Regulatory Analysis

Notice of Intended Action to be published: 641—Chapter 25
"State Plumbing Code"

Iowa Code section(s) or chapter(s) authorizing rulemaking: 105.4

State or federal law(s) implemented by the rulemaking: Iowa Code chapter 105 and Executive Order 10 (January 10, 2023)

Public Hearing

A public hearing at which persons may present their views orally or in writing will be held as follows:

November 19, 2024 9 a.m.	Ledges Conference Room 6200 Park Avenue Des Moines, Iowa

Virtual participation information will be available on the Department of Inspections, Appeals, and Licensing's website prior to the hearing.

Public Comment

Any interested person may submit written or oral comments concerning this Regulatory Analysis, which must be received by the Department no later than 4:30 p.m. on the date of the public hearing. Comments should be directed to:

Amy K. Oetken
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Des Moines, Iowa 50321
Phone: 515.672.4929
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Purpose and Summary

This proposed rulemaking repromulgates Chapter 25, "State Plumbing Code," and implements Iowa Code section 105.4, in accordance with the goals and directives of Executive Order 10. Iowa Code section 105.4 provides that the Plumbing and Mechanical Board will establish by rule a plumbing installation code governing the installation of plumbing systems in the state. The Board is to adopt the most current version of the Uniform Plumbing Code (UPC) and may adopt amendments to the UPC so long as those amendments do not conflict with the fire safety rules and standards promulgated by the Department.

This rulemaking implements the aforementioned Iowa Code section by adopting the most current version of the UPC as the state plumbing code, with amendments. The Board took into consideration informal public comment provided during Board meetings in proposing these rules.

Analysis of Impact

1. **Persons affected by the proposed rulemaking:**

- **Classes of persons that will bear the costs of the proposed rulemaking:**

Costs associated with this proposed chapter are borne by members of the plumbing industry by adopting business practices to comply with Chapter 25 and by the Department in administering the chapter.

- **Classes of persons that will benefit from the proposed rulemaking:**

Chapter 25 benefits the welfare and safety of the public by ensuring consistency and safety in the installations of plumbing systems in Iowa.

2. **Impact of the proposed rulemaking, economic or otherwise, including the nature and amount of all the different kinds of costs that would be incurred:**

- **Quantitative description of impact:**

As many of the rules require that members of the industry adopt and implement appropriate operational policies, the costs are not directly incurred due to these rules but are necessary when engaging in installing safe plumbing systems in buildings in Iowa. These costs are difficult to quantify. Furthermore, these costs are statutorily required by Iowa Code section 105.4.

- **Qualitative description of impact:**

The proposed rules were drafted to promote consistency and safety in plumbing installations by adopting the UPC. The UPC has been adopted by at least ten other states, including Nebraska, Minnesota, Missouri, and South Dakota. Each of those states has tailored the UPC to address the unique circumstances of the individual state. This chapter includes amendments that tailor the UPC to the needs of the industry in Iowa, while still establishing consistency through use of the UPC. The chapter was drafted with public input.

3. **Costs to the State:**

- **Implementation and enforcement costs borne by the agency or any other agency:**

Costs to the Department include the costs to administer this chapter. There are no specific financial costs other than those associated with the Department's general functions.

- **Anticipated effect on state revenues:**

Costs of implementing these rules are largely paid by members of industry. There is no anticipated impact on state revenue from these rules.

4. **Comparison of the costs and benefits of the proposed rulemaking to the costs and benefits of inaction:**

There are no specific financial costs to implement or enforce this rulemaking outside of any costs associated with the Department's statutory duties. The costs of this rulemaking are directly associated with the Department's general functions. This rulemaking does not impose any costs on the industry other than the costs of operating in compliance with the statutorily required rules. The benefits include clear and consistent implementation of applicable Iowa Code provisions.

5. **Determination whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rulemaking:**

There are no less costly or intrusive methods for achieving the purpose of the proposed rulemaking. Iowa Code section 105.4 requires the Board to adopt the UPC as the state plumbing code governing buildings in Iowa.

6. **Alternative methods considered by the agency:**

- **Description of any alternative methods that were seriously considered by the agency:**

Response in Section "5," above.

