



**CONTRACTORS[®]
INSTITUTE** Chapter 2 Definitions

- **BEDROOM.** A room that can be used for sleeping and that:
 - a. For site-built dwellings has a minimum of 70 square feet (6.50 m²) of conditioned space;
 - b. For manufactured homes is constructed according to the standards of the United States Department of Housing and Urban Development and has a minimum of 50 square feet (4.65 m²) of floor area;
 - c. Is located along an exterior wall;
 - d. Has a closet and a door or an entrance where a door could be reasonably installed; and
 - e. Has an emergency means of escape and rescue opening to the outside in accordance with the *Florida Building Code*.
- This definition is specific to on-site sewage treatment system as regulated by Chapter 64E-6 Florida Administrative Code for Onsite Sewage Treatment and Disposal Systems. See Section 701.2.

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Florida Building Code, Plumbing 5th Edition
(2014) Advanced Code Overview of Changes

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**CONTRACTORS[®]
INSTITUTE** Chapter 2 Definitions

- **COMBINATION WASTE AND VENT SYSTEM.**
 - A specially designed system of waste piping embodying the horizontal wet venting of one or more sinks, lavatories, drinking fountains or floor drains by means of a common waste and vent pipe adequately sized to provide free movement of air above the flow line of the drain.

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**CONTRACTORS[®]
INSTITUTE** Objectives

- Upon completion of this course, you should be able to:
 - Identify key provisions that have been updated from the 2010 Florida Building Code, Plumbing.
 - Recognize key terminology that has been removed, added, or revised.
 - Understand significant changes and modifications that have the greatest impact with respect to residential construction.
 - Apply existing provisions and incorporate recent modifications to ensure code compliance.

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**CONTRACTORS[®]
INSTITUTE** Chapter 2 Definitions

- **DESIGN FLOOD ELEVATION.**
 - The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard map. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building's* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

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Chapter 2 Definitions

- **GRAY WATER.**
 - As defined by Sections 381.0065(2)(b) and (d) *Florida Statutes*, "Graywater" means that part of domestic sewage that is not blackwater, including waste from the bath, lavatory, laundry, and sink, except kitchen sink waste. "Blackwater" means that part of domestic sewage carried off by toilets, urinals, and kitchen drains.

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Chapter 2 Definitions

- **PLUMBING APPLIANCE.**
 - Water-connected or drain-connected devices intended to perform a special function. These devices have their operation or control dependent on one or more energized components, such as motors, controls, or heating elements. Such devices are manually adjusted or controlled by the owner or operator, or are operated automatically through one or more of the following actions: a time cycle, a temperature range, a pressure range, a measured volume or weight.

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Chapter 2 Definitions

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

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Chapter 2 Definitions

- **PLUMBING FIXTURE.**
 - A receptacle or device that is connected to a water supply system or discharges to a drainage system or both. Such receptacles or devices require a supply of water; or discharge liquid waste or liquid-borne solid waste; or require a supply of water and discharge waste to a drainage system.

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Chapter 2 Definitions

- **INDIVIDUAL SEWAGE DISPOSAL SYSTEM.**
 - An approved onsite sewage treatment and disposal system in accordance with Sections 381.0065 and 381.00655, *Florida Statutes* and Chapter 64E-6, *Florida Administrative Code*, Standards for Onsite Sewage Treatment and Disposal Systems. Synonymous with private sewage disposal system and private septic system.

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Chapter 2 Definitions

- **REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY.**
 - A backflow prevention device consisting of two independently acting check valves, internally force-loaded to a normally closed position and separated by an intermediate chamber (or zone) in which there is an automatic relief means of venting to the atmosphere, internally loaded to a normally open position between two tightly closing shutoff valves and with a means for testing for tightness of the checks and opening of the relief means.

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CONTRACTORS*
INSTITUTE Chapter 3 General Regulations

- **301.3 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 systems required by Chapter 8.
 - **Exception:** Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved gray water system for flushing of water closets and urinals in accordance with Chapter 13. Any sewage that discharges from the building must be connected to the sanitary drainage system of the building or premises and discharge to a sewage system in accordance with Chapter 7.

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CONTRACTORS*
INSTITUTE Chapter 3 General Regulations

- **305.1.1 Penetration.**
 - Protective sleeves around piping penetrating concrete slab-on-grade floors shall not be of cellulose-containing materials. If soil treatment is used for subterranean termite protection, the sleeve shall have a maximum wall thickness of 0.010 inch (0.25 mm), and be sealed within the slab using a noncorrosive clamping device to eliminate the annular space between the pipe and the sleeve. No termiticides shall be applied inside the sleeve.

