



State of Wisconsin \ Department of Commerce

HEARING DRAFT of PROPOSED RULES

Rule No.: Chapters Comm 62 and 81 to 84
Relating to: Wisconsin Uniform Plumbing Code
and Wisconsin Commercial Building Code

COM-10544 (N.03/97)

The Department of Commerce proposes an order to:

amend ss. Comm 62.2900 (1) (b), Comm 81.01 (5), Comm 81.01 (79), Comm 81.01 (115), (120) and (147), Comm 81.01 (156), Comm 81.01 (163), Comm 81.01 (189), Comm 81.01 (204), Comm 81.01 (234), Comm 81.01 (269), Comm 81.20 (1), Tables Comm 81.20–1 to 81.20–9, Tables Comm 81.20–11 to 81.20–13, Comm 82.20 (1) (c) (intro.), (4) (b) 2. and (13) (e), Table Comm 82.20–2 line 6 and Footnote a, Comm 82.21 Title, Comm 82.21 (1) (intro.), Comm 82.30 (3), Tables Comm 82.30–1 and 82.30–3, Comm 82.30 (10)) (a) 1., Comm 82.31 (4) (a), Comm 82.31 (10) (c), (13) 1. e., (14) (g) 2. and (17) (a) 1. e., Comm 82.31 (17) (b) 1. and 3. a., Comm 82.33 (9) (c) 1. a. and b., Comm 82.33 (9) (f) 1., Comm 82.34 (3) (a) 1., Comm 82.34 (5) (intro.) and (a), Table Comm 82.35, Comm 82.35 (3) (b) 2. a. and b., (c) 2. a. and b. and (d) 2. b. and c., Comm 82.35 (5) (a) 1., Comm 82.36 (4) (b) 3. and (8) (a) 4., Comm 82.36 (3) (b) 3., Table Comm 82.38–1 lines 10 to 17 and Footnote g and j, Table Comm 82.40–1 and 82.40–2, Comm 82.40 (3) (b) 1. b. and (d) 3., Comm 82.40 (4) (c) 1. a., (f) and (i), (5) (c) and (6) (a), Comm 82.40 (7) (d) 1. b., Comm 82.40 (8) (j), Table Comm 82.41–1, Table Comm 82.41–2, Comm 82.41 (4) (f) and (i) and (5) (a), (e) 2. and (f) (intro.), Comm 82.50 (3) (b) 5., Comm 82.51, Table Comm 82.70–1 lines 2 and 10 and Footnote e, Comm 84.20 (3) (b) 2. to 8., Comm 84.20 (5) (b) 1. c., (n) 1. a. and b., (o) 1. a. and 2. b. and (p) 2. c., Tables Comm 84.30–2, 84.30–5 and 84.30–6, Comm 84.30 (4) (e) 2., Tables Comm 84.30–7, 84.30–8 and 84.30–10 and Comm 84.40 (2) (a) 2., (4) (b), (6) (a), (8) (c), (9) (b) and (10) (b);

repeal ss. Comm 81.01 (2), Comm 81.01 (199e), Comm 81.01 ((209e) and (209m), Comm 81.01 (252e) and (258), Table Comm 81.20–10, Comm 82.21 (2), Table Comm 82.21–1, Comm 82.30 (6) (a) 2. and (b) 5., Comm 82.30 (1) (a) 2. b., 82.31 (17) (a) 1. f., Comm 82.33 (9) (c) 1. c., Table Comm 84.10 line 8, Comm 84.30 (1) (f) Note, Comm 84.30 (4) (f) and (g) and Comm 84.40 (12);

create ss. Comm 81.01 (79m), (80m), (82e) and (108e), Comm 81.01 (231m), Comm 82.22, Table Comm 82.22–1, Comm 82.30 (11) (h) 1. g., Comm 82.32 (4) (b) 2. c., Comm 82.33 (8) (d) 6. and 7., Comm 82.34 (5) (c) 7., Table Comm 82.40–3e, Comm 82.40 (8) (b) 8., Comm 82.40 (8) (d) 3. b. and Comm 82.40 (3) (c) 1. d.;

repeal and recreate ss. Comm 81.01 (152), (153) and (154), Comm 81.01 (163), Comm 81.01 (203), Comm 81.01 (204m), Comm 82.21 (b) 1. b., Comm 82.30 (4) (b), 82.30 (11) (e) 2. and 3., Comm 82.30 (11) (f) 2., Comm 82.31 (5), Comm 82.33 (7) (a), Comm 82.34 (4) (b) 2., Comm 82.34 (14) (a) 2., Comm 82.35 (3) (a), Comm 82.36 (11), Comm 82.40 (3) (e), Comm 82.40 (8) (e) 2. and Comm 84.20 (5) (o) 3.;

renumber and amend ss. Tables Comm 81.20–10m and Comm 84.40 (14) to (19); and renumber ss. Comm 82.21 (1) (d), Comm 82.21 (3), Comm 82.30 (4) (c) to (e), Comm 82.30 (6) (a) 1., Comm 82.30 (1) (a) 2. c. to e., 82.30 (11) (h) 1. g. to i., Comm 82.40 (8) (d) e., Comm 84.30 (4) (h) and (i) and Comm 84.40 (13) to (19) relating to the design, installation or construction, inspection and maintenance of plumbing.

ANALYSIS OF PROPOSED RULES

1. Statutes Interpreted.

Sections 101.02 and 145.02, Stats.

2. Statutory Authority.

Sections 101.02 and 145.02, Stats.

3. Related Statute or Rule.

- Section 145.13, Stats
- Chapters Comm 60 to 66, Commercial Building Code
- Chapters 20 to 25, Uniform Dwelling Code
- Chapters 81 to 87, Uniform Plumbing Code

4. Explanation of Agency Authority.

Sections 101.02 and 145.02 Stats., grant the Department of Commerce general authority for protecting the health, safety and welfare of the public by establishing reasonable and effective safety standards for the design, installation or construction, inspection and maintenance of plumbing. In accordance with s.145.13, Stats., the Department is also responsible for safeguarding the waters of the state.

5. Summary of Proposed Rules.

The proposed revisions to Chapters Comm 81 to 84 clarify existing rules and bring the state Uniform Plumbing Code up to date with current technology and nationally recognized standards. The proposed rules contain a number of modifications to the technical requirements within these standards, reorganization of current requirements and editorial changes.

The proposed change in Chapter Comm 62 would limit the use of waterless antiseptic cleansing provisions to facilities where waterless toilets or urinals are used.

The following is a summary of the major proposed changes to Chapters Comm 81 to 84:

- a. Allow the recycling of wastewater discharged from water closets and urinals. [Comm 82.34 (3) (a) 1.]

- b. Create code language to recognize alternate standards that have been used by the department. (e.g. Pressurized sewer systems and water treatment device sizing). [Comm 82.30 (11) (f) 2. and Comm 82.40, Table 82.40-3e]
- c. Expand the requirement for demand regeneration controls for water treatment devices to devices that discharge to municipal sewers. [Comm 82.40 (8) (j)]
- d. Use the term “manufactured home” in place of the term “mobile home” in numerous places as referenced in s.101.91 (2), Stats. [Comm 81.01 (152), (153), and (154) and Comm 82.51]
- e. Change the calculation of the load factor on drain piping so it reflects national model plumbing code requirements. [Comm 82.30 (3)]
- f. Modify the triggers for the installation of stack vents serving drain stacks from two to five or more branch intervals. [Comm 82.31 (4)(a) and 82.31 (5)]
- g. Expand and describe more fully the grease and oil treatment requirements for restaurants. [Comm 82.34 (5)]
- h. Modify the requirements for secondary roof drains so they more closely follow national standards. [Comm 82.36 (11)]
- i. Upgrade the requirements for water conserving fixtures to more closely correspond to national standards. [Comm 84.20 (3)(b)2.]

6. Summary of, and Comparison with, Existing or Proposed Federal Regulations.

There are several existing federal regulations that relate to the design, installation or construction, inspection and maintenance and repair of plumbing. Some of these regulations require compliance with the 2006 editions of the International Plumbing Code (IPC), a national model code developed by the International Code Council (ICC), and the Uniform Plumbing Code (UPC), a national model code developed by the International Association of Plumbing and Mechanical Officials.

An Internet-based search of the *United States Code* (USC) found the following existing federal rules that impact plumbing. The Wisconsin Uniform Plumbing Code reflects the requirements currently contained in these federal laws.

- Assembly Bill No. 1953, Chapter 853 – The Lead Solder, Pipe and Flux Law expands Section 116875 of the Health and Safety Code as contained in USC Title 42, Chapter 6A, Subchapter XII, Part B, Section 300g-6 relating to lead plumbing to include any pipe or plumbing fitting, or fixture intended to convey or dispense water for human consumption. The law, which becomes effective January 1, 2010, passed both the Assembly and the Senate in 2006 and also revises the term “lead free.”

- USC Title 42, Chapter 6A, Subchapter XII, Part F, Section 300j-24 – Lead contamination in school drinking water outlines the testing protocol for lead contamination in drinking water from coolers and other sources at educational agencies, private nonprofit elementary or secondary schools and day care centers. The law became effective in 1999. Currently, legislation is being proposed that would amend this section of the Safe Drinking Water Act.
- USC Title 33, Chapter 26, Subchapter IV, Section 1342 – National Pollutant Discharge Elimination System (NPDES) established Phase I of the storm water program in 1990. Nine years later, Phase II of the program was signed into law and requires smaller communities to develop and implement a comprehensive storm water management program.

An Internet-based search of the 2005 through 2008 issues of the *Federal Register* found a proposed rule about plumbing connections to manufactured homes published April 26, 2005 in Vol. 70, No. 79. Comments and an analysis have been received and the final rule will become effective October 20, 2008. Several of the proposed requirements exceed the standards of the Wisconsin Uniform Plumbing Code. These include the requirement for a shutoff valve to be located beneath or adjacent to the home, a condition that the water heater be removed for air testing water systems and a requirement for the installation of a drain cleanout when pipe pitch is 1/8" per foot.

7. Comparison with Rules in Adjacent States.

An Internet-based search of the four adjacent states found the following:

- The Illinois Department of Public Health administers a state-written uniform plumbing code with exceptions for cities that existed prior to Illinois statehood.
- The Iowa Department of Public Health administers the Iowa Uniform Plumbing Code that adopts the 2000 edition of the national UPC with amendments.
- The Michigan Department of Consumer and Industry Services, Bureau of Construction Codes developed the 2003 Michigan Plumbing Code that became effective December 31, 2003. Based on the IPC, the code includes state amendments.
- The Minnesota Department of Labor and Industry, Building Codes and Standards Division, administers the Minnesota Plumbing Code, a state written uniform code that was revised August 25, 2003.

8. Summary of Factual Data and Analytical Methodologies.

The primary methodology for updating the Wisconsin Uniform Plumbing Code, chapters Comm 81 to 84 has been a review and assessment of the latest editions of the national technical standards that serve as the basis for Wisconsin code. Staff prepared a comprehensive comparison of the changes in the 2006 editions of the IPC and the national UPC to what currently is adopted in chapters Comm 81 to 84. The department's review and assessment process involved the participation of the Plumbing Advisory Code Council. The members of that Council represent the many stakeholders involved in the plumbing industry including designers, inspectors, labor and building contractors. (A listing of the Plumbing Advisory Code Council is provided at the end of this analysis.)

The department believes the national model codes reflect current societal values with respect to safeguarding people and property from hazards arising from the use of plumbing.

9. Analysis and Supporting Documents Used to Determine Effect on Small Business or in Preparation of Economic Impact Report.

The department used the Plumbing Advisory Code Council to gather and analyze information on potential impacts in complying with both the technical and administrative requirements of the codes. Many small businesses belong to the industry associations that sit on the advisory council. A responsibility of council members is to bring forth concerns that their respective organizations may have with the requirements including economic impact.

In addition to posting rule development and council activities on the department's web site, the department offers an Email subscription service that is available to all small businesses. This service provides Email notification of council meetings, meeting, agendas and council meeting progress reports so small businesses can follow proposed code changes.

10. Effect on Small Business.

The department believes the rules will not increase the effect on small businesses from what the current rules impose on them. An economic impact report is not required pursuant to s. 227.137, Stats

11. Agency Contact Person.

Lynita Docken, Program Manager, lynita.docken@wisconsin.gov, (608) 785-9349.

12. Public Hearing Comments.

A public hearing has been scheduled for July 8, 2008. The hearing record on this proposed rulemaking will remain open until July 18, 2008, to permit submittal of written comments from persons who are unable to attend the hearing or who wish to supplement testimony offered at the hearing. Written comments should be submitted to Lynita Docken at the Department of Commerce, P.O. Box 2689, Madison, WI 53701-2689, or Email at lynita.docken@wisconsin.gov.

