overflow connecting to the top of the tee.
4. “P” traps into which residential washing machines discharge.
5. Test tees or cleanouts in a vertical pipe.
6. Cleanout near the junction of the building drain and the building sewer which may be rodded both ways.
7. Water closets for the water closet fixture drain only.
8. Cast-iron cleanout sizing shall be in accordance with referenced standards in Table P3002.3, ~~ASTM A74 for hub and spigot fittings or ASTM A888 or CISPI 301 for hubless fittings.~~
9. Cleanouts located on *stacks* can be one size smaller than the *stack* size

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P3005.2.5 Cleanout size.

Exceptions:

1. A removable P-trap with slip- or ground-joint connections can serve as a cleanout for drain piping that is one size larger than the P-trap size.
2. Cleanouts located on stacks can be one size smaller than the stack size.
3. The size of cleanouts for cast-iron piping can be in accordance with the referenced standards for cast iron fittings as indicated in Table P3002.3.
4. “P” traps into which floor drains, shower drains or tub drains with removable strainers discharge.
5. “P” traps into which the straight-through type waste and overflow discharge with the overflow connecting to the top of the tee.
6. “P” traps into which residential washing machines discharge.
7. Test tees or cleanouts in a vertical pipe.
8. Cleanout near the junction of the building drain and the building sewer which may be rodded both ways.
9. Water closets for the water closet fixture drain only.

OSFM

2024 NC Residential Code Plumbing Updates

P3005.2.10 Cleanout access.

P3005.2.10.1 Cleanout equivalent. A fixture trap or a fixture with an integral trap, removable without altering the concealed piping, shall be acceptable as a cleanout equivalent.

OSFM

2024 NC Residential Code Plumbing Updates

P3005.6 Dead ends. In the installation or removal of any part of a drainage system, dead ends shall be prohibited. Cleanout extensions and approved future fixture drainage piping shall not be considered as dead ends.

OSFM

2024 NC Residential Code Plumbing Updates

SECTION P3010
REPLACEMENT OF UNDERGROUND BUILDING SEWERS AND BUILDING DRAINS BY PIPE BURSTING METHODS

P3010.8 Pressure testing. The replacement piping system shall be tested in accordance with Section P2503.4.

2024 NC Residential Code Plumbing Updates

SECTION P3011
RELINING OF BUILDING SEWERS AND BUILDING DRAINS

P3011.1 General. This section shall govern the relining of existing *building sewer* and building drainage piping.

P3011.2 Applicability. The relining of existing *building sewer* piping 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.

P3011.3 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.

P3011.3.1 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).

P3011.4 Permitting. Prior to issuing a permit for relining, the building official shall review and evaluate the preinstallation recorded video camera survey to determine whether the piping system is able to be relined in accordance with the proposed lining system manufacturer's installation requirements and applicable referenced standards.

P3011.5 Prohibited applications. Where 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, backslope or insufficient slope, complete pipe wall deterioration or complete separations such as from tree root invasion or improper support.

P3011.6 Relining materials. The relining materials shall be manufactured in compliance with applicable standards and certified as required in Section P2609. Fold-and-form pipe reline materials shall be manufactured in compliance with ASTM F1504 or ASTM F1871.

P3011.7 Installation. The installation of relining materials shall be performed in accordance with the manufacturer's installation instructions, applicable referenced standards and this code.

P3011.7.1 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 building official prior to final approval.

P3011.8 Post-installation recorded video camera survey. When a permit is issued, the completed relined piping system shall be inspected internally by a live video camera survey after the system has been flushed and flow-tested with water. The video survey shall be submitted to the building 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.

P3011.9 Certification. Certification shall be provided in writing to the building 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.

P3011.10 Approval. Upon verification of compliance with the requirements of Sections P3011.1 through P3011.9, the building official shall approve the installation.

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2024 NC Residential Code Plumbing Updates

SECTION P3103
VENT TERMINALS

P3103.1 Vent pipes terminating outdoors. Vent pipes terminating outdoors shall be extended to the outdoors through the roof or a sidewall of the building in accordance with one of the methods identified in Sections 3103.1.1 through P3103.1.4.

