CHAPTER 25
STATE PLUMBING CODE
[Prior to 7/29/87, see Health Department[470] Ch 25]

641—25.1(105) Adoption. Section 101 except as noted below and Chapters 2 to 16 of the Uniform Plumbing Code, 2009 Edition, as published by the International Association of Plumbing and Mechanical Officials, 20001 South Walnut Drive, Walnut, California 91789-2825, are hereby adopted by reference with amendments as the state plumbing code authorized by Iowa Code section 105.4.

Exception to Section 101: Delete ", except as provided for in Section 103.5.5.2" from the end of subsection 101.5.6.
[**ARC 8860B**, IAB 6/16/10, effective 7/21/10]

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, 2009 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]

641—25.4(105) Amendments to the Uniform Plumbing Code.

25.4(1) Section 412. Delete the section and Table 4-1 and insert the following text and table. Reprinted from the 2009 International Plumbing Code with permission of the International Code Council. All rights reserved.

IPC 403.1 Minimum number of fixtures. Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table IPC 403.1. Types of occupancies not shown in Table IPC 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.

TABLE IPC 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections IPC 403.2 and IPC 403.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (Urinals, See Section 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN[e, f] (See Section 410.1)	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

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				MALE	FEMALE	MALE	FEMALE			
1 (cont'd)	Assembly (cont'd)	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 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
		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
3	Educational	E	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink

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				MALE	FEMALE	MALE	FEMALE			
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		See Section 411	1 per 400	1 service sink
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 patients[b]	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	—
		I-3	Prisons[b]	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
			Reformitories, 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

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				MALE	FEMALE	MALE	FEMALE			
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
		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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				MALE	FEMALE	MALE	FEMALE			
7 (cont'd)	Residential (cont'd)	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	Residential care/assisted living facilities	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

[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 patients.

[c] A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.

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

[e] The minimum number of required drinking fountains shall comply with Table IPC 403.1 and Chapter 11 of the International Building Code.

[f] Drinking fountains are not required for an occupant load of 15 or fewer.

IPC 403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table IPC 403.1. Fractional numbers resulting from applying the fixture ratios of Table IPC 403.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.

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

IPC 403.1.2 Family or assisted-use toilet and bath fixtures. Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 of the International Building Code are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

IPC 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 less.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 50 or less.

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

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

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

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

IPC 403.3.3 Location of toilet facilities in covered malls. In covered mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 300 feet (91 m). In covered mall buildings, the required facilities shall be based on total

square footage, and facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum travel distance to central toilet facilities in covered mall buildings shall be measured from the main entrance of any store or tenant space. In covered mall buildings, where employees' toilet facilities are not provided in the individual store, the maximum travel distance shall be measured from the employees' work area of the store or tenant space.

IPC 403.3.4 Pay facilities. Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.

IPC 403.4 Signage. Required public facilities shall be designated by a legible sign for each sex. Signs shall be readily visible and located near the entrance to each toilet facility.

IPC 410.1 Approval. Drinking fountains shall conform to ASME A112.19.1M, ASME A112.19.2M or ASME A112.19.9M and water coolers shall conform to ARI 1010. Drinking fountains and water coolers shall conform to NSF 61, Section 9. Where water is served in restaurants, drinking fountains shall not be required. In other occupancies, where drinking fountains are required, water coolers or bottled water dispensers shall be permitted to be substituted for not more than 50 percent of the required drinking fountains.

IPC 410.2 Prohibited location. Drinking fountains, water coolers and bottled water dispensers shall not be installed in public restrooms.

IPC 411.1 Approval. Emergency showers and eyewash stations shall conform to ISEA Z358.1.

IPC 411.2 Waste connection. Waste connections shall not be required for emergency showers and eyewash stations.

IPC 419.2 Substitution for water closets. In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets in assembly and educational occupancies. Urinals shall not be substituted for more than 50 percent of the required water closets in all other occupancies.

25.4(2) Section 503.0. Delete the section.

25.4(3) Section 710.1. Add 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(4) Section 807.4. Delete the section and insert in lieu thereof the following:

807.4 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(5) Section 906.7. Change "two (2) inches (50.8 mm)" to "three (3) inches (76.2 mm)".

25.4(6) Section 1002.2. Delete Table 10-1 and insert in lieu thereof the following:

TABLE 10-1

Horizontal Distance of Trap Arms

Trap Arm Size		Distance Trap to Vent			
		Minimum		Maximum	
Inches	Millimeters	Inches	Millimeters	Feet	Meters
1¼	32	2½	64	5	1.5
1½	40	3	76	6	1.8
2	50	4	102	8	2.4
3	80	6	152	12	3.7
4	100	8	203	12	3.7
> 4	> 100	2 × Diameter		12	3.7

Slope one-fourth (¼) inch per foot (20.9 mm/m)

25.4(7) Chapter 16. Delete Part I and insert in lieu thereof the following:

Wastewater intended for use in underground irrigation systems shall be treated in accordance with 567—Chapter 69, Private Sewage Disposal Systems. The irrigation system shall comply with 567—69.12(455B).

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

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, 2009 Edition.

25.5(1) *Definitions.* The following definitions are added to those in Chapter 2 and Section 603 of the Uniform Plumbing Code, 2009 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.

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. The administrative authority shall publish the standards which it uses to determine the degree of hazard for a water service. These shall be consistent with standards published by the Iowa department of public health.

b. 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.

c. 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.

d. If, based on information provided through 25.5(3)*"b"* and *"c,"* 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.

e. 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]

These rules are intended to implement Iowa Code chapter 105.

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