

CHAPTER 25
STATE PLUMBING CODE

[Prior to 7/29/87, see Health Department[470] Ch 25]

641—25.1(105) Adoption. Section 101 and Chapters 2 to 17 of the Uniform Plumbing Code, 2012 Edition, as published by the International Association of Plumbing and Mechanical Officials, 4755 E. Philadelphia Street, Ontario, California 91761-2816, are hereby adopted by reference with amendments as the state plumbing code authorized by Iowa Code section 105.4 as amended by 2013 Iowa Acts, Senate File 427, section 5. Portions of this chapter reproduce excerpts from the 2012 International Plumbing Code, International Code Council, Inc., Washington, D.C. Such excerpts are reproduced with permission, all rights reserved.

[ARC 8860B, IAB 6/16/10, effective 7/21/10; ARC 1089C, IAB 10/16/13, effective 11/20/13]

641—25.2(105) Applicability. The provisions of this code are applicable to the plumbing in buildings or on premises in Iowa.

[ARC 8860B, IAB 6/16/10, effective 7/21/10]

641—25.3(105) Fuel gas piping. Fuel gas piping shall comply with the requirements of Chapter 12 of the Uniform Plumbing Code, 2012 Edition, unless the provisions conflict with 661—Chapter 226, Liquefied Petroleum Gas, Iowa Administrative Code. Where Chapter 12 conflicts with 661—Chapter 226, the provisions of 661—Chapter 226 shall be followed.

[ARC 8860B, IAB 6/16/10, effective 7/21/10; ARC 1089C, IAB 10/16/13, effective 11/20/13]

641—25.4(105) Amendments to Uniform Plumbing Code. The Uniform Plumbing Code (UPC), as adopted by reference in rule 641—25.1(105), shall be amended as follows:

25.4(1) The following amendment shall apply to UPC Chapter 1:

Subsection 101.11.5 Moved Buildings. Modify the subsection by deleting “except as provided for in Section 103.5.8.2” from the last sentence in the subsection.

25.4(2) The following amendment shall apply to UPC Chapter 3:

Subsection 301.4.1 Permit Application. Delete the subsection.

25.4(3) The following amendments shall apply to UPC Chapter 4:

a. Subsection 421.1 General. Modify the subsection by deleting “Table 1401.1 of this code” and inserting the following in lieu thereof: “Chapter 11 of the 2012 International Building Code.”

b. Section 422.1 Fixture Count. Modify the section by deleting the first paragraph and inserting the following in lieu thereof: “Plumbing fixtures shall be provided in each building, for the type of building occupancy, and in the minimum number shown in Table 422.1. The design occupant load and occupancy classification shall be determined in accordance with Section 1004 of the 2012 International Building Code. Required public facilities shall be designated by a legible sign for each sex. Signs shall be readily visible and located near the entrance to each toilet facility.”

c. Subsection 422.1.1 Family or Assisted-Use Toilet and Bathing Facilities. Modify the subsection by adding the following sentence to the end of the subsection: “Required family or assisted-use fixtures are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.”

d. Table 422.1 Minimum Plumbing Facilities. Delete the table and insert the following table in lieu thereof:

TABLE 422.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
 (Reprinted, with permission,* from the 2012 International Plumbing Code, IPC Table 403.1)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (Urinals, see Sections 411.0 and 412.0)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN ^{e, f} (See Section 415.0)	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	A-1 ^d	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 ^d	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
		A-3 ^d	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	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 750		—	1 per 1,000	1 service sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150		—	1 per 1,000

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				MALE	FEMALE	MALE	FEMALE			
1	Assembly (cont'd)	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 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
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 80 for the remainder exceeding 80		—	1 per 100	1 service sink ^g
3	Educational	E	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
4	Factory and Industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		(See Section 416)	1 per 400	1 service sink
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 recipient	1 per room ^c		1 per room ^c		1 per 15	1 per 100	1 service sink per floor
			Employees, other than residential care ^b	1 per 25		1 per 35		—	1 per 100	—
			Visitors, other than residential care	1 per 75		1 per 100		—	1 per 500	—