Council Members and Representatives

The proposed rules have been developed with the assistance of the Plumbing Advisory Code Council. The members of that citizen advisory council are as follows:

<u>Name</u>	<u>Representing</u>
Art Biesek	League of Wisconsin Municipalities
Thomas Boehnen	American Society of Plumbing Engineers
Patrick Casey	Plumbers' Local 75
Hallet Jenkins	Milwaukee City Department of Neighborhood Services
Gary Kowalke	Wisconsin Association of Plumbing-Heating-Cooling Contractors
Jeff Kuhn	Plumbing and Mechanical Contractors of SE Wisconsin
Rudolf Petrowitsch	American Society of Sanitary Engineering
Gene Shumann	Designer
David Viola	Plumbing Manufacturers Institute
Joseph Zoulek	Wisconsin Association of Plumbing-Heating-Cooling Contractors

SECTION 1. Comm 62.2900 (1) (b) is amended to read:

Comm 62.2900 (1) (b) Lavatories. Waterless antiseptic cleansing provisions may be substituted for lavatories required under IBC chapter 29 where systems or devices under par. (a) are substituted for water closets. Where water-based water closets or urinals are used, water-based lavatories shall be provided in numbers to accommodate the number of people served by the water closets and urinals.

SECTION 2. Comm 81.01 (5) is amended to read:

Comm 81.01 (5) “Air-break” means a piping arrangement for a drain system where the wastes from a fixture, appliance, appurtenance or device discharge by means of indirect or local waste piping terminating in a receptor at a point below the flood level rim of the receptor and above the ~~inlet~~outlet of the trap serving the receptor.

SECTION 3. Comm 81.01 (20) is repealed.

SECTION 4. Comm 81.01 (79) is amended to read:

Comm 81.01 (79) “Double check backflow prevention assembly” means a type of cross connection control ~~device~~assembly which is composed of 2 independently acting check valves internally force-loaded to a normally closed position, tightly closing shut-off valves located at each end of the assembly and fitted with test cocks. ~~The terms “backflow preventer, double check valve type” or “DCV” have~~ The term “double check valve backflow preventer” has the same meaning as double check backflow prevention assembly.

SECTION 5. Comm 81.01 (79m), (80m), (82e) and (108e) are created to read:

Comm 81.01 (79m) “Double Check Fire Protection Backflow Prevention Assembly” means an assembly serving a fire protection system and consisting of two independently acting check valves, internally forced loaded to a normally closed position, two tightly closing shut-off valves, and properly located test cocks. The term “double check valve backflow preventer for fire protection systems” has the same meaning as double check fire protection backflow prevention assembly.

(80m) “Double Check Detector Fire Protection Backflow Prevention Assembly” means an assembly serving a fire protection system and consisting of two independently acting check valves, internally forced loaded to a normally closed position, two tightly closing shut-off valves, and properly located test cocks which also includes a parallel flow meter to indicate leakage or unauthorized use of water downstream of the assembly.

(82e) “Dual check backflow preventer wall hydrant-freeze resistant type” means a type of hose bibb that provides protection of the potable water supply from contamination due to backsiphonage or backpressure without damage to the device due to freezing, and is field testable to verify protection under the high hazard conditions present at a hose threaded outlet.

(108e) “Freeze resistant sanitary yard hydrant” means a type of device serving as a hose bibb that has design features that minimize the risk of freezing, prevent groundwater contamination and provide backflow protection. The term “freeze resistant sanitary yard hydrant with backflow protection” has the same meaning as freeze resistant sanitary yard hydrant.

SECTION 6. Comm 81.01 (115), (120) and (147) are amended to read:

Comm 81.01 (115) “Hand-held shower” means a ~~type of plumbing fixture that includes a cross-connection control device,~~ a hose and a hand-held discharge piece such as a shower head or spray connecting to a fixture fitting.

(120) “High hazard” means a situation where the water supply system could be contaminated by a toxic substance or solution so as to ~~alter the characteristics of the water~~ making make the water unsuitable for the designated use.

(147) “Low hazard” means a situation where the water supply system could be contaminated by a nontoxic substance or solution so as to ~~alter the characteristics of the water~~ making make the water unsuitable for the designated use.

SECTION 7. Comm 81.01 (152), (153) and (154) are repealed and recreated to read:

Comm 81.01 (152) “Manufactured home” has the meaning specified under s. 101.91 (2), Stats.

Note: Section 101.91 (2), Stats. reads: “Manufactured home” means any of the following:

(am) A structure that is designed to be used as a dwelling with or without a permanent foundation and that is certified by the federal department of housing and urban development as complying with the standards established under 42 USC 5401 to 5425.

(c). A mobile home, unless a mobile home is specifically excluded under the applicable statute.

(153) “Manufactured home drain connector” means the pipe that joins the drain piping for a manufactured home to the building sewer.

(154) “Manufactured home community” has the meaning specified under s. 101.91 (5m), Stats.

Note: Section 101.91 (5m), Stats. reads: “Manufactured home community” means any plot or plots of ground upon which 3 or more manufactured homes that are occupied for dwelling or sleeping purposes are located. “Manufactured home community” does not include a farm where the occupants of the manufactured homes are the father, mother, son, daughter, brother or sister of the farm owner or operator or where the occupants of the manufactured homes work on the farm.

SECTION 8. Comm 81.01 (156) is amended to read:

Comm 81.01 (156) “Multipurpose piping system” means a ~~type of~~ water distribution system conveying ~~potable~~ water to plumbing fixtures and appliances and automatic fire sprinklers with the intention of serving both domestic and fire protection needs.

SECTION 9. Comm 81.01 (163) is repealed and recreated to read:

Comm 81.01 (163) “Nontoxic” means a substance in the diluted form that meets one of the following requirements:

(a) Is listed by the National Sanitation Foundation (NSF) as meeting the NSF evaluation criteria for nonfood compounds.

(b) Is acceptable to the United States Food and Drug Administration (FDA) Title 21 Section 175.300 of the Federal Regulation on Food Additives.

(c) Is acceptable for contact with potable water or is deemed non-toxic by a third party certification that is acceptable to the department.

(d) Is deemed non-toxic by the department.

SECTION 10. Comm 81.01 (189) is amended to read:

Comm 81.01 (189) “Pressure vacuum breaker assembly” means a type of cross connection control ~~device~~ assembly which consists of an independently operating internally loaded check valve and an independently operating loaded air inlet located on the discharge side of the check valve, a tightly closing shut-off valve located at each end of the assembly, and test cocks. The term “~~PVB~~pressure vacuum breaker” has the same meaning as pressure vacuum breaker assembly.

SECTION 11. Comm 81.01 (199e) is repealed.

SECTION 12. Comm 81.01 (203) is repealed and recreated to read:

Comm 81.01 (203) “Reduced pressure detector fire protection backflow prevention assembly” means a type of reduced pressure principle type backflow preventer serving a fire protection system and which includes a parallel flow meter to indicate leakage or unauthorized use of water downstream of the assembly.

SECTION 13. Comm 81.01 (204) is amended to read:

Comm 81.01 (204) “Reduced pressure principle backflow preventer” means a type of cross connection control ~~device~~ assembly which contains 2 independently acting check valves, separated by an intermediate chamber or zone in which there is a hydraulically operated means for venting to atmosphere, and includes 2 shut-off valves and 4 test cocks.

SECTION 14. Comm 81.01 (204m) is created to read:

Comm 81.01 (204m) “Reduced Pressure Fire Protection Principle Backflow Preventer” means an assembly serving a fire protection system and 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 hydraulically operated relief means of venting to atmosphere, internally forced loaded to a normally open position. The term “reduced pressure principle backflow preventer for fire protection systems” has the same meaning as reduced pressure fire protection principle backflow preventer.

SECTION 15. Comm 81.01 (209e) and (209m) are repealed.

SECTION 16. Comm 81.01 (231m) is created to read:

Comm 81.01 (231m) “Spill Resistant Vacuum Breaker” means a cross connection control device consisting of one check valve force loaded closed, an air inlet force loaded open to atmosphere downstream of the check valve, two shutoff valves and two test cocks.

SECTION 17. Comm 81.01 (234) is amended to read:

Comm 81.01 (234) “Stack vent” means a vent extending from the top of a drain stack of at least ~~two~~ 5 branch intervals.

SECTION 18. Comm 81.01 (252e) and (258) are repealed.

SECTION 19. Comm 81.01 (269) is amended to read:

Comm 81.01 (269) “Vent stack” means a vertical vent pipe that provides air for a drain stack of ~~two~~ 5 or more branch intervals.

SECTION 20. Comm 81.20 (1) is amended to read:

Comm 81.20 (1) (a) Pursuant to s. 227.21 (2), Stats., the attorney general ~~and the revisor of statutes have~~ has consented to the incorporation by reference of the standards listed in sub. (3).

(b) The codes and standards that are referenced in this chapter, and any additional codes and standards that are subsequently referenced in those codes and standards, shall apply to the prescribed extent of each such reference, except as modified by this chapter.

Note: Copies of the adopted standards are on file in the offices of the department, ~~the secretary of state~~ and the legislative reference bureau. Copies of the standards may be purchased through the respective organizations listed in Tables 81.20-1 to 81.20-13.

SECTION 21. Tables 81.20-1 to 81.20-9 are amended to read:

Table 81.20-1

AHAM	Association of Home Appliance Manufacturers 20 North Wacker Drive Chicago, Illinois 60606 <u>Phone: 202-872-5955</u> <u>Web page: www.aham.org</u>
Standard Reference Number	Title
DW-1-92 <u>2005</u>	Household Electric Dishwashers

Table 81.20-2

ANSI	American National Standards Institute, Inc. 1430 Broadway New York, New York 10018 Phone: 212-642-4900 Web page: www.ansi.org
Standard Reference Number	Title
1. Z21.22a-90 <u>99</u> (R 2004)	Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems
2. Z21.61-83	Gas-Fired Toilets
2. <u>Z21.22a-2000</u>	<u>Relief Valves for Hot Water Supply Systems (Addenda 2000)</u>
3. Z124.1-95	Plastic Bathtub Units
3. <u>Z21.22b-2001</u>	<u>Relief Valves for Hot Water Supply Systems (Addenda 2001)</u>
4. Z124.1.2-95 <u>2005</u>	Plastic Shower Receptors and Shower Stalls
5. Z124.3-95 <u>2005</u>	Plastic Lavatories
6. Z124.4-96 <u>2006</u>	Plastic Water Closet Bowls and Tanks
7. Z124.6-97	Plastic Sinks
8. Z124.9-94 <u>2004</u>	Plastic Urinal Fixtures, Plastic Urinal, American National Standard for

Table 81.20-3

ARI	Air-Conditioning and Refrigeration Institute 1815 North Fort Myer Drive Arlington, Virginia 22209 Phone: 703-524-8800 Web page: www.ari.org
Standard Reference Number	Title
ARI-1010-94 <u>2002</u>	Self-Contained Mechanically-Refrigerated Drinking-Water Coolers

Table 81.20–3e

Standard Reference Number	Title
ASME	American Society of Mechanical Engineers 345 East 47 th Street New York, New York 10017 Phone: (800) THE-ASME <u>800-843-2763</u> Web page: www.infocentral@asme.org
1. A112.1.2–91 (R1998) 2004	Air Gaps in Plumbing Systems (<u>For Plumbing Fixtures and Water-Connected Receptors</u>)
1e. A112.1.3–00	Air-gap Fittings for Use with Plumbing Fixtures, Appliances, and Appurtenances
2. A112.6.1M–97 (R2002)	Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use
<u>2m. A112.6.3-2001</u>	<u>Floor and Trench Drains</u>
3. A112.14.1–75 (R1998)	Backwater Valves
4. A112.18.1M–96 <u>2005</u>	Plumbing Fixture Fittings <u>Supply Fittings</u>
5. A112.19.1M–94 (R 2000)	Enameled Cast Iron Plumbing Fixtures
<u>5m. A112.19.1M–1994</u>	<u>Errata November 1996 to Enameled Cast Iron Plumbing Fixtures</u>
6. A112.19.1M–1994	<u>Supplement 1-2000 to Enameled Cast Iron Plumbing Fixtures</u>
7. A112.19.1M–1994	<u>Supplement 2-1998 to Enameled Cast Iron Plumbing Fixtures</u>
6. 8. <u>8. A112.19.2M–95</u> 2003	<u>Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals</u>
7. 9. <u>9. A112.19.3M–87</u> (R1996)2000 (R 2004)	Stainless Steel Plumbing Fixtures (Designed for Residential Use)
10. A112.19.3–2002	<u>Supplement 1.-2002 to Stainless Steel Plumbing Fixtures (Designed for Residential Use)</u>
8. 11. <u>11. A112.19.4–94 (R 2004)</u>	Porcelain Enameled Formed Steel Plumbing Fixtures
9. 12. <u>12. A112.19.5–79</u> (R1998)2005	Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards)
10. A112.19.6–95	Hydraulic Performance Requirements for Water Closets and Urinals
11. A112.21.1M–91	Floor Drains
12. A112.21.2M–83	Roof Drains
13. B1.20.1–83 (R1992 2006)	Pipe Threads, General Purpose (Inch)
14. B16.1– 89 <u>2005</u>	Cast Iron Pipe Flanges and Flanged Fittings (<u>Classes 25, 125, and 250</u>)
15. B16.3– 92 <u>1998</u> (R 2006)	Malleable Iron Threaded Fittings (<u>Classes 150 and 300</u>)
16. B16.4– 92 <u>2006</u>	Gray Iron Threaded Fittings (Classes 125 and 250)