- **Reasons why alternative methods were rejected in favor of the proposed rulemaking:**

Response in Section "5," above.

Small Business Impact

If the rulemaking will have a substantial impact on small business, include a discussion of whether it would be feasible and practicable to do any of the following to reduce the impact of the rulemaking on small business:

- Establish less stringent compliance or reporting requirements in the rulemaking for small business.

- Establish less stringent schedules or deadlines in the rulemaking for compliance or reporting requirements for small business.
- Consolidate or simplify the rulemaking's compliance or reporting requirements for small business.
- Establish performance standards to replace design or operational standards in the rulemaking for small business.
- Exempt small business from any or all requirements of the rulemaking.

If legal and feasible, how does the rulemaking use a method discussed above to reduce the substantial impact on small business?

Many persons engaged in installing plumbing systems are small business owners. Iowa Code section 105.4(1) requires the Board to adopt the most recent version of the UPC and does not provide for exemptions or different standards for small business owners. The necessity for consistency and safety in the installation of plumbing systems applies whether the business is a small business or a large corporation. If a small business identified a rule that is overly burdensome and the goals of which could be achieved in a manner that would reduce the impact on the small business, the small business could utilize the Board's established waiver process.

Text of Proposed Rulemaking

ITEM 1. Rescind 641—Chapter 25 and adopt the following **new** chapter in lieu thereof:

CHAPTER 25
STATE PLUMBING CODE

641—25.1(105) Adoption. Sections 101 and 102, Chapters 2 to 17 and Appendices A and M of the Uniform Plumbing Code (UPC), 2024 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. Portions of this chapter reproduce excerpts from the 2024 International Plumbing Code; Copyright 2023; Washington, D.C.: International Code Council www.ICCSAFE.org. Such excerpts are reproduced with permission, all rights reserved.

641—25.2(105) Applicability. The provisions of the UPC, as adopted and amended by this chapter, are applicable to the plumbing in buildings or on premises in Iowa. Local jurisdictions may not adopt other plumbing codes. Local jurisdictions may adopt additional amendments provided they are stricter than the UPC as amended by this chapter and copies of any local amendments are provided to the board.

641—25.3(105) Fuel gas piping. Fuel gas piping shall comply with the requirements of Chapter 12 of the UPC, 2024 Edition, unless the provisions conflict with 661—Chapter 226, in which case 661—Chapter 226 governs.

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

25.4(1) The following amendment apply to UPC Chapter 1: Section 101.2 Scope. Modify the section by adding the following sentence to the end of the section: "Local jurisdictions may administer the permit, inspection, testing, and enforcement provisions contained in this code. Permit, inspection, testing, and enforcement provisions contained in this code are not administered by the Plumbing and Mechanical Systems Board or the state."

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

a. Section 301.5 Alternative Engineered Design. Modify the section by adding the following sentence to the end of the section: "No engineered single-stack drainage system shall be installed."

b. Section 309.6 Dead Legs. Modify the section by adding the following sentence to the end of the section: "The authority having jurisdiction can determine the method of flushing."

c. Subsection 314.4.1 Installation of Thermoplastic Pipe and Fittings. Trench width for thermoplastic pipe shall be limited to six times the outside diameter of the piping at the base and thermoplastic piping be bedded in not less than 4 inches (102 mm) of aggregate bedding material supporting the pipe. Initial backfill shall encompass the pipe, and aggregate material shall be three-eighths (3/8) inch p-gravel or 1-inch clean class one bedding.

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

a. Section 402.5 Setting. Modify the section by adding the following sentence to the end of the section that begins "Exception:": The installation of paper dispensers, sanitary napkin disposal unit or accessibility grab bars shall not be considered obstructions.

b. Section 407.3 Limitation of Hot Water Temperature for Public Lavatories. Modify the section by adding the following sentence to the end of the section: "These devices shall be installed at or as close as possible to the point of use."

c. Section 408.12 Showers. Create a new Section 408.12 stating: "Limitation of Hot Water Temperature of Pet Grooming Stations. The maximum hot water temperature discharging from pet grooming stations shall be limited to 120ºF (49ºC) and the maximum temperature regulated by one of the following means, which shall be installed at or as close as possible to the point of use:

"(1) A limiting device conforming to ASSE1070, ASMEA112.1070, CSAB125.70, or CSAB125.3.