P3103.1.1 Roof extension. Open vent pipes that extend through a roof that do not meet the conditions of Section P3103.1.2 or P3103.1.3 shall terminate not less than 6 inches (150 mm) above the roof or 6 inches (150 mm) above the anticipated snow accumulation, whichever is greater.

P3103.1.2 Roof used for recreational purposes. Where a roof is to be used for assembly, as a promenade, observation deck or sunbathing deck, or for similar purposes, open vent pipes shall terminate not less than 7 feet (2134 mm) above the roof.

Exception: Vent terminals greater than 10 feet from a demarcation line of the occupied area.

P3103.1.3 Roof extension covered. 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 6 inches (153 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.

P3103.1.4 Sidewall vent terminal. Vent terminals extending through the wall shall terminate not less than 10 feet (3048 mm) from a *lot line* and not less than 10 feet (3048 mm) above the highest grade elevation within 10 feet (3048 mm) in any direction horizontally of the vent terminal. Vent pipes shall not terminate under the overhang of a structure where the overhang includes soffit vents. Such vent terminals shall be protected by an *approved* method that prevents birds and rodents from entering or blocking the vent pipe opening and that does not reduce the open area of the vent pipe.

P3103.2 Frost closure. Deleted.

P3103.3 Flashings and sealing. The juncture of each vent pipe with the roof line shall be made watertight by an *approved* flashing. Vent extensions in walls and soffits shall be made weathertight by caulking.

P3103.4 Prohibited use. A vent terminal shall not be used for any purpose other than a vent terminal. Vent terminals shall not be used as a flag pole or to support flag poles, television aerials or similar items, except when the piping has been anchored in an approved manner.

P3103.5 Location of vent terminal. An open vent terminal from a drainage system shall not be located directly beneath any door, openable window, or other air intake opening of the building or of an adjacent building or property line, and any such vent terminal shall not be within 10 feet (3048 mm) horizontally of such an opening unless it is 2 feet (610 mm) or more above the top of such opening.

P3103.6 Extension through the wall. 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. Side wall vent terminals shall be protected to prevent birds or rodents from entering or blocking the vent opening.

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2024 NC Residential Code Plumbing Updates

SECTION P3110
CIRCUIT VENTING
DELETED.

SECTION P3111
COMBINATION WASTE AND VENT SYSTEM
DELETED.

OSFM

2024 NC Residential Code Plumbing Updates

P3114.8 Prohibited installations. *Air admittance valves* shall not be used to vent sumps or tanks except where the vent system for the sump or tank has been designed by an engineer. *Air admittance valves* shall not be installed on outdoor vent terminals for the sole purpose of reducing clearances to gravity or mechanical air intakes. *Air admittance valves* shall not be located in spaces utilized as supply or return air plenums.

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018	NCRC 2024
P3201.2.1.4 (1002.4.1.4) Barrier-type trap seal protection device. Deleted.	**P3201.2.1.4 Barrier-type trap seal protection device.** A barrier-type trap seal protection device shall protect the floor drain trap seal from evaporation. Barrier-type floor drain trap seal protection devices shall conform to ASSE 1072. The devices shall be installed in accordance with the manufacturer's instructions.

OSFM

2024 NC Residential Code Plumbing Updates

NCRC 2018

TABLE P3201.7
SIZE OF TRAPS FOR PLUMBING FIXTURES

PLUMBING FIXTURE	TRAP SIZE MINIMUM (inches)
Bathtub (with or without shower head and/or whirlpool attachments)	1 1/2
Bidet	1 1/4
Clothes washer standpipe	2
Dishwasher (on separate trap)	1 1/2
Floor drain	2
Kitchen sink (one or two traps, with or without dishwasher and food waste disposer)	1 1/2
Laundry tub (one or more compartments)	1 1/2
Lavatory	1 1/4
Shower (based on the total flow rate through showerheads and bodysprays) Flow rate: 5.7 gpm and less More than 5.7 gpm up to 12.3 gpm More than 12.3 gpm up to 25.8 gpm More than 25.8 gpm up to 55.6 gpm	 1 1/2 2 3 4

For SI: 1 inch = 25.4 mm.