17. B16.5 a-98 <u>2003</u>	Pipe Flanges and Flanged Fittings NPS ½ Through NPS 24 (and addenda)
18. B16.9-93 <u>2003</u>	Factory-Made Wrought Steel Buttwelding Fittings
19. B16.11-96 <u>2005</u>	Forged Fittings, Socket – Welding and Threaded
20. B16.12-94 <u>1998 (R 2006)</u>	Cast Iron Threaded Drainage Fittings
21. B16.15-85 (R 1994)	Cast Bronze Threaded Fittings, Classes 125 and 250
22. B16.18-84 (R-1994) <u>2001 (R 2005)</u>	Cast Copper Alloy Solder Joint Pressure Fittings
23. B16.22-95 <u>2001 (R 2005)</u>	Wrought Copper and Copper Alloy Solder – Joint Pressure Fittings
24. B16.23-92 <u>2002 (R2006)</u>	Cast Copper Alloy Solder Joint Drainage Fittings – DWV
25. B16.24-94 <u>2001</u>	Cast Copper Alloy Pipe Flanges and Flanged Fittings, Class 150, 300, 400, 600, 900, 1500 and 2500
26. B16.26-88 <u>2006</u>	Cast Copper Alloy Fittings for Flared Copper Tubes
27. B16.28-94	Wrought Steel Buttwelding Short Radius Elbows and Returns
28. B16.29-94 <u>2001</u>	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings – DWV
29. B16.42-87 (R1997) <u>1998 (R 2006)</u>	Ductile Iron Pipe Flanges and Flanged Fittings
30. B16.45-87 (R1997) <u>1998 (R 2006)</u>	Cast Iron Fittings for Sovent [®] □ Drainage Systems
31. B36.19M-85 (R1994) <u>2004</u>	Stainless Steel Pipe

Table 81.20-4

ASSE	American Society of Sanitary Engineering P.O. Box 9712 Bay Village, Ohio 4414 Phone: 440-835-3040 Web page: www.asse-plumbing.org
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Standard Reference Number	Title
1. 1001-90 <u>2002</u>	Pipe Applied Atmospheric Type Vacuum Breakers
2. 1002-86 <u>1999</u>	Anti-siphon Fill Valves (Ballcocks) for Gravity Water Closet Flush Tanks Ball-Cocks
3. 1003-95 <u>2001</u>	Water Pressure Reducing Valves
4. 1004-1990	Commercial Dishwashing Machines
5. 1005-86	Water Heater Drain Valves
6. 5. 1006-1989 <u>R</u>	Residential Use (Household) Dishwashers
7. 6. 1007-92 <u>1986</u>	Home Laundry Equipment
8. 7. 1008-89 <u>2006</u>	Household Plumbing Aspects of Residential Food Waste Disposer Units
9. 8. 1009-90 <u>1990</u>	Commercial Food Waste Grinder Units
10. 9. 1010-96 <u>2004</u>	Water Hammer Arresters

11. <u>10.</u> 1011–95 <u>2004</u>	Hose Connection Vacuum Breakers
12. <u>11.</u> 1012–93 <u>2002</u>	Backflow Preventers with Intermediate Atmospheric Vent
13. <u>12.</u> 1013–99 <u>2005</u>	Reduced Pressure <u>Principle</u> Backflow Preventers and Reduced Pressure Detector Fire Protection Principle Backflow Preventers
14. <u>13.</u> 1014–90 <u>2005</u>	<u>Backflow Prevention Devices for Hand-Held Showers</u>
15. <u>14.</u> 1015–99 <u>2005</u>	<u>Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies</u>
15e. <u>15.</u> 1016–96 <u>2005</u>	<u>Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations</u> Thermostatic, Pressure Balancing, and Combination Pressure Balancing and Thermostatic Control Valves for Individual Fixture Fittings
<u>15m.</u> 1017–2003	<u>Temperature Actuated Mixing Valves for Hot Water Distribution Systems</u>
16. 1018–88 <u>2001</u>	Trap Seal Primer Valves – <u>Potable</u> – <u>Water Supply Fed-Supplied</u>
17. 1019–97 <u>2004</u>	Vacuum Breaker Wall Hydrants, Freeze Resistant Automatic Draining Type
18. 1020–89 <u>2004</u>	Pressure Vacuum Breaker Assembly
<u>18m.</u> 1021–2001	<u>Drain Air Gaps for Domestic Dishwasher Applications</u>
18e. <u>19.</u> 1022–96 <u>2003</u>	Backflow Preventer for Carbonated Beverage <u>Dispensing Equipment Machines</u>
19. <u>20.</u> 1023–79 <u>1979</u>	Hot Water Dispensers, Household Storage Type, Electrical
20. 1025–78	Diverters for Plumbing Faucets with Hose Spray, Anti-Siphon Type, Residential Applications
21. <u>20.</u> 1035–95 <u>2002</u>	Laboratory Faucet Backflow Preventers
22. <u>21.</u> 1037–90 <u>1990</u>	Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures
23. <u>22.</u> 1047–99 <u>2005</u>	Reduced Pressure Detector <u>Fire Protection</u> Backflow Preventer <u>Prevention Assemblies</u>
24. <u>23.</u> 1048–99 <u>2005</u>	Double Check <u>Detector</u> Fire Protection Backflow Prevention Assemblies
24. 1052–94 <u>2004</u>	Hose Connection Backflow Preventers
25e. <u>25.</u> 1055–97 <u>1997</u>	Chemical Dispensing Systems
26. 1056–95 <u>2001</u>	<u>Spill Resistant Back-Siphonage</u> Vacuum Breakers
26e. 1066–97 <u>1997</u>	Individual Pressure Balancing In-Line Valves for Individual Fixture Fittings
<u>27.</u> 5013–2004 ^a	<u>Minimum Performance Requirements for Testing Reduced Pressure Principle Backflow Preventers (RP) and Reduced Pressure Principle Fire Protection Backflow Preventers (RPF)</u>
<u>28.</u> 5015–2004 ^a	<u>Minimum Performance Requirements for Testing Double Check Backflow Prevention Assemblies (DC) and Double Check Fire Protection Backflow Prevention Assemblies (DCF)</u>
<u>29.</u> 5020–2004 ^a	<u>Minimum Performance Requirements for Testing a Pressure Vacuum Breaker Assembly</u>
<u>30.</u> 5047–2004 ^a	<u>Minimum Performance Requirements for Testing Reduced Pressure Detector Fire Protection Backflow Prevention</u>

<u>31. 5048–2004^a</u>	<u>Assemblies (RPDF)</u> <u>Minimum Performance Requirements for Testing Double</u> <u>Check Detector Fire Protection Backflow Prevention</u> <u>Assemblies (DCDF)</u>
<u>32. 5056–2004^a</u>	<u>Minimum Performance Requirements for Testing Spill</u> <u>Resistant Vacuum Breaker</u>

^a Standard is contained in the ASSE 5000 Series of standards.

Table 81.20–5

American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, Pennsylvania 19428–2959
Phone: (610) 832–9585
Web page: www.astm.org

Standard Reference Number	Title
1. <u>A53–9702</u>	Pipe, Steel, Black and Hot–Dipped, Zinc-Coated Welded and Seamless, Standard Specification for
2. <u>A74–9606</u>	Cast Iron Soil Pipe and Fittings, Standard Specification for
3. <u>A123/A123M–97a02</u>	Zinc (Hot-Galvanized) Coatings on Products, Specification for
4. <u>A270–95a03a</u>	Seamless and Welded Austenitic Stainless Steel Sanitary Tubing, Specification for
5. <u>A377–95-03</u>	Ductile–Iron Pressure Pipe, Standard Index of Specifications for
6. <u>A403/A403M–97a07</u>	Wrought Austenitic Stainless Steel Piping Fittings, Specification for
7. <u>A450/A450M–9604a</u>	Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes
7e. <u>A888–9807a</u>	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Pipe Applications, Specifications for
8. <u>B32–9604</u>	Solder Metal
9. <u>B42–9 02^{E1}</u>	Pipe, Seamless Copper, Standard Sizes
10. <u>B43–9698</u>	Seamless Red Brass Pipe, Standard Sizes, Specification for
11. <u>B88/B88M–9603</u>	Water , Seamless, Copper <u>Water</u> Tube, Specification for
11m. <u>B88M–05</u>	<u>Seamless Copper Water Tube (Metric)</u> , Specification for
12. <u>B152/B152M–97a06a</u>	Copper Sheet, Strip, Plate, and Rolled Bar, Specification for
13. <u>B251/B251M–9702^{E1}</u>	Tube, Wrought Seamless Copper and Copper
14. <u>B302–9702</u>	Threadless Copper Pipe, Specification for
15. <u>B306–9602</u>	Standard Specifications for Copper Drainage Tube (DWV), <u>Standard Specifications for</u>
15s. <u>15m. B828–9802</u>	Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings, Practice for
17. <u>16. C14/C14M–9507</u>	<u>Nonreinforced</u> Concrete Sewer, Storm Drain, and Culvert Pipe,

17. C14M-9507 Specification for
Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
(Metric), Specification for
18. C33-9703 Concrete Aggregates, Specification for
19. C76-9807 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe,
~~Reinforced Concrete~~ Specification for
20. C76M-9707 Reinforced Concrete Culvert, Storm Drain, and ~~Culvert~~ Sewer
Pipe (Metric), Specifications for
21. C425-9704 Compression Joints for Vitrified Clay Pipe and Fittings for
~~Vitrified Compression Joints~~, Specification for
22. C443/C443M-9407 Specification for Joints for Circular Concrete Sewer and
Culvert Pipe, Using Rubber Gaskets
- 22e. C443M-07 Specification for Joints for Circular Concrete Sewer and
Culvert Pipe, Using Rubber Gaskets (Metric)
- 22e. 22m. C507/C507M-95a Reinforced Concrete Elliptical Culvert, Storm Drain and
07 Sewer, (Metric) Specifications for
23. C564-9703a Rubber Gaskets for Cast Iron Soil Pipe and Fittings,
Specification for
24. C700-9707 Vitrified Clay Pipe, Extra Strength, Standard Strength, and
Perforated, Specification for
- 24e. C877/C877M-94 External Sealing Bands for ~~Noncircular Concrete Sewer, Storm~~
02^E ~~Drain, and Culvert Pipe, Manholes and Precast Box~~
Sections, (Metric), Standard Specifications for
- 24h. C923-9807 Resilient Connectors Between Reinforced Concrete Manhole
Structures, Pipes, and Laterals, Specification for
- 24m. C990/C990M-96 Joints for Concrete Pipe, Manholes, Precast Box Sections Using
06 Preformed Flexible Joint Sealants, Specifications for
- 24s. C1306-9505a Hydrostatic Pressure Resistance of a Liquid-Applied
Waterproofing Membrane, Standard Test Method for
25. D1527-96a99 (R 2005) Acrylonitrile-Butadiene-Styrene (ABS), Schedules 40 and 80
26. D1785-96b06 Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and
120, Specification for
27. D2104-9603 Standard Specifications for Polyethylene (PE) Plastic Pipe,
Schedule 40
28. D2235-96a04 Standard Specifications for Solvent Cement for Acrylonitrile-
Butadiene-Styrene (ABS) Plastic Pipe and Fittings
29. D2239-96a03 Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled
Inside Diameter, Specification for
30. D2241-96b05 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic
Pipe (SDR - Series)
31. D2282-96a99 (R 2005) Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe (SDR -
PR), Specification for
32. D2321-8905 Underground Installation of Thermoplastic Pipe for Sewers and
Other Gravity-Flow Applications, Practice for
33. D2447-9503 Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on
Outside Diameter, Specification for