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CONTRACTORS*
INSTITUTE Chapter 3 General Regulations

- **303.1 Identification.**
 - Each length of pipe and each pipe fitting, trap, fixture, material and device utilized in a plumbing system shall bear the identification of the manufacturer and any markings required by the applicable referenced standards.

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CONTRACTORS*
INSTITUTE Chapter 3 General Regulations

- **305.4.1 Sewer depth.**
 - Building sewers that connect to private sewage disposal systems shall be installed not less than [NUMBER] inches (mm) below finished grade at the point of septic tank connection. Building sewers shall be installed not less than [NUMBER] inches (mm) below grade.

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CONTRACTORS*
INSTITUTE Chapter 3 General Regulations

- **305.1 Corrosion.**
 - Pipes passing through concrete or cinder walls and floors or other corrosive material shall be protected against external corrosion by a protective sheathing or wrapping or other means that will withstand any reaction from the lime and acid of concrete, cinder or other corrosive material. Sheathing or wrapping shall allow for movement including expansion and contraction of piping. Minimum wall thickness of material shall be 0.010 inch (0.25 mm).
 - **Exception:** Sleeving is not required for installation of CPVC into concrete or similar material.

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CONTRACTORS*
INSTITUTE Chapter 3 General Regulations

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

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CONTRACTORS INSTITUTE Chapter 3 General Regulations

- 309.2 Flood hazard.
 - For structures located in flood hazard areas, the following systems and equipment shall be located and installed as required by Section 1612 of the *Florida Building Code, Building*.
 - Water service pipes.
 - Pump seals in individual water supply systems where the pump is located below the *design flood elevation*.
 - Covers on potable water wells shall be sealed, except where the top of the casing well or pipe sleeve is elevated to not less than 1 foot (305 mm) above the *design flood elevation*.
 - Sanitary drainage piping.
 - Storm drainage piping.
 - Manhole covers shall be sealed, except where elevated to or above the *design flood elevation*.
 - Other plumbing fixtures, faucets, fixture fittings, piping systems and equipment.
 - Water heaters.
 - Vents and vent systems.
 - Exception:** The systems listed in this section are permitted to be located below the elevation required by Section 1612 of the *Florida Building Code, Building* for utilities and attendant equipment provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding up to such elevation.

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CONTRACTORS INSTITUTE Chapter 4 Fixtures, Faucets And Fixture Fittings

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

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN ^b (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
		A-3 ¹	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 125	1 per 65	1 per 200	—	1 per 500	1 service sink
			Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 500	1 per 750	—	1 per 1,000	1 service sink
			Places of worship and other religious services.	1 per 150	1 per 150	1 per 75	1 per 200	—	1 per 1,000	1 service sink ^{2,2}

CONTRACTORS INSTITUTE Chapter 3 General Regulations

- 316.1 Alternative engineered design.
 - The design, documentation, inspection, testing and approval of an *alternative engineered design* plumbing system shall comply with Sections 316.1.1 through 316.1.6.
- 316.1.1 Design criteria.
 - An *alternative engineered design* shall conform to the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, fire resistance, durability and safety. Material, equipment or components shall be designed and installed in accordance with the manufacturer's instructions.

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CONTRACTORS INSTITUTE Chapter 4 Fixtures, Faucets And Fixture Fittings

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

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN ^b (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
1 (cont.)	Assembly	A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	—	1 per 1,000	1 service sink

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CONTRACTORS INSTITUTE Chapter 4 Fixtures, Faucets And Fixture Fittings

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NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN ^b (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	A-1 ²	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200	—	—	1 per 500	1 service sink
		A-2 ²	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75	—	—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200	—	—	1 per 500	1 service sink

CONTRACTORS INSTITUTE Chapter 4 Fixtures, Faucets And Fixture Fittings

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

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN ^b (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
2	Business	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 40 for the first 80 and 1 per 60 for the remainder exceeding 80	1 per 200	1 per 150	—	1 per 100	1 service sink ^a
3	Educational	E	Educational facilities	1 per 50	1 per 50	1 per 50	1 per 50	—	1 per 100	1 service sink
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work, fabricating, assembly or processing of products or materials	1 per 100	1 per 100	1 per 100	1 per 100	(see Section 411)	1 per 400	1 service sink