NCRC 2024

TABLE P3201.7
SIZE OF TRAPS FOR PLUMBING FIXTURES

PLUMBING FIXTURE	TRAP SIZE MINIMUM (inches)
Bathtub (with or without shower head and/or whirlpool attachments)	1 1/2
Bidet	1 1/4
Clothes washer standpipe	2
Dishwasher (on separate trap)	1 1/2
Floor drain	2
Kitchen sink (one or two traps, with or without dishwasher and food waste disposer)	1 1/2
Laundry tub (one or more compartments)	1 1/2
Lavatory	1 1/4
Shower (based on the total flow rate through showerheads and body sprays) Flow rate:	
5.7 gpm and less	2
More than 5.7 gpm up to 12.3 gpm	2
More than 12.3 gpm up to 25.8 gpm	3
More than 25.8 gpm up to 55.6 gpm	4

For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m.

OSFM

Common Interpretation Requests

OSFM

2024 NC Plumbing Code Updates
– Common Interpretation Requests

NCPC and NCRC 2024

P2503.7 (312.5) Water distribution system testing. Upon completion of a section of or the entire water distribution system, the system, or portion completed, shall be tested and proved tight under a water or air test of not less than 100 psi (688 kPa). Repaired sections of existing water systems shall be tested at existing operating pressure. This pressure shall be held for not less than 15 minutes. The water utilized for tests shall be obtained from a potable source of supply. The required tests shall be performed in accordance with this section.

OSFM

2024 NC Plumbing Code Updates – Common Interpretation Requests

NCBC 2024

2902.3 Employee and public toilet facilities. For structures and tenant spaces intended for public utilization, customers, patrons and visitors shall be provided with public toilet facilities. Employees associated with structures and tenant spaces shall be provided with toilet facilities. The number of plumbing fixtures located within the required toilet facilities shall be provided in accordance with Section 2902 for all users. Employee toilet facilities shall be either separate or combined employee and public toilet facilities.

Exception: *Public* toilet facilities shall not be required for:

1. Parking garages where operated without parking attendants.
2. Structures and tenant spaces intended for quick transactions, including takeout, pickup and drop-off, having a public access area less than or equal to 300 square feet (28 m_2).

OSFM

2024 NC Plumbing Code Updates – Common Interpretation Requests

NCPC and NCRC 2024

P3005.2 (708.1) Cleanouts required. Cleanouts shall be provided for drainage piping in accordance with Sections P3005.2.1 through P3005.2.11.

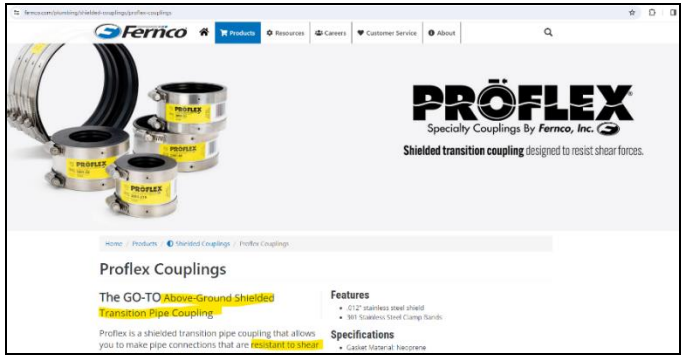
P3005.2.1 Gravity horizontal drains and building drains.

P3005.2.2 Gravity building sewers.

OSFM

2024 NC Plumbing Code Updates – Common Interpretation Requests

P3003.13 (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.