34. ~~D2464-96a~~06 Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80, Specification for
35. ~~D2466-97~~06 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40, Specification for
36. ~~D2467-96a~~06 ~~Socket-Type~~ Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80, Specification for
37. ~~D2468-96a~~ Acrylonitrile-Butadiene-Styrene (ABS), Plastic Pipe Fittings, Schedule 40, Specification for
38. ~~D2564-96a~~04^{E1} Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Systems, Specification for
39. ~~D2609-97~~02 Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe, Specification for
40. ~~D2657-97~~07 Heat Fusion Joining of Polyolefin Pipe and Fittings, Standard Practice of
41. ~~D2661-97a~~06 Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings, Specification for
42. ~~D2662-96a~~ Polybutylene (PB) Plastic Pipe (SDR-PR), Based on Controlled Inside Diameter, Specification for
43. ~~D2665-97a~~07 Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings, Specification for
46. ~~D2680-95a~~01 Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping, Specification for
47. ~~D2683-98~~04 Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing, Specification for
48. ~~D2729-96a~~03 Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, Specification for
49. ~~D2737-96a~~03 Polyethylene (PE) Plastic Tubing, Specification for
50. ~~D2751-96a~~05 Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings, Specification for
51. ~~D2774-94~~04 Underground Installation of Thermoplastic Pressure Piping, Standard Practice for
52. ~~D2846/D2846M-97~~06 Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems, Specification for
53. ~~D2852-95~~ Styrene-Rubber (SR) Plastic Drain Pipe and Fittings, Specification for
54. ~~D2855-96~~ Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings, Practice for
55. ~~D3000-95a~~ Polybutylene (PB) Plastic Pipe (SDR-PR) Based on Outside Diameter, Specification for
56. ~~55.~~ D3034-9706 Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, Specification for
57. ~~56.~~ D3035-9506 Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter, Specification for
- 57s. 57. D3138-9504 Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non-Pressure Piping Components, Specifications for

58. D3139-96a	Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals, Specification for
59. D3140-90	Flaring Polyolefin Pipe and Tubing, Practice for
60. <u>D3212-96a (R 2003)</u>	Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals, Specification for
61. <u>D3261-9703</u>	Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing, Specification for
62. D3309-96a <u>(R 2002)</u>	Polybutylene (PB) Plastic Hot and Cold Water Distribution Systems, Specification for
63. <u>62.</u> D3311-9406a	Drain, Waste, and Vent (DWV) Plastic Fittings Patterns, Specification for
64. <u>63.</u> D4068-9601	Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane, Standard Test Method for
65. <u>64.</u> D4491-89 <u>99a (R 2004)</u>	Water Permeability of Geotextile by Permittivity, Standard Test Method for
66. <u>65.</u> D4533-9404	Trapezoid Tearing Strength of Geotextiles, Standard Test Method for
67. <u>66.</u> D4632-91 (R 2003)	Grab Breaking Load and Elongation of Geotextiles, Standard Test Method for
68. <u>67.</u> D4751-8704	Determining the Apparent Opening Size of a Geotextile, Standard Test Method for
69. <u>68.</u> D4833-8800 ^{EI}	Index Puncture Resistance of Geotextile, Geomembranes, and Related Products, Standard Test Methods for
70. <u>69.</u> F402-9305	Safe Handling of Solvent Cements, Primers and Cleaners Used for Joining Thermoplastic Pipe and Fittings, Practice for
71. <u>70.</u> F405-9705	Corrugated Polyethylene (PE) Tubing and Fittings, Specification for
72. <u>71.</u> F409-9702	Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings, Specification for
73. <u>72.</u> F437-96a06	Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80, Specification for
74. <u>73.</u> F438-9704	Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40, Specification for
75. <u>74.</u> F439-9706	Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80, Specification for
76. <u>75.</u> F441/F441M-9702	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80, Specification for
77. <u>76.</u> F442/F442M-9799 (R 2005)	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR), Specification for
78. <u>77.</u> F477-96a07	Elastomeric Seals (Gaskets) for Joining Plastic Pipe, Specification for
78e. <u>78.</u> F492-9596	Propylene and Polypropylene (PP) Plastic-Lined Ferrous Metal Pipe Fittings
79. <u>F493-9704</u>	Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings, Specification for
80. <u>F628-97a06</u> ^{EI}	Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic

	Drain, Waste, and Vent Pipe with a Cellular Core, Specification for
81. F656-96a02	Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings, Specification for
81e. F679-9506a	Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
81m. F789-95a	Type PS-46 and Type PS-115 PVC Poly(Vinyl Chloride)(PVC)Plastic Gravity Flow Sewer Pipe and Fittings
81s. F794-9703	Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
82. F810-9307	Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields, Specification for
83. F845-96	Plastic Insert Fittings for Polybutylene (PB) Tubing, Specification for
84. F876-9706	Crosslinked Polyethylene (PEX) Tubing, Specification for
85. F877-97a07	Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems, Specification for
86. F891-9704	Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe With a Cellular Core, Specification for
87. F949-96a06a	Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
88. F1281-9807	Crosslinked Polyethylene / Aluminum / Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe
89. F1282-9706	Polyethylene / Aluminum / Polyethylene (PE-AL-PE) Composite Pressure Pipe
90. F1336-9307	Poly (Vinyl Chloride) (PVC) Gasketed Sewer Fittings
91. F1807-98A07	Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing
92. F1866-9807	Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings, Specifications for

Table 81.20-6

AWS	American Welding Society 550 N.W. LeJune Road Miami, Florida 33126 Phone: 800-443-9353 Web page: www.aws.org/w/a
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Standard Reference Number	Title
AWS.A5.8-92 AWS.A5.8M 2004	Filler Metals for Braze and Braze Welding, Specification for

Table 81.20-7

AWWA	American Water Works Association Data Processing Department 6666 West Quincy Avenue Denver, Colorado 80235 <u>Phone: 303-794-7711</u> <u>Web page: www.awwa.org</u>
Standard Reference Number	Title
1. <u>C110/A21.10-9503</u>	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3 in. through 48 in., for Water and Other Liquids
2. <u>C111/A21.11-9507</u>	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
3. <u>C115/A21.15-9405</u>	American National Standard for Flanged Ductile-Iron Pipe with Ductile-Type Iron or Gray-Iron Pipe Threaded Flanges
4. <u>C151/A21.51-962002</u>	American National Standard for Ductile Iron, Centrifugally Cast for Water <u>Ductile-Iron Pipe, Centrifugally Cast, for Water</u>
5. <u>C153/A21.53-9406</u>	American National Standard for Ductile-Iron Compact Fittings, 3 in. through 16 in., for Water and Other Liquids
5e. <u>C651-92 2005</u>	Water Mains, Disinfecting
6. <u>C700-9502</u>	Cold Water Meters – Displacement Type with Bronze Main Case (w/ 1991 Addendum)
7. <u>C701-8807</u>	Cold Water Meters – Turbine Type for Customer Service
8. <u>C702-9201</u>	Cold Water Meters – Compound Type
9. <u>C704-9202</u>	Cold Water Meters – Propeller Type for Main Line Applications
10. <u>C706-96(R 05)</u>	Cold Water Meters, Direct-Reading, Remote-Registration Systems for
11. <u>C707-82(R92)05</u>	Cold Water Meters, Encoder-Type, Remote-Registration Systems for
12. <u>C708-9605</u>	Cold Water Meters – Multi-Jet Type
13. <u>C710-952002</u>	Cold Water Meters, Displacement Type – Plastic Main Case (w/1991 Addendum)
14. <u>C900-892007</u>	American Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. through 12 in., for Water Distribution (w/1992 Addendum) <u>Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings 4-inch to 12-inch (100mm Through 300mm) for Water Transmission and Distribution.</u>
15. <u>C906-9007</u>	Polyethylene Pressure Pipe and Fittings, 4 in. through 63 in., for Water Distribution

Table 81.20-7e

CAN/CSA	Canadian Standards Association 178 Rexdale Boulevard Rexdale (Toronto), Ontario, Canada M9W 1R3 <u>Phone: 800-463-6727</u> <u>Web page: www.csa.ca</u>
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Standard Reference Number	Title
<u>1. B64-94.1.1-07</u>	<u>Atmospheric Vacuum Breakers</u>
<u>2. B64.1.2-07</u>	<u>Pressure Vacuum Breakers</u>
<u>3. B64.1.3-07</u>	<u>Spill Resistant Vacuum Breakers</u>
<u>4. B64.2-07</u>	<u>Hose Connection Vacuum Breakers</u>
<u>5. B64.2.2-07</u>	<u>Hose Connection Vacuum Breakers with Automatic Draining Feature</u>
<u>6. B64.3-07</u>	<u>Dual Check Valve Backflow Preventers with Atmospheric Port</u>
<u>7. B64.3.1-07</u>	<u>Dual Check Valve Backflow Preventers with Atmospheric Port for Carbonators</u>
<u>8. B64.4-07</u>	<u>Reduced Pressure Principle Backflow Preventers</u>
<u>9. B64.4.1-07</u>	<u>Reduced Pressure Principle Backflow Preventers for Fire Protection Systems</u>
<u>10. B64.5-07</u>	<u>Double Check Valve Backflow Preventers</u>
<u>11. B64.5.1-07</u>	<u>Double Check Valve Backflow Preventers for Fire Protection Systems</u>
<u>12. B64.7-07</u>	<u>Laboratory Faucet Vacuum Breakers</u>
<u>13. CSA B125.1-05</u>	<u>Plumbing Supply Fittings</u>
2. <u>14. B125-93.3-05</u>	<u>Plumbing Fittings</u>
<u>14e. B125.3-05</u>	<u>Plumbing Fittings – Update No. 1 November 2006</u>
<u>14m. B125.3-05</u>	<u>Plumbing Fittings – Update No. 2 November 2007</u>
3. <u>15. B137.9-98</u>	<u>Polyethylene / Aluminum / Polyethylene Composite Pressure Pipe Systems</u>
4. <u>16. B137.10-98</u>	<u>Crosslinked Polyethylene /Aluminum / Crosslinked Polyethylene Composite Pressure Pipe Systems</u>
5. <u>17. B181.1-9606</u>	<u>Acrylonitrile-butadiene-styrene (ABS) Drain, Waste, and Vent Pipe and Pipe Fittings</u>
6. <u>19. B181.2-9606</u>	<u>Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) Drain, Waste, and Vent Pipe and Pipe Fittings</u>

Table 81.20–8

CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Road, Suite 419 Chattanooga, Tennessee 37421 <u>Phone: 423-892-0137</u> <u>Web page: www.cispi.org</u>
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Standard Reference Number	Title
1. 301– <u>972005</u>	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications, Standard Specification for
2. 310– <u>9704</u>	Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications, Specification for

Table 81.20–9

FMRC	Factory Mutual Research Corp. 1151 Boston–Providence Turnpike Norwood, Massachusetts 02062 <u>Phone: 800-320-6808</u> <u>Web page: www.fmglobal.com</u>
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Standard Reference Number	Title
1680	Couplings used in Hubless Cast Iron Systems for Drain, Waste or Vent, Sewer, Rainwater or Storm Drain Systems Above and Below Ground, Industrial/Commercial and Residential, January 1989

SECTION 22. Table 81.20–10 is repealed.