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				MALE	FEMALE	MALE	FEMALE			
5	Institutional (cont'd)	I-3	Prisons ^b	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
			Reformatories, detention centers, and correctional centers ^b	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
			Employees ^b	1 per 25		1 per 35		—	1 per 100	—
		I-4	Adult day care and child care	1 per 15		1 per 15		1	1 per 100	1 service sink
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink ^g
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, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units

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				MALE	FEMALE	MALE	FEMALE			
7	Residential (cont'd)	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
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-4	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage	S-1 and S-2	Structures for the storage of goods, warehouses, storehouses and freight depots. Low and Moderate Hazard.	1 per 100		1 per 100		See Section 416	1 per 1,000	1 service sink

- a The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the International Building Code.
- b Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
- c A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
- d The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
- e The minimum number of required drinking fountains shall comply with Table 403.1 and Chapter 11 of the International Building Code.
- 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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e. Insert the following text at the end of Chapter 4, reprinted with permission from the 2012 International Plumbing Code:

“422.6 Pay Facilities. Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge. (Reprinted from IPC 403.3.5)

“422.7 Substitution for Water Closets. In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets in assembly and educational occupancies. Urinals shall not be substituted for more than 50 percent of the required water closets in all other occupancies. (Reprinted from IPC 419.2)”

25.4(4) The following amendment shall apply to UPC Chapter 5:

Sections 503.0 through 503.2 Inspection. Delete the sections.

25.4(5) The following amendment shall apply to UPC Chapter 7:

Section 710.1 Backflow Protection. Modify the section by adding the following sentences to the end of the section: “The requirement for the installation of a backwater valve shall apply only when determined necessary by the authority having jurisdiction based on local conditions. When a valve is required by the authority having jurisdiction, it shall be a manually operated gate valve or fullway ball valve. An automatic backwater valve may also be installed but is not required.”

25.4(6) The following amendment shall apply to UPC Chapter 8:

Section 804.7 Domestic Dishwashing Machine. Modify the section by deleting the section and inserting the following language in lieu thereof: “No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine, or by looping the discharge line of the dishwasher as high as possible near the flood level of the kitchen sink where the waste disposer is connected. Listed air gap fittings shall be installed with the flood level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.”

25.4(7) The following amendment shall apply to UPC Chapter 9:

Section 906.7 Frost or Snow Closure. Modify the section by deleting “two (2) inches (50.8 mm)” in the first sentence and inserting “three (3) inches (76.2 mm)” in lieu thereof.

25.4(8) The following amendment shall apply to UPC Chapter 10:

Table 1002.2 Horizontal Lengths of Trap Arms. Delete the table and insert the following table in lieu thereof:

TABLE 1002.2
Horizontal Lengths of Trap Arms
(Except for Water Closets and Similar Features)^{1,2}

Trap Arm Diameter (inches)	Distance Trap to Vent Minimum (inches)	Length Maximum (feet)
1¼	2½	5
1½	3	6
2	4	8
3	6	12
4	8	12
Exceeding 4	2 × Diameter	12

For SI units: 1 inch = 25.4 mm

Notes:

¹Maintain ¼ inch per foot slope (20.8 mm/m).

²The developed length between the trap of a water closet or similar fixture (measured from the top of the closet flange to the inner edge of the vent) and its vent shall not exceed 6 feet (1829 mm).

25.4(9) The following amendments shall apply to UPC Chapter 12:

- a. Sections 1203.0 through 1203.4 Inspection. Delete the sections.
- b. Sections 1204.0 through 1204.3 Certificate of Inspection. Delete the sections.
- c. Sections 1205.0 through 1205.2 Authority to Render Gas Service. Delete the sections.
- d. Sections 1207.0 and 1207.1 Temporary Use of Gas. Delete the sections.

25.4(10) The following amendments shall apply to UPC Chapter 13:

- a. Sections 1311.0 through 1311.4 Plan Review. Delete the sections.
- b. Section 1326.3 Advance Notice. Delete the section.
- c. Section 1326.4 Responsibility. Delete the section.
- d. Section 1326.5 Testing. Delete the section.
- e. Section 1326.6 Retesting. Modify the section by deleting “the Authority Having Jurisdiction finds that” and “or inspection” from the first sentence.
- f. Section 1327.4 Report Items. Modify the section by deleting “Authority Having Jurisdiction” and inserting “responsible facility authority” in lieu thereof.