ASTM C1173-22

Standard Specification for Flexible Transition Couplings for Underground Piping Systems

Abstract

This specification describes the properties of devices or assemblies suitable for use as flexible transition couplings for underground drainage and sewer piping systems. Couplings that may include bushings or inserts, and meet the requirements of this specification are suitable for joining plain end pipe or fittings. Couplings shall be permitted to have a center stop, the components shall be designed so that the elastomeric material is compressed to form a hydrostatic seal when the joint is assembled. Assemblies shall be tested in different areas and each component shall conform to specified physical and mechanical requirements, namely: hardness, tensile strength, elongation, heat aging, hardness, ozone resistance, water absorption, and chemical resistance for the elastomeric materials; tension band performance, torque resistance, free running torque for the stainless steel materials; and deflection sealing resistance, and shear loading resistance for the joint assemblies.

Scope

1.1 This specification describes the properties of devices or assemblies suitable for use as flexible transition couplings, hereinafter referred to as "couplings," for underground drainage and sewer piping systems.

ASTM C1460-21

Standard Specification for Shielded Transition Couplings for Use with Dissimilar DWV Pipe and Fittings Above Ground

Abstract

This specification deals with the performance of shielded transition couplings to join dissimilar DWV pipe and fittings above ground. All steel parts made from round stock shall be 300 series stainless steel. The elastomeric gasket shall consist of one piece and shall have an inside center stop-ring spaced equal distance from the ends. The clamp assembly shall be tested to withstand the stated installation torque. The following shall also be done: deflection test, shear test, and unrestrained hydrostatic joint test.

Scope

1.1 This specification covers the performance of shielded transition couplings to join dissimilar DWV pipe and fittings above ground up to and including 15-in. pipe and fittings. This standard is intended to cover reducing couplings used to join pipes and fittings of different sizes, materials, and different outside diameters.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 The committee with jurisdiction over this standard is not aware of any comparable standards published by other organizations.

1.4 The following precaution comment pertains only to the test method portion, Section 7, of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International*

ASTM C1461-21

Standard Specification for Mechanical Couplings Using Thermoplastic Elastomeric (TPE) Gaskets for Joining Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems for Above and Below Ground Use

Abstract

This specification covers the performance of shielded transition couplings using flexible PVC gaskets to join dissimilar DWV pipe and fittings above and below ground. The gaskets shall be permitted to be spliced or molded. The elastomeric gasket shall be free from imperfections and porosity that affects its use and serviceability. Clamps assembly screws or bolts shall not have screw-driver slots. Each coupling shall undergo deflection test, shear test, and unrestrained hydrostatic joint test.

Scope

1.1 This specification describes the properties of devices or assemblies suitable for use as mechanical couplings using thermoplastic elastomeric (TPE) gaskets, hereinafter referred to as couplings, for joining drain, waste, and vent (DWV), sewer, sanitary, and storm plumbing systems for above and below ground use.

1.2 The pipe to be joined shall be of similar or dissimilar materials or size, or both.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 The ASTM standards referenced herein shall be considered mandatory.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

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3004-320	3" Cast Iron	2" Cast Iron, Plastic or Steel	C-320
3004-420	4" Cast Iron	2" Cast Iron, Plastic or Steel	C-420
3004-430	4" Cast Iron	3" Cast Iron	C-430
3004-540	5" Cast Iron	4" Cast Iron	C-540

3005 Series - Plastic, Steel or Extra-Heavy Cast Iron to Plastic, Steel or Extra-Heavy Cast Iron

Part No.	Pipe Size and Material (A)	Pipe Size and Material (B)	Mission Equivalent
3005-33	3" Plastic, Steel or Extra-Heavy Cast Iron	3" Plastic, Steel or Extra-Heavy Cast Iron	P-300
3005-43	4" Plastic, Steel or Extra-Heavy Cast Iron	3" Plastic, Steel or Extra-Heavy Cast Iron	P-430
3005-44	4" Plastic, Steel or Extra-Heavy Cast Iron	4" Plastic, Steel or Extra-Heavy Cast Iron	P-400
3005-66	6" Plastic, Steel or Extra-Heavy Cast Iron	6" Plastic, Steel or Extra-Heavy Cast Iron	P-600

2024 NC Plumbing Code Updates – Common Interpretation Requests

TABLE P3005.4.1
MAXIMUM FIXTURE UNITS ALLOWED TO BE CONNECTED TO BRANCHES AND STACKS[d, e]