SECTION 23. Table 81.20–10m is renumbered Table 81.20–10 and amended to read:

Table 81.20–10

NFPA	National Fire Protection Association 11 Tracy Drive Avon, MA 02322–9908 Phone: 617-770-3000 Web page: www.nfpa.org
Standard Reference Number	Title
1. NFPA 13D–2002 <u>2006</u>	Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, <u>Standard for the</u>
2. NFPA 24–2002 <u>2007</u>	<u>Standard for the</u> Installation of Private Fire Service Mains and Their Appurtenances, <u>Standard for the</u>

SECTION 24. Tables 81.20–11 to 81.20–13 are amended to read:

Table 81.20–11

NSF	NSF International 789 Dixboro Road P.O. Box 130140 Ann Arbor, Michigan 48113–0140 Phone: (800) 673–6275 Web page: www.nsf.org
Standard Reference Number	Title
1. Standard 14–99 <u>2007</u>	Plastic Piping Compounds and Related Materials <u>Plastics Piping System Components and Related Materials</u>
2. Standard 40–99 <u>2005</u>	Residential Wastewater Treatment Systems
3. Standard 41–98 <u>2005</u>	Non-Liquid Non-liquid Saturated Treatment Systems
3m. Standard 41-2005 Addendum 1	<u>Non-liquid Saturated Treatment Systems</u>
4. Standard 44–98 <u>2004</u>	Residential Cation Exchange Water Softeners
5. Standard 51–1997 <u>2007</u>	Food Equipment Materials
6. Standard 61–2001 <u>2007</u>	Drinking Water System Components Health Effects

Table 81.20–12

STI	Steel Tank Institute 570 Oakwood Road Lake Zurich, Illinois 60047 <u>Phone: 617-770-3000</u> <u>Web page: www.steeltank.com</u>
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Standard Reference Number	Title
STI-P3	External Corrosion Protection of Underground Steel Storage Tanks, Specifications and Manual for, 1996 edition

Table 81.20–13

UL	Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, Illinois 60062 <u>Phone: 847-272-8800</u> <u>Web page: www.ul.com</u>
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Standard Reference Number	Title
1. Standard 58–86 <u>1996</u>	Steel Underground Tanks for Flammable and Combustible Liquids – Ninth Edition
2. Standard 1746–89 <u>2007</u>	External Corrosion Protection Systems for Steel Underground Storage Tanks – Third Edition

SECTION 25. Comm 82.20 (1) (c) (intro.), (4) (b) 2. and (13) (e) are amended to read:

Comm 82.20 (1) (c) *Cross connection control assembly registration.* The initial installation of each reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, ~~back siphonage backflow spill resistant~~ vacuum breaker, reduced pressure detector backflow presenter, reduced pressure fire detector fire protection backflow prevention assembly or pressure vacuum breaker, shall meet all of the following:

(4) (b) 2. Plans proposing the installation, creation or extension of ~~private sanitary building sewer or a sanitary private interceptor main sewer~~ which is to discharge to a municipal treatment facility shall:

(13) (e) Upon permanent removal or replacement of any reduced pressure principle backflow preventer, ~~back siphonage backflow spill resistant~~ vacuum breaker, reduced pressure detector backflow preventer, reduced pressure fire protection principle backflow preventer or pressure vacuum breaker, the owner shall notify the department in writing using a format acceptable to the department.

SECTION 26. Comm 82.20 Table 82.20–2 line 6. and footnote a are amended to read:

**Table 82.20–2
(Partial Table)**

SUBMITTALS TO DEPARTMENT OR AGENT MUNICIPALITY

Type of Plumbing Installation

6. Water supply systems and drain systems to be installed for ~~mobile home parks~~ manufactured home communities and campgrounds.^c

^a Water heaters, floor drains, storm inlets, roof drains and hose bibs are to be counted as plumbing fixtures. For a phased project such as a mall or office complex fixture count includes all fixtures connected to a common building sanitary sewer, a common water service and all storm sewers serving the building.

SECTION 27. Comm 82.21, title is amended to read:

Comm 82.21 Testing and ~~maintenance~~ inspection.

SECTION 28. Comm 82.21 (1) (intro.) is amended to read:

Comm 82.21 (1) TESTING OF PLUMBING SYSTEMS. Except as provided in par. (a), all new plumbing and all parts of existing systems which have been altered, extended or repaired shall be tested as specified in ~~(4)~~ (2) to disclose leaks and defects before the plumbing is put into operation.

SECTION 29. Comm 82.21 (b) 1. b. is repealed and recreated to read:

Comm 82.21 (1) (b) 1. b. Testing may be done without the presence of the inspector, if the master plumber responsible for the installation obtains the inspector’s permission to provide a written test report in a format acceptable to the inspector.

Note: See the appendix for a sample affidavit form.

SECTION 30. Comm 82.21 (2) is repealed.

SECTION 31. Comm 82.21 (1) (d) is renumbered 82.21 (2).

SECTION 32. Comm 82.21 (3) is renumbered 82.22 (9).

SECTION 33. Comm 82.21 Table 82.21–1 is repealed.

SECTION 34. Comm 82.22 is created to read:

Comm 82.22 Maintenance and repairs. (1) GENERAL. (a) All plumbing systems, both existing and new, and all parts thereof, shall be maintained in a safe and sanitary condition.

(b) All devices or safeguards that are required by this chapter shall be maintained in good working order.

(c) The owner shall be responsible for the maintenance of plumbing systems.

(2) EXISTING SYSTEMS. (a) Except as specified in par (b), any existing plumbing system shall be permitted to remain and maintenance continue if the maintenance is in accordance with the original system design and any of the following:

1. The plumbing system was installed in accordance with the code in effect at the time of installation.

2. The plumbing system conforms to the present code.

(b) When a hazard to life, health or property exists or is created by an existing system, that system shall be repaired or replaced.

Note: A cross connection is considered a health hazard by the department.

(c) Existing sewers and water services may only be connected to new buildings when determined by examination and test to conform to the requirements of this chapter.

(3) FIXTURES REPLACED. 1. When a fixture, appliance or section of pipe is replaced, the replacement fixture, appliance or pipe shall conform to the provisions of this chapter.

2. Where the existing drain or vent piping does not conform to the current provisions of this chapter, the department may require the new fixtures to be provided with deep seal traps.

(4) PLUMBING REUSED. (a) 1. Except as provided in par. (b) plumbing materials, fixtures or devices removed and found to be in good condition may be reused if such reuse is approved by the department or a local plumbing inspector.

2. The owner of the building or facility in which the reused materials are to be installed shall provide written consent.

(b) Water supply piping materials may only be reused when the intended use involves an equal or higher degree of hazard than the previous use as specified in Table 82.70-1.

(5) REPAIRS. All repairs to fixtures, devices or piping shall be completed in conformance with the provisions of this chapter, except repair clamps or bands may be used for emergency situations.

(6) DEMOLITION OF STRUCTURES. When a structure is demolished or removed, all sanitary sewer, storm sewer and water supply connections shall be sealed and plugged in a safe manner.

(7) DEAD ENDS. If a dead end is created in the removal of any part of a drain system, all openings in the drain system shall be properly sealed.

(8) TESTING OF CROSS CONNECTION CONTROL ASSEMBLIES.(a) The performance testing requirements of this subsection apply to all cross connection control assemblies regardless of date of installation.

Note: For further clarification see Table 82.22-1.

(b) 1. A performance test shall be conducted for the assemblies listed in Table 82.22-1 at all of the following intervals:

- a. At the time of installation.
- b. Immediately after repairs or alterations to the assembly have occurred.
- c. At least annually.

2. The performance test shall be conducted using the appropriate test standard for the assembly as specified in Table 82.22-1.

3. A cross connection assembly performance test shall be conducted by an individual registered by the department in accordance with s. Comm 5.99.

4. a. The results of the cross connection control assembly performance test shall be submitted as specified in Table 82.22-1 in a format prescribed by the department.

b. As specified in Table 82.22-1, the results of the cross connection assembly performance test shall be submitted to the department and purveyor within 60 days of completion of the test.

5. The results of performance tests for the assemblies listed in Table 82.22-1 shall be made available upon request to the department, its agent or the local government unit.

SECTION 35. Comm 82.22 Table 82.22–1 is created to read:

**Table 82.22–1
TESTING AND SUBMITTING REQUIREMENTS FOR CROSS CONNECTION
CONTROL ASSEMBLIES**

ASSE Standard Name and Number	CAN/CSA Standard Name and Number	ASSE Test Standard Number and Test Required	Test Results to be Submitted to Department and Purveyor
Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies ASSE 1015	Double Check Valve Backflow Preventers and Double Check Valve Backflow Preventers For Fire Protection Systems CAN/CSA-B64.5.1	5015	No
Double Check Detector Fire Protection Backflow Prevention Assemblies ASSE 1048	-----	5048	No
Pressure Vacuum Breaker Assembly ASSE 1020	Pressure Vacuum Breakers CAN/CSA-B64.1.2	5020	Yes
Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers ASSE 1013	Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Backflow Preventers For Fire Protection Systems CAN/CSA-B64.4	5013	Yes
Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies ASSE 1047	-----	5047	Yes
Spill Resistant Vacuum Breaker ASSE 1056	Spill Resistant Vacuum Breakers CAN/CSA B64.1.3	5056	Yes

SECTION 36. Comm 82.30 (3) is amended to read:

Comm 82.30 (3) LOAD ON DRAIN PIPING. (a) *Intermittent flow fixtures.* 1. ‘Fixtures.’ The load factor on drain piping shall be computed in terms of the drainage fixture unit values specified in Table 82.30–1 for the corresponding listed fixture ~~listed~~.

2. ‘Devices.’ Drainage fixtures unit values for intermittent flow ~~fixtures~~–devices not listed in Table 82.30–1 shall be computed on the basis of one fixture unit equaling 7.5 gallons one gallon per minute of flow.

Note: Pumping equipment that does not discharge continuously is considered an intermittent flow device.

(b) *Continuous flow devices.* Drainage fixtures unit values for continuous or ~~semi-continuous~~ flow devices such as pumps, ejectors, air conditioning equipment or similar devices that discharge continuously shall be computed on the basis of ~~one~~ 2 fixture unit units for each ~~2-gallons~~ one gallon per minute of flow rate of discharge into the drain system.

SECTION 37. Comm 82.30 (4) (b) is repealed.

SECTION 38. Comm 82.30 (4) (c) to (e) is renumbered 82.30 (4) (b) to (d).

SECTION 39. Comm 82.30 Table 82.30-1 (partial) and Table 82.30-3 (partial) are amended to read:

**TABLE 82.30-1
(Partial Table)
DRAINAGE FIXTURE UNITS VALUES BY FIXTURE TYPE**

Type of Fixture	Drainage Fixture Unit Value (dfu)	Trap Size Mini-Mum Diameter (inches)
<u>Appliance emergency drain pan</u>	<u>0</u>	<u>1</u>
Automatic Clothes Washer:		
Self Service Laundry	<u>34</u>	<u>1½ 2</u>
Residential	<u>34</u>	<u>1½ 2</u>
<u>Mobile home</u> <u>Manufactured home</u>	<u>11</u>	<u>NA</u>

**Table 82.30-3
(Partial Table)
BUILDING DRAINS, BUILDING SUBDRAINS, BUILDING SEWERS AND
PRIVATE INTERCEPTOR MAIN SEWERS^a**

Pipe diameter (Inches)	Maximum Number of Drainage Fixture Units Which May Drain Through Any Portion of a Building Drain, Building Subdrain, Building Sewer or Private Interceptor Main Sewer			
	Pitch (inch per foot)			
	<u>1/16</u>	<u>1/8</u>	<u>1/4</u>	<u>1/2</u>
<u>1¼</u>	<u>NP^b</u>	<u>NP</u>	<u>1</u>	<u>1</u>
<u>1½</u>	<u>NP</u>	<u>NP</u>	<u>2</u>	<u>3</u>
<u>2</u>	<u>NP^b</u>	<u>NP</u>	<u>6</u>	<u>9</u>

SECTION 40. Comm 82.30 (6) (a) 1. is renumbered 82.30 (6) (a).

SECTION 41. Comm 82.30 (6) (a) 2. and (b) 5. are repealed.

SECTION 42. Comm 82.30 (10) (a) 1. is amended to read:

Comm 82.30 (10) (a) 1. 'General.' All sanitary building subdrains shall discharge into an approved, vented sump with an airtight cover. The sump shall be so located as to receive the sewage wastewater by gravity flow, and shall be located at least 25 feet from any water well or as otherwise approved by the department of natural resources.

SECTION 43. Comm 82.30 (10) (a) 2. b. is repealed.

SECTION 44. Comm 82.30 (10) (a) 2. c. to e. are renumbered 82.30 (10) (a) 2. b. to d.

SECTION 45. Comm 82.30 (11) (e) 2. and 3. are repealed and recreated to read:

82.30 (11) (e) 2. 'Stable bottom.' Where the bottom of the trench can be maintained in a stable condition during the time of installation the building drain and the building sewer shall be bedded and initially backfilled to comply with all the following requirements:

a. Where the existing soil is sand or coarser than sand or gravel $\frac{3}{4}$ inch in diameter or less, the trench bottom may serve as sufficient bedding.

b. Where the existing soil is finer than sand, the trench bottom shall be excavated to a depth at least 3 inches below the pipe and brought back to grade with sand or gravel $\frac{3}{4}$ inch in diameter or less.

c. Bedding shall be sufficiently dry and hand or mechanically compacted to a minimum of 90 percent Standard Proctor Density.

d. Initial backfill to a depth of 12 inches over the pipe shall be sand, crushed stone or excavated material which is neither corrosive nor organic in nature.

e. Initial backfill shall be of a size that passes a one-inch sieve.

f. A concrete floor may be placed over a building drain having less than 12 inches of initial backfill.

g. Initial backfill shall be placed in increments not to exceed 6 inches in depth.

h. Initial backfill shall be well tamped for the full width of the trench and length of the sewer.