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URNALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN* (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
5	Institutional	I-1	Residential care	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		I-2	Hospitals, ambulatory nursing home care recipient	1 per room ²		1 per room ²		1 per 15	1 per 100	1 service sink per floor
			Employees, other than residential care ³	1 per 25		1 per 35		—	1 per 100	—
			Visitors, other than residential care	1 per 75		1 per 100		—	1 per 500	—
		I-3	Prisons ⁴	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URNALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN* (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		R-3	Congregate living facilities with 15 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-3	One- and two-family dwellings	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URNALS SEE SECTION 419.2)		LAVATORIES	BATHTUBS / SHOWERS	DRINKING FOUNTAIN* (SEE SECTION 410.1)	OTHER
				MALE	FEMALE				
			Reformatories, detention centers, and correctional centers ¹	1 per 15		1 per 15	1 per 15	1 per 100	1 service sink
			Employees ²	1 per 25		1 per 35	—	1 per 100	—
		I-4	Adult day care and child day care	1 per 15		1 per 15	1	1 per 100	1 service sink

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URNALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAIN* (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
		R-4	Congregate living facilities with 15 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage	S-1 S-2	Structures for the storage of goods, warehouses, storehouses, and freight depots. Low and Moderate Hazard.	1 per 100		1 per 100		See Section 411	1 per 1,000	1 service sink

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URNALS SEE SECTION 419.2)		LAVATORIES	BATHTUBS / SHOWERS	DRINKING FOUNTAIN* (SEE SECTION 410.1)	OTHER
				MALE	FEMALE				
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750	—	1 per 1,000	1 service sink ²
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit	1 per sleeping unit	—	1 service sink
		R-2	Dormitories, fraternities, societies and boarding houses (not transient)	1 per 10		1 per 10	1 per 8	1 per 100	1 service sink

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

- Table 403.1
 - 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 Florida Building Code, Building.
 - b. Toilet facilities for employees shall be separate from facilities for inmates 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 where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
 - d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
 - e. The minimum number of required drinking fountains shall comply with Table 403.1 and the Florida Building Code, Accessibility.
 - f. Drinking fountains are not required for an occupant load of 15 or fewer.
 - g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.

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CONTRACTORS* Chapter 4 Fixtures, Faucets And
INSTITUTE Fixture Fittings

- **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 structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
 - 3. Separate facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.

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CONTRACTORS* Chapter 6 Water Supply And
INSTITUTE Distribution

- **605.2 Lead content of water supply pipe and fittings.**
 - Pipe and pipe fittings, including valves and faucets, utilized in the water supply system shall have a maximum of 8-percent lead content.
- **605.2.1 Lead content of drinking water pipe and fittings.**
 - Pipe, pipe fittings, joints, valves, faucets, and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372 and shall have a weighted average lead content of 0.25-percent lead or less.

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CONTRACTORS* Chapter 5 Water Heaters
INSTITUTE

- **504.4 Relief valve.**
 - Storage water heaters operating above atmospheric pressure shall be provided with an *approved*, self-closing (levered) pressure relief valve and temperature relief valve or combination thereof. The relief valve shall conform to ANSI Z21.22. The relief valve shall not be used as a means of controlling thermal expansion.
- **504.4.1 Installation.**
 - Such valves shall be installed in the shell of the water heater tank. Temperature relief valves shall be so located in the tank as to be actuated by the water in the top 6 inches (152 mm) of the tank served. For installations with separate storage tanks, the *approved*, self-closing (levered) pressure relief valve and temperature relief valve or combination thereof conforming to ANSI Z21.22 valves shall be installed on both the storage water heater and storage tank. There shall not be a check valve or shutoff valve between a relief valve and the heater or tank served.

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CONTRACTORS* Chapter 6 Water Supply And
INSTITUTE Distribution

- **607.2 Hot or tempered water supply to fixtures.**
 - The developed length of hot or tempered water piping, from the source of hot water to the fixtures that require hot or tempered water, shall not exceed 50 feet (15 240 mm). Recirculating system piping and heat-traced piping shall be considered to be sources of hot or tempered water.
 - **607.2.1 Hot water system controls.**
 - Automatic circulating hot water system pumps or heat trace shall be arranged to be conveniently turned off, automatically or manually, when the hot water system is not in operation.
 - **607.2.2 Recirculating pump.**
 - Where a thermostatic mixing valve is used in a system with a hot water recirculating pump, the *hot water or tempered water* return line shall be routed to the cold water inlet pipe of the water heater and the cold water inlet pipe or the hot water return connection of the thermostatic mixing valve.