NOMINAL PIPE SIZE (inches)	ANY HORIZONTAL FIXTURE BRANCH	ANY ONE VERTICAL STACK OR DRAIN
1 1/4 [a, b]	—	—
1 1/2 [b]	3	4
2 [b]	6	10
2 1/2 [b]	12	20
3 [f]	20[c]	48
4	160	240

For SI: 1 inch = 25.4 mm.

a. 1 1/4-inch pipe size limited to a single-fixture drain. See Table P3201.7.

b. Water closets prohibited.

c. No more than four water closets.

d. 50 percent less for circuit-vented fixture branches.

e. Minimum of 2-inch diameter underground.

f. The minimum size of any branches serving a water closet shall be 3 inches.

TABLE P3005.4.2
MAXIMUM NUMBER OF FIXTURE UNITS ALLOWED TO BE CONNECTED TO THE BUILDING DRAIN, BUILDING DRAIN BRANCHES OR THE BUILDING SEWER[c, e]

DIAMETER OF PIPE (inches)	SLOPE PER FOOT		
	1/8 inch	1/4 inch	1/2 inch
1 1/2 [a, b]	—	Note a	Note a
2 [b]	—	21	27
2 1/2 [b]	—	24	31
3 [d]	36	42	50
4	180	216	250

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

a. 1 1/2-inch pipe size limited to a building drain branch serving not more than two waste fixtures, or not more than one waste fixture if serving a pumped discharge fixture or food waste disposer discharge.

b. No water closets.

c. No building sewer shall be less than 4 inches in size.

d. No more than four water closets.

e. Minimum of 2-inch diameter underground.

OSFM

2024 NC Plumbing Code Updates – Common Interpretation Requests

406.2 Waste connection. The waste from an automatic clothes washer shall connect to a vertical drain of not less than 2 inches (51 mm) in diameter, or a horizontal drain of not less than 3 inches (76 mm) in diameter. The 2-inch (51 mm) trap in the waste connection may be used as a cleanout for both the 2-inch (51 mm) and the 3-inch (76 mm). In retrofit or remodel work automatic domestic clothes washers shall be permitted to drain to a laundry sink. Automatic clothes washers that discharge by gravity shall be permitted to drain to a waste receptor or an *approved* trench drain.

FIXTURE DRAIN. The drain from the trap of a fixture to a junction with any other drain pipe.

TRAP ARM. That portion of a *fixture drain* between a trap weir and the vent fitting.

P2706.1.2 (802.4.3) Standpipes. Standpipes shall be individually trapped. *Access* shall be provided to standpipes and drains for rodding. Standpipes shall be not less than 2 inches (51 mm) in diameter and not less than 18 inches (762 mm) or more than 48 inches (1219 mm) in height as Measured from the crown weir. The standpipe shall extend 34 inches (864 mm) minimum above the base of the clothes washer unless recommended otherwise by the manufacturer. The connection of a laundry tray waste line may be made into a standpipe for the automatic clothes-washer drain. The standpipe shall extend above the flood level rim of the laundry tray. The outlet of the laundry tray shall be a maximum horizontal distance of 30 inches (762 mm) from the standpipe trap.

TABLE 909.1
MAXIMUM DISTANCE OF FIXTURE TRAP FROM VENT

SIZE OF TRAP (inches)	SLOPE (inch per foot)	DISTANCE FROM TRAP (feet)
$1^1/_4$	$^1/_4$	5
$1^1/_2$	$^1/_4$	6
2	$^1/_4$	8
3	$^1/_8$	12
4	$^1/_8$	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 inch per foot = 83.3 mm/m.