3. 'Unstable bottom.' Where a mucky or unstable bottom is encountered in the trench, the required dry and stable foundation conditions shall be provided by providing one of the following options:

a. Sheathing shall be driven and left in place to a depth of 48 inches below the trench bottom or to solid foundation to a lesser depth.

b. Removal of wet and yielding material to a depth of 24 inches or to solid material and replacement of the unstable material with limestone screenings, pea gravel or equivalent material.

c. Install a longitudinally reinforced concrete cradle the width of the trench and at least 3 inches thick.

d. Install a longitudinally reinforced concrete slab the width of the trench and at least 3 inches thick.

e. Backfill and bedding shall comply with subd. 2. d. to h.

SECTION 46. Comm 82.30 (11) (f) 2. is repealed and recreated to read:

Comm 82.30 (11) (f) 2. 'Pressurized public sewer.' Where a forced building sewer discharges to a pressurized public sewer all of the following requirements shall apply:

a. A curb stop shall be installed on the same property as close as possible to connection to the common forced main sewer.

b. A check valve shall be installed in the pressurized building drain or building sewer.

c. An accessible quick disconnect shall be installed upstream of the check valve.

SECTION 47. Comm 82.30 (11) (h) 1. g. to i. are renumbered 82.30 (11) (h) 1. h. to j.

SECTION 48. Comm 82.30 (11) (h) 1. g. is created to read:

82.30 (11) (h) 1. g. Where tracer wire is more than 6 inches from the pipe, tracer wire insulation color shall comply with sub. 1. h.

SECTION 49. Comm 82.31 (4) (a) is amended to read:

Comm 82.31 (4) (a) *Where required.* Where individual vents, relief vents, or other branch vents are required, a vent stack and a stack vents shall be installed to serve all drain stacks of 2-5 or more branch intervals.

SECTION 50. Comm 82.31 (5) is repealed and recreated to read:

Comm 82.31 (5) (a) *Vents serving horizontal offsets in drainage stacks.* Horizontal offsets in drainage stacks shall be vented where five or more branch intervals are located above the offset. The offset shall be vented by venting the upper section of the drainage stack and the lower section of the drainage stack.

(b) *Upper section.* The upper section of the drainage stack shall be vented as a separate stack with a vent stack connection installed in accordance with par. (c). The offset shall be considered the base of the stack.

(c) *Vent connection above offset.* The vent stack shall connect with a wye pattern fitting above the stack offset and at or below the lowest drain branch above the offset.

(d) *Lower section.* The lower section of the drainage stack shall be vented by a yoke vent connecting between the offset and the next lower horizontal branch. The yoke vent connection shall be permitted to be a vertical extension of the drainage stack. The size of the yoke vent and connection shall be a minimum of the size required for the vent stack of the drainage stack.

SECTION 51. Comm 82.31 (10) (c), (13) 1. e., (14) (g) 2. and (17) (a) 1. e. are amended to read:

Comm 82.31 (10) (c) A horizontal drain served by a circuit vent ~~shall~~ may not diminish in size from the ~~connection to the drain stack~~ most downstream fixture drain connection vented by the circuit vented drain to the circuit vent connection. Where a relief vent is installed, the horizontal drain served by the circuit vent shall not diminish in size from the relief vent connection to the circuit vent connection.

(13) (a) 1. e. The higher fixture drain may not serve a water closet ~~or urinal~~.

(14) (g) 2. 'Drain stacks.' A relief vent serving an offset in a drain stack shall be sized as a stack vent in accordance with par. (a).

(17) (a) 1.e. The drain stack and its attendant ~~stack~~ vent shall be sized in accordance with Table 82.31-5.

SECTION 52. Comm 82.31(17) (a) 1. f. is repealed.

SECTION 53. Comm 82.31 (17) (b) 1. and 3. a. are amended to read:

Comm 82.31 (17) (b) 1. A vent ~~stack~~ or drain stack at least 2 inches in diameter shall be connected upstream of any building drain branch or building subdrain branch.

3. a. That portion of the building drain or building subdrain between the connection of the building drain branch or building subdrain branch and the vent ~~stack~~ or drain stack required in subd. 3. shall be at least one pipe size larger than the minimum size permitted in Table 82.30-3 based on the total drainage fixture unit load-, but not less than 3 inches.

b. The vent ~~stack~~ or drain stack required in subd. 1. shall be at least one-half the diameter of that portion of the building drain or building subdrain which is vented by the vent or drain stack, but may not be less than 2² inches in diameter.

c. A ~~stack~~-vent serving a drain stack required in subd. 1, shall be at least one half the diameter of that portion of the building drain or building subdrain which is vented by the stack, but may not be less than 2² inches in diameter.

SECTION 54. Comm 82.32 (4) (b) 2. c. is created to read:

82.32 (4) (b) 2. c. The minimum horizontal distance between the vertical centerline of the outlet from a floor-mounted water closet and a 3 inches double tee shall be 30 inches.

SECTION 55. Comm 82.33 (7) (a) is repealed and recreated to read:

Comm 82.33 (7) (a) *Air-gap installation.* The installation of an air-gap shall conform to any of the requirements listed in subds. 1. to 3.

1. The distance of an air-gap shall comply with one of the following:

a. The distance of an air-gap serving indirect waste piping one inch or less in diameter and a receptor shall be at least twice the diameter of the indirect waste piping.

b. The distance of an air-gap between indirect waste piping larger than one inch in diameter and a receptor shall not be less than 2 inches.

2. The installation of a manufactured air-gap shall comply with ASME A112.1.3.

3. The installation of a residential dishwashing machine drain shall comply with ASSE 1021.

SECTION 56. Comm 82.33 (8) (d) 6. and 7. are created to read:

Comm 82.33 (8) (d) 6. The indirect or local waste piping serving a water heater temperature and pressure relief valve or water treatment device may discharge through the cover of a clear water sump so as not to adversely affect floats by means of a fixed air gap installed in accordance with subs. (7) (a) 2 and (8).

7. The indirect waste piping serving a dental mold grinder may discharge into the riser or a trap serving a laboratory sink that is provided with a plaster trap and is installed within 3 feet of the mold grinder.

SECTION 57. Comm 82.33 (9) (c) 1. a. and b. are amended to read:

Comm 82.33 (9) (c) 1 a. A standpipe may not extend more than 36²² inches nor less than 18²² inches above the ~~top of the trap weir~~ centerline of the trap outlet.

b. A ~~1½ inch diameter~~ standpipe ~~receptor~~ shall terminate at least 26²² inches but not more than 48²² inches above the floor on which the clothes washer is located.

SECTION 58. Comm 82.33 (9) (c) 1. c. is repealed.

SECTION 59. Comm 82.33 (9) (f) 1. is amended to read:

Comm 82.33 (9) (f) 1. All drains serving elevator pits shall discharge to the storm drain system as specified in s. Comm 82.36 ~~(3)~~(4).

SECTION 60. Comm 82.34 (3) (a) 1. is amended to read:

Comm 82.34 (3) (a) 1. Except as provided in subd. 2., wastewater discharged from water closets or urinals shall not be reused for drinking water ~~or treated for reuse~~.

SECTION 61. Comm 82.34 (4) (b) 2. is repealed and recreated to read:

82.34 (4) (b) 2. a. Except as permitted in subd. 2. b., catch basins serving garages for one- and 2-family dwellings shall be designed and installed in accordance with par. (a) 2.

b. The minimum inside diameter of a catch basin serving garage for one- and 2-family dwelling shall be 18 inches.

SECTION 62. Comm 82.34 (5) (intro.) and (a) are amended to read:

Comm 82.34 (5) GREASE INTERCEPTORS AND OIL TREATMENT. (a) All plumbing installations for occupancies, other than dwelling units where grease, fats, oils or similar waste products of cooking or food are introduced into the drain system shall be provided with ~~interceptors~~ grease and oil treatment in accordance with this subsection.

(b) *General.* 1. 'Public sewers.' All new, altered or remodeled plumbing systems which discharge to public sewers shall be provided with one or more ~~exterior grease interceptors or one or more interior~~ grease interceptors.

a. Where one or more exterior grease interceptors are provided all and only kitchen wastes shall be discharged to an exterior interceptor.

b. ~~Where~~ Except as required in subd. 1. c. or d., where one or more interior grease interceptors are provided the wastes from a food waste grinder, ~~or~~ a sanitizing and rinse compartment of a sink ~~or both~~, may bypass the interceptor or interceptors.

c. The wash compartment of a three-compartment sink shall discharge through a grease interceptor.

d. The wash compartment and pre-wash compartment not discharging through a garbage disposal shall discharge through a grease interceptor.

2. 'Private onsite wastewater treatment systems.' All new, altered or remodeled plumbing systems, which discharge to private onsite wastewater treatment systems shall be provided with exterior grease interceptors.

a. Except as provided in subd. 2. b., only kitchen and food wastes shall be discharged to an exterior grease interceptor.

b. ~~Where approved by the department~~ For remodeling, when it is not practicable to separate kitchen and toilet wastes, combined kitchen wastes and toilet wastes may be discharged directly to a ~~septic~~ private onsite wastewater treatment component tank or tanks which conform to par. (b). The required capacity of a grease interceptor shall be added to the required septic tank capacity as specified in ch. Comm 83.

c. For holding tank installations, the combined kitchen and toilet wastes may discharge directly to a holding tank where the location accepting the pumpage from the tank provides written acceptance of the combined waste to the department.

3. 'Existing installations.' The department may require the installation of ~~either interior or exterior interceptors~~ any treatment device deemed necessary by the department for existing plumbing installations where the waterway of a drain system, sewer system or private onsite wastewater treatment system is reduced or filled due to ~~congealed~~ grease.

SECTION 63. Comm 82.34 (5) (c) 7. is created to read:

Comm 82.34 (5) (c) 7. A maximum of 12 inches of horizontal inlet pipe may be submerged.

SECTION 64. Comm 82.34 (14) (a) 2. is repealed and recreated to read:

Comm 82.34 (14) (a) 2. Dilution and neutralizing basins shall have the minimum retention capacities in accordance with one of the following requirements:

- a. The minimum retention capacity shall be as specified in Table 82.34.
- b. The minimum retention capacity shall be as per the manufacturer’s specifications.
- c. The minimum retention capacity for a quantity exceeding 150 sinks or for special uses or installations shall be approved by the department.

SECTION 65. Comm 82.35 (3) (a) is repealed and recreated to read:

82.35 (3) (a) Horizontal drains. All gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements:

- 1. The developed length of drain piping between cleanouts for above-ground piping may not exceed 75 feet.
- 2. The developed length of drain piping between cleanouts for below ground piping 2 inches or less in diameter may not exceed 40 feet.
- 3. The developed length of drain piping between cleanouts for below ground piping greater than 2 inches in diameter may not exceed 75 feet.

Note: See appendix for further explanatory material.

SECTION 66. Comm 82.35 Table 82.35 (partial) is amended to read:

**Table 82.35
(Partial Table)
CLEANOUT SIZES**

Diameter of Pipe Served By Cleanout (inches)	Minimum Diameter of Cleanout Extension (inches)	Minimum Diameter of Cleanout Opening (inches)
1 ¼	1 ¼	1 ¼
1 ½	1 ½	1 ½ 1 ¼

SECTION 67. Comm 82.35 (3) (b) 2. a. and b., (c) 2. a. and b. and (d) 2. b. and c. are amended to read:

Comm 82.35 (3) (b) 2. a. Every horizontal change in direction of more than 45° degrees ~~or more~~ where the change in direction is created within a distance of less than 10 feet;

b. Every change in pipe diameters where both connections are 8 inches or larger; and

(c) 2. a. Every horizontal change in direction of more than 45 degrees ~~or more~~ where the change in direction is created within a distance of less than 10 feet,

b. Every change in pipe diameter where both connections are 12 inches or larger, and

(d) 2. b. Every horizontal change in direction of more than 45 degrees ~~or more~~ where the change in direction is created within a distance of less than 10 feet,

c. Every change in pipe diameter where both connections are 6 inches or larger, and

SECTION 68. Comm 82.35 (5) (a) 1. is amended to read:

Comm 82.35 (5) (a) 1. All interior and exterior cleanouts where the vertical distance between the ~~centerline of the~~ horizontal drain pipe being served and the top of the cleanout opening exceeds 18” in length, shall connect to the drain piping through a fitting as specified in Table 82.30-4.

SECTION 69. Comm 82.36 (4) (b) 3. and (8) (a) 4. are amended to read:

Comm 82.36 (4) (b) 3. Stormwater gravity drains shall not be combined with clearwater drains prior to discharging to the storm building drain, ~~unless the clearwater drains are protected by a check valve or backwater valve~~ except where approved by the department.

