

B

inlets receiving clear water wastes.

(b) ~~Traps~~ Except for exterior loading dock drains, traps shall not be required for roof drains exterior drain inlets or exterior area drains for storm water waste, unless the drain inlet is located within 10 feet of an air inlet, door or openable window. Where a trap is required, the trap may be located inside the building. More than one drain inlet may discharge to the same trap.

SECTION 148. Comm 82.36 (14)(b) Note is created to read:

Comm 82.36 (14)(b) Note: Traps may be located inside the building.

SECTION 149. Comm 82.36 (15) (a) and (b) are repealed and recreated to read:

Comm 82.36 (15) (a) ~~A trap~~ Except as provided in par. (b), a trap located inside a building shall be vented in accordance with s. Comm 82.31. Vent piping for clear water or stormwater systems shall not be connected connect to other venting systems.

(b) Vents shall not be required for traps which receive only storm water or groundwater wastes.

SECTION 150. Comm 82.37 (title) is amended to read:

Comm 82.37 Sanitation facilities and campgrounds.

SECTION 151. Comm 82.37 (2) (g) is renumbered as Comm 82.37 (2) (h).

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SECTION 152. Comm 82.37 (2) (h) 3. is created to read:

Comm 82.37 (2) (h) 3. Aboveground water supply piping shall be constructed of approved materials in accordance with s. Comm 84.30 (4) (e).

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SECTION 153. Comm 82.37 (2) (g) is created to read:

Comm 82.37 (2) (g) Aboveground drains shall be constructed of approved materials in accordance with s. Comm 84.30 (2) (a).

SECTION 154. Comm 82.37 (3) is created to read:

Comm 82.37 (3) CAMPGROUNDS. (a) Drain systems. Sewers serving campgrounds shall comply with the provisions in s. Comm 82.30 and all of the following:

1. A drain line serving a recreational vehicle shall discharge to a minimum 4-inch diameter campsite receptor by means of an indirect waste.

*Handwritten note: 35 pipe?*

2. One campsite receptor shall be designed to serve no more than 4 recreational vehicles.
3. Where two drain lines are designed to discharge into the same campsite receptor, an increaser shall be installed in the vertical portion of the trap riser to accommodate the drains.
4. The rim of a campsite receptor shall terminate no less than 4 inches above the finished grade.
5. The rim of a campsite receptor shall not terminate at an elevation that is higher than the water supply termination serving the same site.
6. A vent is not required to serve the trap serving a campsite receptor.
7. When not in use, a campsite receptor shall be capped.

(b) *Water supply systems.* Water supply systems serving campgrounds shall comply with the provisions in s. Comm 82.40 and all of the following:

1. An accessible control valve shall be installed at the most upstream point of the campground water supply distribution system and downstream of the municipal meter or pressure tank.
2. If water is provided to a campsite, individual approved backflow protection shall serve each hose connection in accordance with s. Comm 82.41.
3. A campsite water supply riser shall terminate no less than 12 inches above finished grade.

**Note:** See Appendix A-82.37 (3) for further explanatory material.

SECTION 155. Comm 82.38 is created to read:

**Comm 82.38 Discharge points. (1) PURPOSE.** The purpose of this section is to establish discharge points for wastewater.

**(2) SCOPE.** The provisions of this section set forth the requirements for the discharge points for wastewater based on the use of the fixtures, appurtenances, appliances and devices discharging into the plumbing system.

**(3) GENERAL REQUIREMENTS. (a)** Wastewater from fixtures or specific uses listed in Table 82.38-1 shall be discharged as specified in Table 82.38-1.

**(b)** Wastewater from uses other than those listed in Table 82.38-1, shall be discharged as specified by the department on a site-specific basis.