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CONTRACTORS* Chapter 5 Water Heaters
INSTITUTE

- **504.7 Required pan.**
 - Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a galvanized steel pan having a material thickness of not less than 0.0236 inch (0.6010mm) (No. 24 gage), or other pans approved for such use.

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CONTRACTORS* Chapter 6 Water Supply And
INSTITUTE Distribution

- **608.8 Identification of nonpotable water.**
 - Where nonpotable water systems are installed, the piping conveying the nonpotable water shall be identified either by color marking or metal tags in accordance with Sections 608.8.1 through 608.8.3. All nonpotable water outlets such as hose connections, open ended pipes, and faucets shall be identified at the point of use for each outlet with the words, "Nonpotable—not safe for drinking." The words shall be indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches (12.7 mm) in height and in colors in contrast to the background on which they are applied.

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Chapter 7 Sanitary Drainage

- **704.3 Connections to offsets and bases of stacks.**
 - Horizontal branches shall connect to the bases of stacks at a point located not less than 10 times the diameter of the drainage *stack* downstream from the *stack*. Horizontal branches shall connect to horizontal *stack* offsets at a point located not less than 10 times the diameter of the drainage *stack* downstream from the upper *stack*.

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INSTITUTE

Chapter 7 Sanitary Drainage

- **708.3.3 Changes of direction.**
 - Cleanouts shall be installed at each change of direction greater than 45 degrees (0.79 rad) in the *building sewer*, *building drain* and horizontal waste or soil lines. Where more than one change of direction occurs in a run of piping, only one cleanout shall be required for each 40 feet (12 192 mm) of *developed length* of the drainage piping.
- **708.3.4 Base of stack.**
 - A cleanout shall be provided at the base of each waste or soil *stack*.
- **708.3.5 Building drain and building sewer junction.**
 - There shall be a cleanout near the junction of the *building drain* and the *building sewer*. The cleanout shall be either inside or outside the building wall and shall be brought up to the finished ground level or to the basement floor level. An *approved* two-way cleanout is allowed to be used at this location to serve as a required cleanout for both the *building drain* and *building sewer*. The cleanout at the junction of the *building drain* and *building sewer* shall not be required if the cleanout on a 3-inch (76 mm) or larger diameter soil *stack* is located within a *developed length* of 10 feet (3048 mm) of the *building drain* and *building sewer* connection. The minimum size of the cleanout at the junction of the *building drain* and *building sewer* shall comply with Section 708.7.
- **708.3.6 Manholes.**
 - Manholes serving a *building drain* shall have secured gas-tight covers and shall be located in accordance with Section 708.3.2.

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INSTITUTE

Chapter 7 Sanitary Drainage

- **706.1 Connections and changes in direction.**
 - All connections and changes in direction of the sanitary drainage system shall be made with *approved* drainage fittings. Connections between drainage piping and fixtures shall conform to Section 405.
- **706.2 Obstructions.**
 - The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type. 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.

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INSTITUTE

Chapter 7 Sanitary Drainage

- **711.2 Horizontal stack offsets.**
 - A stack with a horizontal offset located more than four branch intervals below the top of the stack shall be vented in accordance with Section 907 and sized as follows:
 - 1. The portion of the stack above the offset shall be sized as for a vertical stack based on the total number of drainage fixture units above the offset.
 - 2. The offset shall be sized in accordance with Section 710.1.1.
 - 3. The portion of the stack below the offset shall be sized as for the offset or based on the total number of drainage fixture units on the entire stack, whichever is larger [see Table 710.1(2), Column 5].
 - **711.2.1 Omission of vents for horizontal stack offsets.**
 - Vents for horizontal stack offsets required by Section 711.2 shall not be required where the stack and its offset are one pipe size larger than required for a building drain [see Table 710.1(1)] and the entire stack and offset are not less in cross-sectional area than that required for a straight stack plus the area of an offset vent as provided for in Section 907.