(8) (a) 4. ‘Size’. Except as ~~recommended by the pump manufacturer~~ permitted under a. or b., the size of each sump shall be no smaller than 16²² inches in diameter at the top, 14²² inches in diameter at the bottom, and 22²² inches in depth.

a. The minimum sump diameter may be smaller than 16 inches when specified by the manufacturer for a combination sump and pump.

b. A sump located in an elevator pit may have a width or diameter of not less than 12 inches and a depth of not less than 12 inches.

SECTION 70. Comm 82.36 (11) is repealed and recreated to read:

Comm 82.36 (11) SECONDARY ROOF DRAINS (a) *Sizing*. When secondary roof drain systems are installed the secondary system shall be sized and installed in accordance with the requirements in this section.

(b) *Prohibited connection*. Secondary roof drain systems may not be connected to primary roof drain systems.

(c) *Discharge*. All secondary roof drain systems shall discharge in accordance with Table 82.38-1.

SECTION 71. Comm 82.37 (3) (b) 3. is amended to read:

Comm 82.37 (3) (b) 3. A campsite water supply riser shall terminate no less than ~~42~~²² 18 inches above finished grade.

SECTION 72. Comm 82.38 Table 82.38–1 lines 10 to 17 and footnote g and j are amended to read:

**Table 82.38–1
(Partial Table)**

ALLOWABLE DISCHARGE POINTS BY FIXTURE OR SPECIFIC USES

Use or Fixture	Allowable Discharge Points					
	POWTS ^a	Municipal Sanitary Sewer	Municipal Storm Sewer	Ground Surface	Combined Sanitary-Storm Sewer	Subsurface Dispersal ⁱ
<u>10. Residential living unit air conditioner condensate</u>	<u>X</u>	<u>X</u>	<u>X^c</u>	<u>X^b</u>	<u>X</u>	<u>X</u>
10. <u>11. Storm water, groundwater, fire sprinkler test discharge and clear water</u>	X	X ^g	X ^c	X ^b	X	X
<u>12. Secondary roof drain systems</u>				<u>X^j</u>		
11. <u>13. Swimming pool or wading pool – diatomaceous earth filter backwash</u>	X	X			X	
12. <u>14. Swimming pool or wading pool – drain wastewater</u>	X	X ^b	X ^{b,c}	X ^{b,c}	X ^b	X
13. <u>15. Swimming pool or wading pool – sand filter backwash</u>	X	X ^b	X ^{b,c}	X ^{b,c}	X ^b	X
14. <u>16. Water heater temperature and pressure relief valve [see s. Comm 82.40 (5)]</u>	X	X	X	X ^b	X	X
15. <u>17. Wastewater from water treatment device</u>	X	X	X ^c	X ^{b,c}	X	X
16. <u>18. Whirlpool backwash drain and wastewater</u>	X	X	X ^c	X ^{b,c}	X	
17. <u>19. Discharges not specifically listed above</u>	Contact the department.					

^g Fifty ~~gpd clear water~~ gallons per day maximum clear water.

^j Discharge separate from the primary system and where observable.

SECTION 73. Comm 82.40 Table 82.40–1 (partial) and Table 82.40–2 (partial) are amended to read:

**Table 82.40–1
(Partial Table)
WATER SUPPLY FIXTURE UNITS FOR
NONPUBLIC USE FIXTURES**

Type of Fixture ^a	Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
<u>Mobile Manufactured Home</u>	---	15	15

**Table 82.40–2
(Partial Table)
WATER SUPPLY FIXTURE UNITS FOR
PUBLIC USE FIXTURES**

Type of Fixture ^a	Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
<u>Service sink</u>	<u>2.0</u>	<u>2.0</u>	<u>3.0</u>
Sinks:			
Bar and Fountain	1.5	1.5	2.0
Barber and Shampoo	1.5	1.5	2.0
Cup		0.5	0.5
Flushing Rim		7.0	7.0
Kitchen and Food Preparation per faucet	2.0	2.0	3.0
Laboratory	1.0	1.0	1.5
<u>Service Sink</u>	<u>2.0</u>	<u>2.0</u>	<u>3.0</u>

SECTION 74. Comm 82.40 (3) (b) 1. b. and (d) 3. are amended to read:

Comm 82.40 (3) (b) 1. b. Tempered water supplied to serve multiple lavatories, wash fountains and shower heads shall be provided by means of thermostatic mixing valves that comply with ASSE 1017.

(d) 3. The installation of each ~~reduced pressure principle backflow preventer, reduced pressure detector backflow preventer, pressure vacuum breaker assembly, and back siphonage backflow vacuum breaker~~ double check backflow prevention assembly, double check fire protection backflow preventer, double check detector fire protection backflow preventer, reduced pressure principle backflow preventer, reduced pressure fire protection principle backflow preventer, reduced pressure detector fire protection backflow preventer, spill resistant vacuum breaker and pressure vacuum breaker shall display a department assigned identification number. ~~The provisions of this subdivision shall take effect September 1, 2001.~~

SECTION 75. Comm 82.40 (3) (e) is repealed and recreated to read:

Comm 82.40 (3) (e) *Multipurpose piping system.* 1. Except as provided in subd. 2., a multipurpose piping system shall be designed and installed in accordance with this section and NFPA 13D.

Note: Pursuant to this subdivision and sub. (2), materials for multipurpose piping systems need to be acceptable under the NFPA 13D standard and s. Comm 84.30, Table 84.30–9.

2. a. Fire department connections are prohibited in a multipurpose piping system.

b. Sections 7.6, 6.3(4), 8.1.3 and 8.6 of NFPA 13D do not apply in Wisconsin.

c. A multipurpose piping system conforming with all sections of NFPA 13D shall add the following wording to the warning sign required in 6.3(5) of NFPA 13D: “The number and location of sprinklers in this system conform with NFPA 13D.”

d. A multipurpose piping system that does not conform with all sections of NFPA 13D shall add the following wording to the warning sign required in 6.3 (5) of NFPA 13D: “The number and location of sprinklers in this system does not conform with NFPA 13D.”

SECTION 76. Comm 82.40 (4) (c) 1. a., (f) and (i), (5) (c) and (6) (a) are amended to read:

Comm 82.40 (4) (c) 1. a. The use of a hose connection backflow preventer, dual check backflow preventer wall hydrant-freeze resistant ~~and~~ or a hose connection vacuum breaker in a continuous pressure situation shall be limited to campgrounds and marinas.

(f) A hand-held shower may not be employed in backpressure situations of more than 2-5 feet of water column.

(i) A dual check backflow preventer wall hydrant-freeze resistant or a vacuum breaker wall hydrant, freeze resistant automatic draining type, may not be employed in backpressure situations of more than 10 feet of water column.

(5) (c) Water heaters. All water heaters and safety devices shall be designed and constructed in accordance with s. Comm 84.20 (5) ~~(p)~~.

(6) (a) *Intermittent flow fixtures.* The load factor for intermittent flow fixtures on water supply piping shall be computed in terms of water supply fixture units as specified in Table 82.40–1 and 82.40–2 for the corresponding fixture and use. Water supply fixture units may be converted to gallons per minute in accordance with ~~Table~~ Tables 82.40–3 or 82.40–3e.

SECTION 77. Comm 82.40, Table 82.40–3e is created to read:

Table 82.40–3e
CONVERSION OF WATER SUPPLY FIXTURE UNITS
TO GALLONS PER MINUTE FOR
WATER TREATMENT DEVICES^a SERVING AN INDIVIDUAL DWELLING^b

Water Supply Fixture Units (WSFUs)	Gallons Per Minute (GPM)
1	1
2	2
3	3
4	4
5	4.5
6	5
7	6
8	6.5
25	7
35	8
40	9

^a Treatment devices providing treatment for compliance with Table 82.70–1 shall use Table 82.40–2 for conversion.

^b Table shall not be utilized for converting hose bibb or hydrant wsfu.

SECTION 78. Comm 82.40 (7) (d) 1. b. is amended to read:

Comm 82.40 (7) (d) 1. b. The flow pressure at the outlets of the fixture supplies serving one piece tank type water closets, pressure balance mixing valves, ~~mobile~~ manufactured homes, and thermostatic mixing valves shall be at least 20 psig.

SECTION 79. Comm 82.40 (8) (b) 8. is created to read:

Comm 82.40 (8) (b) 8. No private water main or water service may be installed within 25 feet of a pressurized sanitary sewer or POWTS pump discharge piping or as otherwise approved by the department of natural resources.

SECTION 80. Comm 82.40 (8) (d) 3. is renumbered 82.40 (8) (d) 3. a.

SECTION 81. Comm 82.40 (8) (d) 3. b. is created to read:

Comm 82.40 (8) (d) 3. b. Water distribution piping serving as a meter bypass shall be no less than one nominal pipe size in diameter less than the meter inlet piping.

SECTION 82. Comm 82.40 (8) (e) 2. is repealed and recreated to read:

Comm 82.40 (8) (e) 2. Stop- and waste-type control valves may be installed underground:

- a. To serve fire hydrants intended for fire fighting.
- b. To serve 2-inch and larger diameter hydrants serving municipal wastewater treatment plants.
- c. To serve emergency fixtures.

SECTION 83. Comm 82.40 (8) (j) is amended to read:

Comm 82.40 (8) (j) *Water softeners.* Ion exchange water softeners used primarily for water hardness reduction that, during regeneration, discharge a brine solution ~~into a private onsite wastewater treatment system~~ shall be of a demand initiated regeneration type equipped with a water meter or a sensor unless ~~the design of the private onsite wastewater~~ a wastewater treatment system downstream of the water softener specifically documents the reduction of chlorides.

SECTION 84. Comm 82.41 Table 82.41–1 (partial), is amended to read:

**ACCEPTABLE CROSS CONNECTION CONTROL METHODS OR ASSEMBLIES FOR
SPECIFIC APPLICATIONS**

Methods or Assemblies of Cross Connection Control (Standard)	Situations and Conditions							
	Backpressure				Backsiphonage			
	Low Hazard		High Hazard		Low Hazard		High Hazard	
	Contin-uous	Noncon-tinuous	Contin-uous	Noncon-tinuous	Contin-uous	Noncon-tinuous	Contin-uous	Noncon-tinuous
	Pressure		Pressure		Pressure		Pressure	
Atmospheric Type Vacuum Breaker (CAN/CSA B64.1.1)						X		X
Back Siphonage Spill Resistant Vacuum Breaker (ASSE 1056 and CAN/CSA B64.1.3)	X ^a	X			X	X		
Hose Connection Type Vacuum Breakers (CAN/CSA B64.2.1-B64.2 and B64.2.2)	X ^a	X	X ^a	X	X ^a	X	X ^a	X
Pressure Type Vacuum Breaker (CAN/CSA B64.1.2)					X	X	X	X
Reduced Pressure Principle Type Backflow Preventer (CAN/CSA B64.4)	X	X	X	X	X	X	X	X

SECTION 85. Comm 82.40 (3) (c) 1. d. is created to read:

Comm 82.40 (3) (c) 1. d. In the water supply piping connecting to the outlet of a fire hydrant for any purpose other than fire suppression.

SECTION 86. Comm 82.41 Table 82.41–2 (partial) is amended to read:

**Table 82.41–2
(Partial Table)
ACCEPTABLE CROSS CONNECTION CONTROL METHODS OR ASSEMBLIES
FOR SPECIFIC APPLICATIONS**

Methods or Assemblies of Cross Connection Control (Standard)	Types of Application or Use
<u>Double Check Backflow Prevention Assemblies and double Check Fire Protection Backflow Prevention Assemblies</u> (ASSE 1015)	Automatic fire sprinkler systems and standpipe systems Water-based fire protection system
<u>Double Check Detector Assembly Fire Protection Backflow Preventer Prevention Assemblies</u> (ASSE 1048)	Automatic fire sprinkler systems and standpipe systems Water-based fire protection system
<u>Dual Check Backflow Preventer Wall Hydrant – Freeze Resistant Type</u>	<u>Hose threaded outlet connection</u>

SECTION 87. Comm 82.41 (4) (f) and (i) and (5) (a), (e) 2. and (f) (intro.) are amended to read:

Comm 82.41 (4) (f) A hand-held shower may not be employed in backpressure situations of more than 2-5 feet of water column.

(i) A vacuum breaker wall hydrant, freeze resistant automatic draining type or a freeze resistant sanitary yard hydrant, may not be employed in backpressure situations of more than 10 feet of water column.