25.4(11) The following amendment shall apply to UPC Chapter 15:

Sections 1506.0 through 1506.4 Required Inspection. Delete the sections.

25.4(12) The following amendments shall apply to UPC Chapter 16:

- a. Section 1601.3 Permit. Delete the section.
- b. Section 1601.6 Operation and Maintenance Manual. Modify the section by deleting “required to have a permit in accordance with Section 1601.3” from the first sentence.
- c. Section 1603.2 Permit. Delete the section.
- d. Subsection 1603.11.2.1 Visual System Inspection. Modify the subsection by deleting “by the Authority Having Jurisdiction and other authorities having jurisdiction” from the first sentence.
- e. Subsection 1603.11.2.2 Cross-Connection Test. Modify the subsection by deleting “by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction” from the first sentence.
- f. Subsection 1603.11.2.3 Discovery of Cross-Connection. Modify the subsection by deleting “in the presence of the Authority Having Jurisdiction.”
- g. Section 1604.2 Plumbing Plan Submission. Delete the section.
- h. Section 1604.5 Initial Cross-Connection Test. Modify the section by deleting “by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction,” and by deleting the final sentence (“The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.”).
- i. Subsection 1604.12.2.1 Visual System Inspection. Modify the subsection by deleting “by the Authority Having Jurisdiction and other authorities having jurisdiction.”

j. Subsection 1604.12.2.2 Cross-Connection Test. Modify the subsection by deleting “in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction.”

k. Subsection 1604.12.2.3 Discovery of Cross-Connection. Modify the subsection by deleting “in the presence of the Authority Having Jurisdiction.”

25.4(13) The following amendments shall apply to UPC Chapter 17:

a. Section 1702.2 Plumbing Plan Submission. Delete the section.

b. Section 1702.5 Initial Cross-Connection Test. Modify the section by deleting the second and third sentences (“Before the building is occupied or the system is activated, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.”).

c. Subsection 1702.11.2.1 Visual System Inspection. Modify the subsection by deleting “by the Authority Having Jurisdiction and other authorities having jurisdiction.”

d. Subsection 1702.11.2.2 Cross-Connection Test. Modify the subsection by deleting “by the applicant in the presence of the Authority Having Jurisdiction and other authorities having jurisdiction.”

e. Subsection 1702.11.2.3 Discovery of Cross-Connection. Modify the subsection by deleting “in the presence of the Authority Having Jurisdiction.”

[ARC 8860B, IAB 6/16/10, effective 7/21/10; ARC 1089C, IAB 10/16/13, effective 11/20/13]

641—25.5(105) Backflow prevention with containment. Cities with populations of 15,000 or greater as determined by the 1990 census or any subsequent regular or special census shall have a backflow prevention program with containment. The minimum requirements for a program are given in subrules 25.5(1) through 25.5(5). These requirements are in addition to the applicable requirements of Section 603 of the Uniform Plumbing Code, 2012 Edition.

25.5(1) Definitions. The following definitions are added to those in Chapter 2 and Section 603 of the Uniform Plumbing Code, 2012 Edition, or are modified from those definitions for the purposes of rule 641—25.5(105) only.

a. Administrative authority. The administrative authority for this rule is the city council and its designees or, with respect to private water utilities, the Iowa utilities board.

b. Approved backflow prevention assembly for containment. Approved backflow prevention assembly for containment means a backflow prevention assembly which is approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research. The approval listing shall include the limitations of use based on the degree of hazard. The backflow prevention assembly shall also be listed by the International Association of Plumbing and Mechanical Officials (IAPMO) or by the American Society of Sanitary Engineering (ASSE) as having met the requirements of one of the standards listed below.