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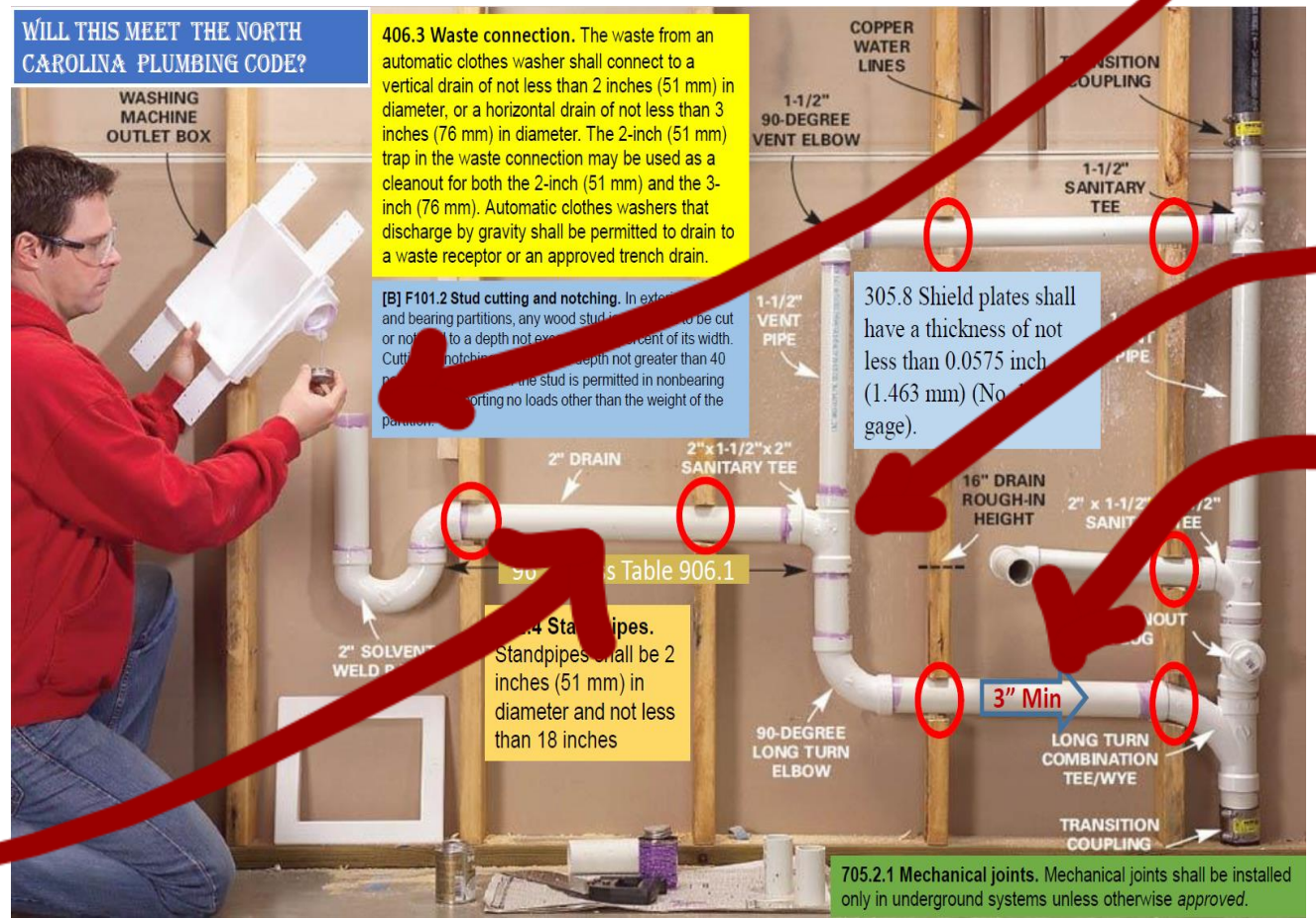
2024 NC Plumbing Code Updates – Common Interpretation Requests

Standpipe:
2″ diameter minimum
18″ length minimum
48″ length maximum

Vertical drain:
2″ diameter minimum

Horizontal drain:
3″ diameter minimum

Fixture Drain and Trap Arm:
2″ diameter minimum
8′ length maximum



This image is from the NCPIA Plumbing Code in Review workshop being instructed by Jimmy Lawson.

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OFFICE OF STATE FIRE MARSHAL
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...questions?

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