SECTION 156. Comm 82.38 Table 82.38-1 is created to read:

**Table 82.38 – 1  
ALLOWABLE DISCHARGE POINTS BY FIXTURE OR SPECIFIC USES**

Use or Fixture	Allowable Discharge Points					
	POWTS <sup>a</sup>	Municipal Sanitary Sewer	Municipal Storm Sewer	Ground Surface	Combined Sanitary-Storm Sewer	Subsurface Dispersal
1. Cross connection control device or assembly [see s. Comm 82.33(9)(k)]	X	X		X <sup>c,e</sup>	X	
2. Domestic wastewater and Condensate from high efficiency furnace or water heater	X	X			X	
3. Drinking fountain	X	X	X	X <sup>b</sup>	X	X <sup>d</sup>
4. Elevator pit drain [see s. Comm 82.33(9)(f)]			X	X <sup>b</sup>	X	X <sup>d</sup>
5. Enclosed public parking levels	X	X		X <sup>b</sup>	X	X <sup>d</sup>
6. Industrial wastewater	X <sup>f</sup>	X			X	
7. Municipal well pump house floor drain and sink	X	X		X <sup>b</sup>	X	X <sup>d</sup>
8. One- and 2-family garage floor area [see s. Comm 82.34(4)(b)]	X	X		X <sup>b</sup>	X	
9. Storm water, ground-water and clear water	X	X <sup>g</sup>	X <sup>c</sup>	X <sup>b</sup>	X	X <sup>d</sup>
10. Swimming pool or wading pool-- diatomaceous earth backwash	X	X			X	
11. Swimming pool or wading pool-- drain wastewater	X	X <sup>b</sup>	X <sup>b,c</sup>	X <sup>b,c</sup>	X <sup>b</sup>	X <sup>d</sup>
12. Swimming pool or wading pool-- sand filter backwash	X	X <sup>b</sup>	X <sup>b,c</sup>	X <sup>b,c</sup>	X	X <sup>d</sup>

**Table 82.38 – 1(continued)**  
**ALLOWABLE DISCHARGE POINTS BY FIXTURE OR SPECIFIC USES**

Use or Fixture	Allowable Discharge Points					
	POWTS	Municipal Sanitary Sewer	Municipal Storm Sewer	Ground Surface	Combined Sanitary-Storm Sewer	Subsurface Dispersal
13. Water heater temperature and pressure relief valve [see s. Comm 82.40(5)]	X	X	X	X <sup>b</sup>	X	X <sup>d</sup>
14. Water treatment device -- backwash or regeneration effluent	X	X	X <sup>c</sup>	X <sup>b</sup>	X	X <sup>d</sup>
15. Whirlpool backwash drain and wastewater	X	X			X	
16. Other discharges	Contact the department.					

- <sup>a</sup> Allowed when the POWTS is designed to include designated wastewater.
- <sup>b</sup> Unless prohibited by local municipality and when no nuisance is created.
- <sup>c</sup> Unless prohibited by the department of natural resources.
- <sup>d</sup> Allowed after receiving plan approval from the department. See also s. Comm 82.20.
- <sup>e</sup> Allowed for exterior installation and when no sanitary sewer is in the building.
- <sup>f</sup> Refer to the department of natural resources for discharge regulations.
- <sup>g</sup> Fifty gpd as specified in s. Comm 82.36(3)(b).

*check other titles*

SECTION 157. Comm 82.40 (3) (a) is renumbered as Comm 82.40 (3) (a) 1. and amended to read:

**Comm 82.40 (3) GENERAL.** (a) ~~Potable water required.~~ Every Water quality required for plumbing. 1. Except as provided in par. (a) 2., every piece of equipment used in the preparation or processing of food, medical or pharmaceutical products and every plumbing fixture and appliance which demands a supply of water shall be provided with ~~only potable~~ water of the quality as specified in s. Comm 82.70 (3) for the intended use, unless otherwise approved by the department.

SECTION 158. Comm 82.40 (3) (a) 2. is created to read:

**Comm 82.40 (3) (a) 2.** Non-potable water may be supplied to water treatment devices designed to treat water for compliance with Table 82.70-1.