Standard	Product Covered
ANSI [□] /ASSE* 1013-2009	Reduced Pressure Principle Backflow Preventers
ANSI [□] /ASSE* 1015-2009	Double Check Backflow Prevention Assembly
ANSI [□] /ASSE* 1047-2009	Reduced Pressure Detector Backflow Preventer
ANSI [□] /ASSE* 1048-2009	Double Check Detector Assembly Backflow Preventer
ANSI [□] /AWWA [†] C510-07	Double Check Valve Backflow Prevention Assembly
ANSI [□] /AWWA [†] C511-07	Reduced-Pressure Principle Backflow Prevention Assembly

[□]American National Standards Institute, 1819 L Street NW, Washington, DC 20036

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

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

c. Approved backflow prevention assembly for containment in a fire protection system. Approved backflow prevention assembly for containment in a fire protection system means a backflow prevention assembly to be used in a fire protection system which meets the requirements of Factory Mutual Research Corporation (FM) and Underwriters Laboratory (UL) in addition to the requirements of 25.5(1)“b.”

d. Containment. Containment is a method of backflow prevention which requires a backflow prevention assembly on certain water services. Containment requires that the backflow prevention assembly be installed on the water service as close to the public water supply main as is practical.

e. Customer. Customer means the owner, operator or occupant of a building or property which has a water service from a public water system, or the owner or operator of a private water system which has a water service from a public water system.

f. Degree of hazard. Degree of hazard means the rating of a cross connection or a water service which indicates if it has the potential to cause contamination (high hazard) or pollution (low hazard).

g. Water service. Depending on the context, water service is the physical connection between a public water system and a customer’s building, property or private water system, or the act of providing potable water from a public water system to a customer.

25.5(2) Proposed water service.

a. No person shall install, or cause to have installed, a water service to a building, property or private water system before the administrative authority has evaluated the proposed water service for degree of hazard.

b. The administrative authority shall require the submission of plans, specifications and other information deemed necessary for a building, property or private water system to which a water service is proposed. The administrative authority shall review the information submitted to determine if cross connections will exist and the degree of hazard.

c. The owner of a building, property or private water system shall install, or cause to have installed, an approved backflow prevention assembly for containment as directed by the administrative authority before water service is initiated.

d. Reconstruction of an existing water service shall be treated as a proposed water service for the purposes of rule 641—25.5(135).

25.5(3) Existing water services.

a. Each customer shall survey the activities and processes which receive water from the water service and shall report to the administrative authority if cross connections exist and the degree of hazard.

b. The administrative authority may inspect the plumbing of any building, property and private water system which has a water service to determine if cross connections exist and the degree of hazard.

c. If, based on information provided through 25.5(3)“a” and “b,” the administrative authority determines that a water service may contaminate the public water supply, the administrative authority shall require that the customer install the appropriate backflow prevention assembly for containment.

d. If a customer refuses to install a backflow prevention assembly for containment when it is required by the administrative authority, the administrative authority may order that water service to the customer be discontinued until an appropriate backflow prevention assembly is installed.

25.5(4) Backflow prevention assemblies for containment.

a. Backflow prevention assemblies for containment shall be installed immediately following the water meter or as close to that location as deemed practical by the administrative authority.

b. A water service determined to present a high hazard shall be protected by an air gap or an approved reduced-pressure principle backflow prevention assembly.

c. A water service determined to present a low hazard shall be protected by an approved double check valve assembly or as in 25.5(4)“b.”

d. A water service to a fire protection system shall be protected from backflow in accordance with the recommendations of American Water Works Association Manual M14. Where backflow prevention is required for a fire protection system, an approved backflow prevention assembly for containment in a fire protection system shall be used.

25.5(5) *Backflow incidents.*

a. The customer shall immediately notify the agency providing water service when the customer becomes aware that backflow has occurred in the building, property or private water system receiving water service.

b. The administrative authority may order that a water service be temporarily shut off when a backflow occurs in a customer's building, property or private water system.

[ARC 8860B, IAB 6/16/10, effective 7/21/10; ARC 1089C, IAB 10/16/13, effective 11/20/13]

These rules are intended to implement Iowa Code chapter 105 as amended by 2013 Iowa Acts, Senate File 427.

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