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INSTITUTE

Chapter 7 Sanitary Drainage

- **708.3 Where required.** Cleanouts shall be located in accordance with Sections 708.3.1 through 708.3.6.
 - **708.3.1 Horizontal drains within buildings.**
 - All horizontal drains shall be provided with cleanouts located not more than 100 feet (30 480 mm) apart.
 - **708.3.2 Building sewers.**
 - Building sewers shall be provided with cleanouts located not more than 100 feet (30 480 mm) apart measured from the upstream entrance of the cleanout. For building sewers 8 inches (203 mm) and larger, manholes shall be provided and located not more than 200 feet (60 960 mm) from the junction of the *building drain* and *building sewer*; at each change in direction and at intervals of not more than 400 feet (122 m) apart. Manholes and manhole covers shall be of an *approved* type.

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INSTITUTE

Chapter 7 Sanitary Drainage

- **715.1 Sewage backflow.**
 - Where plumbing fixtures are installed on a floor with a finished floor elevation below the elevation of the manhole cover of the next upstream manhole in the *public sewer*, such fixtures shall be protected by a backwater valve installed in the *building drain*, or horizontal *branch* serving such fixtures. Plumbing fixtures installed on a floor with a finished floor elevation above the elevation of the manhole cover of the next upstream manhole in the *public sewer* shall not discharge through a backwater valve.

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CONTRACTORS* Chapter 8 Indirect / Special Waste
INSTITUTE

- **802.1 Where required.**
 - Food-handling equipment and clear-water waste shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.8. All health-care related fixtures, devices and equipment shall discharge to the drainage system through an indirect waste pipe by means of an *air gap* in accordance with this chapter and Section 713.3. Fixtures not required by this section to be indirectly connected shall be directly connected to the plumbing system in accordance with Chapter 7.
- **802.1.8 Food utensils, dishes, pots and pans sinks.**
 - Sinks used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or service ware used in the preparation, serving or eating of food shall discharge indirectly through an *air gap* or an *air break* to the drainage system.

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CONTRACTORS* Chapter 9 Vents
INSTITUTE

- **903.1 Roof extension.**
 - Open vent pipes that extend through a roof shall be terminated not less than [NUMBER] inches (mm) above the roof, except that where a roof is to be used for any purpose other than weather protection, the vent extensions shall terminate not less than 7 feet (2134 mm) above the roof.

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CONTRACTORS* Chapter 8 Indirect / Special Waste
INSTITUTE

- **802.2 Installation.**
 - Indirect waste piping shall discharge through an *air gap* or *air break* into a waste receptor. Waste receptors and standpipes shall be trapped and vented and shall connect to the building drainage system. All indirect waste piping that exceeds 30 inches (762 mm) in developed length measured horizontally, or 54 inches (1372 mm) in total developed length, shall be trapped.

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CONTRACTORS* Chapter 9 Vents
INSTITUTE

- **915.2 Installation.**
 - The only vertical pipe of a combination waste and vent system shall be the connection between the fixture drain and the horizontal combination waste and vent pipe. The vertical distance shall not exceed 8 feet (2438 mm).
 - **915.2.1 Slope.**
 - The slope of a horizontal combination waste and vent pipe shall not exceed one-half unit vertical in 12 units horizontal (4-percent slope) and shall not be less than that indicated in Table 704.1.
 - **915.2.2 Size and length.**
 - The size of a combination waste and vent pipe shall not be less than that indicated in Table 915.2.2. The horizontal length of a combination waste and vent pipe shall be unlimited.

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- **802.3 Waste receptors.**
 - Waste receptors shall be of an approved type. A removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall be installed in ventilated spaces. Waste receptors shall not be installed in bathrooms, toilet rooms, plenums, crawl spaces, attics, interstitial spaces above ceilings and below floors or in any inaccessible or unventilated space such as a closet or storeroom. Ready access shall be provided to waste receptors.

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CONTRACTORS* Chapter 9 Vents
INSTITUTE

- **915.2.3 Connection.**
 - The combination waste and vent system shall be provided with a dry vent connected at any point within the system or the system shall connect to a horizontal drain that is vented in accordance with one of the venting methods specified in this chapter. Combination waste and vent systems connecting to building drains receiving only the discharge from a stack or stacks shall be provided with a dry vent. The vent connection to the combination waste and vent pipe shall extend vertically to a point not less than 6 inches (152 mm) above the flood level rim of the highest fixture being vented before offsetting horizontally.