"(2) A water heater conforming to ASSE 1084."

d. Section 409.4 Limitation of Hot Water in Bathtubs and Whirlpool Bathtubs. Modify the section by adding the following sentence to the end of the section: "These devices shall be installed at or as close as possible to the point of use."

e. Section 410.3 Limitation of Water Temperature in Bidets. Modify the section by adding the following sentence to the end of the section: "These devices shall be installed at or as close as possible to the point of use."

f. Section 416.5 Drain. Modify the section by deleting the last sentence, which states: "Where a drain is provided, the discharge shall be in accordance with Section 811.0."

g. Section 418.3 Location of Floor Drains. Modify the section by adding the following to the end of the section: "(5) Rooms equipped with a water heater."

h. 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 403.1 of the International Plumbing Code, reprinted here as Table 422.1. The design occupant load and occupancy classification shall be determined in accordance with the state building code or the authority having jurisdiction. Required public facilities shall be designated by a legible sign for each sex and signs be readily visible and located near the entrance to each toilet facility."

i. 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]
(See Sections 403.1.1 and 403.2)
(Reprinted with permission,* from the 2018 International Plumbing Code, excerpt from IPC Table 403.1)

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 422.7)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 415.0)	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly	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
		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
		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
		Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries,	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink

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			MALE	FEMALE	MALE	FEMALE			
		arcades and gymnasiums[d]							
		Passenger terminals and transportation facilities[d]	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
		Places of worship and other religious services[d]	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
1	Assembly	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	1 service sink
	(cont'd)	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	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

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			MALE	FEMALE	MALE	FEMALE			
			exceeding 1,500						
2	Business	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[e]
3	Educational	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
4	Factory and Industrial	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		—	1 per 400	1 service sink
		Custodial care facilities	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Medical care recipients in hospitals and nursing homes	1 per room[c]		1 per room[c]		1 per room[c]	1 per 100	1 service sink

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			MALE	FEMALE	MALE	FEMALE			
5	Institutional	Employees in hospitals and nursing homes[b]	1 per 25		1 per 35		—	1 per 100	
		Visitors in hospitals and nursing homes	1 per 75		1 per 100		—	1 per 100	
		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 in reformatories, detention centers and correctional centers[b]	1 per 25		1 per 35		—	1 per 100	—
5			1 per 15		1 per 15		1	1 per 100	1 service sink
6	Mercantile	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink[e]
		Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink

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			MALE	FEMALE	MALE	FEMALE			
7	Residential	Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
	Residential	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit		1 kitchen sink per dwelling unit; 1 automatic clothes washer connection

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			MALE	FEMALE	MALE	FEMALE			
	(cont'd)								per dwelling unit
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage	Structures for the storage of goods, warehouses, storehouse and freight depots. Low and Moderate Hazard.	1 per 100		1 per 100		—	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 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] For business and mercantile classifications with an occupant load of 15 or fewer, service sinks will not be required.

[*]Excerpted (with modifications) from Table 403.1 of the 2018 International Plumbing Code; Copyright 2017; Washington, D.C.: ICC. Reproduced with permission. All rights reserved. www.ICCSAFE.org

j. Insert the following text at the end of Chapter 4:

"422.8 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 and not be substituted for more than 50 percent of the required water closets in all other occupancies. (Reprinted from the 2021 International Plumbing Code section 424.2)"

25.4(4) The following amendments shall apply to UPC Chapter 6:

a. Section 603.4.8 Drain Lines. Modify the section by adding the following language to the end of the last sentence in the section: "or in accordance with the manufacturer's drain-sizing chart for installation."

b. Section 609.1 Installation. Insert the following: "Building supply yard piping shall be not less than 60 inches below earth cover."

c. Section 609.12 Pipe Insulation. Delete Sections 609.12 through 609.12.2 and insert the following in lieu thereof:

"Section 609.12 Pipe Insulation. Insulation of domestic hot water piping shall be in accordance with the state applicable energy conservation code."

d. Section 611.4 Sizing of Residential Softeners. Modify the section by adding the following to the end of the last sentence in the section: "or as specified in the manufacturer's installation instructions."

e. Section 612 Residential Fire Sprinkler Systems. Delete sections 612.0 through 612.7.2.