(5) (a) An air-gap for cross connection control shall conform to ASME A112.1.2-~~or ASME A112.1.3.~~

(e) 2. Cross connection control devices or assemblies shall be so located that any vent ports ~~of the devices shall be~~ are provided with an air gap in accordance with par. (a) or ASME A112.1.3. ~~so as to comply with ASME A112.1.2 or ASME A112.1.3.~~

(f) The installation of a reduced pressure principle backflow preventer, a reduced pressure fire protection principle backflow preventer, a reduced pressure detector backflow preventer, a reduced pressure detector fire protection backflow prevention assembly, a double check backflow prevention assembly, a double check detector assembly backflow preventer, a pressure vacuum breaker assembly and a back siphonage backflow vacuum beaker shall conform to the following limitations:

SECTION 88. Comm 82.50 (3) (b) 5. is amended to read:

Comm 82.50 (3) (b) 5. Water provided to patient showers, therapeutic equipment and all types of baths shall be installed with control valves which automatically regulate the temperature of the water supply to the fixture fitting outlet within a temperature range of 110°F to 115°F. Such control valves shall comply with ASSE 1016 and shall automatically reduce flow to 0.5 gpm or less when the water supply to the fitting outlet exceeds 115°F or when loss of cold water pressure occurs.

SECTION 89. Comm 82.51 is amended to read:

Comm 82.51 Mobile Manufactured homes and mobile home parks-manufactured home communities. (1) DRAIN SYSTEMS. Except as provided in pars. (a) and (b), the building sewers and private interceptor main sewers serving a mobile manufactured home or mobile home park manufactured home community shall comply with s. Comm 82.30.

(a) The minimum slope of the aboveground building sewer shall be 1/8²² inch per foot.

(b) For mobile manufactured homes, the most upstream point of the building sewer shall be determined at the connection with the building drain installed by the mobile manufactured home manufacturer prior to delivery.

(c) The above ground building sewer shall be constructed of materials suitable for above ground drain and vent as specified in s. Comm 84.30 (2) (a).

(2) WATER SUPPLY SYSTEMS. (a) Except as provided in pars. (b) and (c), the water services and private water mains for a mobile manufactured home or mobile home park manufactured home community shall comply with s. Comm 82.40.

(b) The above ground water service shall be constructed of materials approved for water distribution as specified in s. Comm 84.30 (4) (e).

(c) The curb stop serving an individual mobile manufactured home shall terminate outside the perimeter of the mobile manufactured home.

(d) For mobile manufactured homes, the most downstream point of the water service shall be determined at the connection with the water distribution piping by the mobile manufactured home manufacturer prior to delivery.

(3) ~~MOBILE~~ MANUFACTURED HOME CONNECTIONS. (a) Frost sleeves for plumbing serving a mobile manufactured home shall conform to all of the following:

1. Water service and building sewer connections shall be provided with frost sleeves extending to within 6²² inches of the top of the below ground horizontal building sewer or water

service, or to a depth at least 6²² inches below the predicted depth of frost in accordance with Table 82.30–6.

2. The frost sleeve shall terminate at least 2²² inches above grade.

3. The sleeve shall be constructed of material approved for building drain or building sewer material as specified in s. Comm 84.30 (2).

(b) Termination of the water service and building sewer shall conform to all of the following:

1. The ~~mobile~~ manufactured home water service for connection to the ~~mobile~~ manufactured home shall terminate a minimum of 6²² inches above the surrounding finished grade.

2. The ~~mobile~~ manufactured home building sewer for connection to the ~~mobile~~ manufactured home shall terminate a minimum of 4²² inches above the surrounding finished grade and may not terminate higher than the water service.

(c) The ~~mobile~~ manufactured home water service and building sewer shall be capped or plugged when not connected to a ~~mobile~~ manufactured home.

Note: See Appendix A–82.51 (3) for further explanatory material.

SECTION 90. Comm 82.70 Table 82.70–1 lines 2 and 10 and footnote e are amended to read:

**Table 82.70–1
(Partial Table)
PLUMBING TREATMENT STANDARDS**

Intended Use	Plumbing Treatment Standards^f
2. Personal hygiene, bathing and showering, clothes washing.	NR 811 and 812 approved sources.
10. Surface irrigation except food crops, vehicle washing, toilet and urinal flushing, <u>clothes washing</u> , air conditioning, soil compaction, dust control, washing aggregate and making concrete ^{a, c, e}	pH 6-9 ^b ≤ 10 mg/L BOD ₅ ≤ 5 mg/L TSS No detectable fecal coliform cfu/100mL ≥ 1 mg/L and ≤ 10 mg/L free chlorine residual ^b

^eApplies to reuse not stormwater use.

SECTION 91. Comm 84.10, Table 84.10 line 8. is repealed.

SECTION 92. Comm 84.20 (3) (b) 2. to 8. are amended to read:

Comm 84.20 (3) (b) 2. ‘Lavatory faucet.’ a. The maximum discharge rate of lavatory faucets shall be ~~3~~ 2.2 U.S. gallons per minute at an 80 psig flowing supply pressure.

b. Lavatory faucets which are of the ~~self-closing~~ metering type shall allow a maximum of ~~one~~ 0.25 U.S. gallons per minute at an 80 psig flowing supply pressure.

3. ‘Shower heads.’ The maximum discharge rate of shower heads shall be ~~3~~ 2.5 U.S. gallons per minute at an 80 psig flowing supply pressure.

4. ‘Sink faucets.’ The maximum discharge rate of sink faucets shall be ~~3~~ 2.2 U.S. gallons per minute at 80 psig flowing supply pressure.

5. ‘Urinals.’ Urinals shall function properly with a maximum of ~~4.5~~ one U.S. ~~gallons~~ gallon per minute at an 80 psig flowing supply pressure.

6. ‘Urinal flushing devices.’ The flushing cycle for urinal flushing devices shall discharge a maximum of ~~4.5~~ one U.S. ~~gallons~~ gallon per flush per fixture use at static test pressure of 20 psig and 80 psig.

7. ‘Water closets.’ Water closets shall function properly with a maximum of 4 1.6 U.S. gallons per flush over the range of static test pressure specified in Table 84.20.

8. ‘Water closet flushing devices.’ The flushing cycle for water closet flushing devices shall discharge a maximum of 4 1.6 U.S. gallons over the range of static test pressures specified in Table 84.20.

SECTION 93. Comm 84.20 (5) (b) 1. c., (n) 1. a. and b., (o) 1. a. and 2. b. and (p) 2. c. are amended to read:

Comm 84.20 (5) (b) 1. c. Plastic bathtubs shall conform to ~~ANSI Z124.1~~ ANSI Z124.1.2.

(n) 1. a. Vitreous china urinals shall conform to ASME A112.19.2M ~~and A112.19.6~~.

b. Plastic urinals shall conform to ANSI Z124.9 ~~and ASME A112.19.6~~.

(o) 1. a. Vitreous china water closets shall conform to ASME A112.19.2M ~~and A112.19.6~~.

2. b. Hinged, closed-front seats, without covers, which are encased with a continuous plastic sleeve capable of providing a clean surface for every user, ~~and for which a specific material approval under s. Comm 61.60 has been issued.~~

(p) 2. c. A drain valve shall be installed at the lowest point of each water heater and hot water storage tank. ~~Drain valves shall conform to ASSE 1005.~~

SECTION 94. Comm 84.20 (5) (o) 3. is repealed and recreated to read:

Comm 84.20 (5) (o) 3. a. Water closets provided in day care centers, individual living units or sleeping units of residential occupancies may be of a round-bowl type with a hinged, closed front seat with or without a cover.

b. Water closets provided in prisons or correctional institutions may be of a round-bowl type, with or without a seat or cover.

SECTION 95. Comm 84.30 (1) (f) note is repealed.

SECTION 96. Comm 84.30 Table 84.30–2 (partial), 84.30–5 (partial) and 84/30–6 (partial) are amended to read:

**Table 84.30–2
(Partial Table)
UNDERGROUND DRAIN AND VENT PIPE AND TUBING**

Material	Standard
Concrete	ASTM C14; ASTM C76
Vitrified clay	ASTM C700

**Table 84.30–5
(Partial Table)
PRESSURIZED DRAIN PIPE AND TUBING
AND SERVICE SUCTION LINES**

Material	Standard
Ductile iron	ASTM A377; AWWA C115/A21.15 AWWA C151/A21.51 AWWA C115; AWWA C151
Stainless Steel	ASME B36.19M; ASTM A270 A269; A312/A312M; ASTM A450; A778; AWWA C220

**Table 84.30–6
(Partial Table)
STORM BUILDING SEWER PIPE AND TUBING**

Material	Standard
Vitrified clay	ASTM C700

SECTION 97. Comm 84.30 (4) (e) 2. is amended to read:

Comm 84.30 (4) (e) 2. Cold water distribution pipe installed underground shall conform to one of the standards listed in Table 84.30–7 or 84.30–8 and shall have a minimum working pressure of 150 psig at 73.4°F.

SECTION 98. Comm 84.30 (4) (f) and (g) are repealed.

SECTION 99. Comm 84.30 (4) (h) and (i) are renumbered 84.30 (4) (f) and (g).

SECTION 100. Comm 84.30 Table 84.30–7 (partial), Table 84.30–8 (partial) and Table 84.30–10 (partial) are amended to read:

**Table 84.30–7
(Partial Table)
PIPE AND TUBING
FOR WATER SERVICES AND PRIVATE WATER MAINS**

Material	Standard
Ductile iron	ASTM A377; AWWA C115/A21.15 AWWA C151/A21.51 AWWA C115; AWWA C151
Polybutylene (PB)*	ASTM D2662; ASTM D2666; ASTM D3000; ASTM D3309

**Table 84.30–8
(Partial Table)
WATER DISTRIBUTION PIPE AND TUBING**

Material	Standard
Cast iron	ASTM A377; AWWA C115/A21.15
Ductile iron	ASTM A377; AWWA C115/A21.15 AWWA C151/A21.51 AWWA C115; AWWA C151
Polybutylene (PB)*	ASTM D3309

**Table 84.30–10
(Partial Table)
PIPE FITTINGS**

Material	Standard
Ductile iron and gray iron	ANSI/AWWA C110/A21.10 ANSI/AWWA C153/A21.53 AWWA C110; AWWA C153; ANSI B16.42
Polybutylene (PB)*	ASTM D3309; MSS SP 103

SECTION 101. Comm 84.40 (2) (a) 2., (4) (b), (6) (a), (8) (c), (9) (b) and (10) (b) are amended to read:

Comm 84.40 (2) (a) 2. ‘Water supply systems.’ Mechanical push-on joints and mechanical compression-type joints for water supply systems which use a flexible elastomeric seal shall ~~conform to ASTM D3139~~ be suitable for potable water.

(4) (b) Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer’s instructions. Mechanical push-on joints and mechanical compression type joints for water supply systems which use flexible elastomeric seals shall ~~conform to ASTM D3139~~ be suitable for potable water.

(6) (a) Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer’s instructions. Mechanical push-on type joints which use flexible elastomeric seals shall ~~conform to ASTM D3139~~ be suitable for potable water.

(8) (c) Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer’s instructions. Mechanical push-on joints and mechanical compression type joints for water supply systems which use flexible elastomeric seals shall ~~conform to ASTM D3139~~ be suitable for potable water.

(9) (b) Mechanical joints. Mechanical push-on joints and mechanical compression type joints for water supply systems shall conform to AWWA C111/A21.11. Lead tipped gaskets may not be used.

(10) (b) Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer’s instructions. Mechanical push-on joints and mechanical compression type joints for water supply systems which use flexible elastomeric seals shall ~~conform to ASTM D3139~~ be suitable for potable water.

SECTION 102. Comm 84.40 (12) is repealed.

SECTION 103. Comm 84.40 (13) to (19) are renumbered 84.40 (12) to (18) and as renumbered 84.40 (12) (c), (14) (a) 2. and (15) (a) are amended to read:

Comm 84.40 (12) (c) Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer’s instructions. Mechanical push-on joints and mechanical compression type joints which use flexible elastomeric seals shall ~~conform to ASTM D3139~~ be suitable for potable water.

(14) (a) 2. ‘Water supply systems.’ Mechanical push-on joints and mechanical compression type joints for water supply systems which use flexible elastomeric seals shall ~~conform to ASTM D3139~~ be suitable for potable water.

(15) (a) *Mechanical joints*. Mechanical joints shall be installed in accordance with the manufacturer's instructions. Mechanical push-on type joints which use flexible elastomeric seals shall conform to ~~ASTM D3139~~ be suitable for potable water.

END

EFFECTIVE DATE

Pursuant to s. 227.22 (2)(intro.), Stats., these rules shall take effect on the first day of the month following the publication in the Wisconsin Administrative Register.