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Chapter 9 Vents

- **SECTION 917 SINGLE STACK VENT SYSTEM**
 - **917.1 Where permitted.**
 - A drainage *stack* shall serve as a single stack vent system where sized and installed in accordance with Sections 917.2 through 917.9. The drainage *stack* and *branch* piping shall be the vents for the drainage system. The drainage *stack* shall have a stack vent.
 - **917.2 Stack size.**
 - Drainage *stacks* shall be sized in accordance with Table 917.2. *Stacks* shall be uniformly sized based on the total connected *drainage fixture unit* load. The stack vent shall be the same size as the drainage *stack*. A 3-inch (76 mm) *stack* shall serve not more than two water closets.

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Chapter 10 Traps, Interceptors
And Separators

- **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).
 - 4. Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.

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Chapter 9 Vents

- **918.8 Prohibited installations.**
 - Air admittance valves shall not be installed in non-neutralized 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 F 1412. Air admittance valves shall not be located in spaces utilized as supply or return air plenums. Air admittance valves without an engineered design shall not be utilized to vent sumps or tanks of any type.

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Chapter 10 Traps, Interceptors
And Separators

- **1003.1 Where required.**
 - Interceptors and separators shall be provided to prevent the discharge of oil, grease, sand and other substances harmful or hazardous to the public sewer, the private sewage system or the sewage treatment plant or processes.

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Chapter 10 Traps, Interceptors
And Separators

- **1002.1 Fixture traps.**
 - Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.4. A fixture shall not be double trapped.
 - Exceptions:
 - 1. This section shall not apply to fixtures with integral traps.
 - 2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.

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Chapter 10 Traps, Interceptors
And Separators

- **1003.3.4 Hydromechanical grease interceptors and automatic grease removal devices.**
 - *Hydromechanical grease interceptors* and automatic grease removal devices shall be sized in accordance with ASME A112.14.3 Appendix A, ASME 112.14.4, CSA B481.3 or PDI G101. Hydromechanical grease interceptors and automatic grease removal devices shall be designed and tested in accordance with ASME A112.14.3 Appendix A, ASME 112.14.4, CSA B481.1, PDI G101 or PDI G102. Hydromechanical grease interceptors and automatic grease removal devices shall be installed in accordance with the manufacturer's instructions. Where manufacturer's instructions are not provided, hydromechanical grease interceptors and grease removal devices shall be installed in compliance with ASME A112.14.3, ASME 112.14.4, CSA B481.3 or PDI G101.

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Chapter 10 Traps, Interceptors
And Separators

- **1003.5 Grease interceptors for onsite sewage treatment and disposal systems.**
 - Grease interceptors are not required for a residence. However, one or more grease interceptors are required where grease waste is produced in quantities that could otherwise cause line stoppage or hinder sewage disposal. Where a grease interceptor is required or used, only kitchen wastewater shall first pass through the interceptor and then be discharged into the first compartment of a septic tank or other approved system. Grease interceptors shall be water tight. Each interceptor shall be engineered to withstand the load, such as from vehicular traffic, to be placed on the interceptor. Grease interceptors shall be sized, constructed and approved in accordance with Rule 64E-6, *Florida Administrative Code*.

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Chapter 11 Storm Drainage

- **1106.5 Parapet wall scupper location.**
 - Parapet wall roof drainage scupper and overflow scupper location shall comply with the requirements of Section 1503.4 of the *Florida Building Code, Building*.

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Chapter 11 Storm Drainage

- **1102.6 Roof drains.**
 - Roof drains shall conform to ASME A112.6.4 or ASME A112.3.1.
- **1102.7 Fittings.**
 - Pipe fittings shall be *approved* for installation with the piping material installed, and shall conform to the respective pipe standards or one of the standards listed in Table 1102.7. The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type.

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Chapter 11 Storm Drainage

- **1108.1 Secondary (emergency overflow) drains or scuppers.**
 - Where roof drains are required, secondary (emergency overflow) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.

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Chapter 11 Storm Drainage

- **SECTION 1105 ROOF DRAINS**
 - **1105.1 General.**
 - Roof drains shall be installed in accordance with the manufacturer's instructions. The inside opening for the roof drain shall not be obstructed by the roofing membrane material.

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Chapter 13 Gray Water Recycling Systems

- Appendix C: Gray water recycling systems is now Chapter 13: Gray water recycling systems

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Objectives

- Now that you have completed this course, you should be able to:
 - Identify key provisions that have been updated from the 2010 Florida Building Code, Plumbing.
 - Recognize key terminology that has been removed, added, or revised.
 - Understand significant changes and modifications that have the greatest impact with respect to residential construction.
 - Apply existing provisions and incorporate recent modifications to ensure code compliance.


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