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

a. Section 702.1 Trap Size. Table 702.1 Note 9. Modify this note by deleting "a maximum shower size of 36 inches (914 mm) in width and 60 inches (1524 mm) in length" and inserting the following in lieu thereof: "showers having only one shower head rated at a maximum of 2.5 gpm."

b. 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 will 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 amendments shall apply to UPC Chapter 8:

a. Section 807.3 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."

b. Section 814.5 Point of Discharge. Delete Section 814.5 and insert the following in lieu thereof:

"Section 814.5 Point of Discharge. Air-conditioning condensate waste pipes shall connect indirectly to a properly trapped fixture, floor drain, or open sight drain, or where permitted in Section 814.6, to the drainage system through an air gap or air break to trapped and vented receptors, dry wells, leach pits, sump pump, the tailpiece of plumbing fixtures or indirectly to the building storm sewer through a roof drain, or indirectly to the building storm sewer through a roof drain. A condensate drain shall be trapped in accordance with appliance manufacturer's instructions or as approved."

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

a. Section 901.1 Applicability. Modify the section by adding the following sentence to the end of the section: "No engineered single-stack drainage systems shall be installed."

b. Section 906.1 Roof Termination. Modify the section by deleting the last sentence.

c. Section 908.2.2 Size. Delete the second sentence in this section and insert the following new sentence in lieu thereof: "The wet vent shall be not less than 2 inches (50 mm) in diameter for 6 drainage fixture units (dfu) or less, and not less than 3 inches (80 mm) in diameter for 7 dfu or more."

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

a. 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:

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

[2]The 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).

b. Section 1014.1.3 Food Waste Disposers and Dishwashers. Modify the section by deleting the second sentence and inserting the following in lieu thereof: "Commercial food waste disposers shall discharge into the building's drainage system in accordance with the requirements of the Authority Having Jurisdiction."

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

a. Sections 1205.0 through 1205.2 Authority to Render Gas Service. Delete the sections.

b. Sections 1207.0 and 1207.1 Temporary Use of Gas. Delete the sections.

c. Subsection 1208.5.3.5 Corrugated Stainless Steel Tubing. Delete subsection 1208.5.3.5 and insert the following in lieu thereof:

Subsection 1208.5.3.5 Corrugated Stainless Steel Tubing. Only CSST with an arc-resistant jacket or covering system listed in accordance with ANSI LC-1 (Optional Section 5.16)/CSA 6.26-2016 shall be installed, in accordance with the terms of its approval, the conditions of listing, the manufacturer's instructions and this code, including electrical bonding requirements in Section 1211.2. CSST shall not be used for through-wall penetrations from the point of delivery of the gas supply to the inside of

the structure and not be installed in locations where subject to physical damage unless protected in an approved manner.

d. Section 1211.3 Arc-Resistant Jacketed CSST. Delete the section.

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

Section 1306.3 Report Items. Modify the section by deleting "Authority Having Jurisdiction" and inserting "responsible facility authority" in lieu thereof.

641—25.5(105) Backflow prevention with containment. Cities with populations of 15,000 or greater as determined by the 2010 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, 2024 Edition.

25.5(1) *Definitions.* The following definitions are added to those in Chapter 2 and Section 603 of the Uniform Plumbing Code, 2024 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, 1899 L Street NW, 11th Floor, Washington, DC 20036

*American Society of Sanitary Engineering, 18927 Hickory Creek Drive #220, Mokena, IL 60448

†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 will 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 will 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 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 will 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.* The following standards shall apply:

a. Backflow prevention assemblies for containment will 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 will 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 will 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 will be protected from backflow in accordance with the recommendations of American Water Works Association Manual M14, fourth edition. Where backflow prevention is required for a fire protection system, an approved backflow prevention assembly for containment in a fire protection system will 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.

These rules are intended to implement Iowa Code chapter 105.