SECTION 159. Comm 82.40 (3) (b) 1. is amended to read:

**Comm 82.40 (3) (b) 1.** ~~Lavatories,~~ a. Tempered water. Tempered water or hot water shall be provided to lavatories, wash fountains and shower heads which are not located in dwelling units or living units shall be supplied with either tempered water or hot water.

b. Tempered water shall be provided to lavatories, wash fountains and shower heads by means of tempered thermostatic mixing valves.

SECTION 166. Comm 82.40 Tables 82.40-1 (partial) and Table 82.40-2 (partial) are amended to read:

**Table 82.40-1 (partial)**  
**WATER SUPPLY FIXTURE UNITS FOR**  
**NONPUBLIC USE FIXTURES**

TYPE OF FIXTURE <sup>a</sup> Type of Fixture <sup>a</sup>	WATER SUPPLY FIXTURE UNITS Water Supply Fixture Units (WEFA) (wsfu)		
	Hot	Cold	Total
<u>Mobile Home</u>	--	<u>15</u>	<u>15</u>

**Table 82.40-2 (partial)**  
**WATER SUPPLY FIXTURE UNITS FOR**  
**PUBLIC USE FIXTURES**

TYPE OF FIXTURE <sup>a</sup> Type of Fixture <sup>a</sup>	WATER SUPPLY FIXTURE UNITS Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
<u>Autopsy table</u>	<u>2.0</u>	<u>2.0</u>	<u>3.0</u>
<u>Medical Exam and Treatment</u>	<u>1.0</u>	<u>1.0</u>	<u>1.5</u>
<u>Health Care Fixtures</u>			
<u>Clinic sink</u>	<u>2.0</u>	<u>7.0</u>	<u>7.0</u>
<u>Exam/treatment sink</u>	<u>0.5</u>	<u>0.5</u>	<u>1.0</u>
<u>Service sink</u>	<u>2.0</u>	<u>2.0</u>	<u>3.0</u>
<u>Sitz bath</u>	<u>1.5</u>	<u>1.5</u>	<u>2.0</u>
<u>Surgeon Washup washup</u>	<u>1.5</u>	<u>1.5</u>	<u>2.0</u>

SECTION 160. Comm 82.40 (3) (c) 3. is created to read:

**Comm 82.40 (3) (c) 3. a.** Except as provided in subd. 3. b., when a connection between two water supply systems exists, one system having a higher degree of hazard than the other system as specified in s. Comm 82.41, the water supply system with a lower degree of hazard shall be protected as specified in s. Comm 82.41.

b. When an approved water treatment device is provided to lower the concentration of a health-related contaminant, cross connection control shall not be required to protect the water supply system downstream of the treatment device.

SECTION 161. Comm 82.40 (3) (d) 1. a. and b. is repealed and recreated to read:

**Comm 82.40 (3) (d) Identification.** 1. Where buildings or facilities contain water supply systems where the water supply systems have different degrees of hazard, all nonpotable water supply systems shall be labeled in accordance with this section.

a. All above ground piping supplying nonpotable water shall be labeled by tags or yellow bands. The yellow bands shall be at least 3 inches wide and shall bear either text identifying the water as nonpotable or identifying the water for the specific use or uses.

b. The tags or colored bands shall be placed at intervals of not more than 25 feet. Where piping passes through a wall the piping shall be so identified on each side of the wall.

SECTION 162. Comm 82.40 (3) (d) 1. h. is created to read:

**Comm 82.40 (3) (d) 1. h.** A hose bibb designed to discharge water that does not comply with drinking water standards shall be labeled as nonpotable or identifying the water for the specific use or uses.

SECTION 163. Comm 82.40 (3) (e) is repealed.

SECTION 164. Comm 82.40 (3) (f) is renumbered as Comm 82.40 (3) (e).

SECTION 165. Comm 82.40 (4) (c) 1. b. is amended to read:

**Comm 82.40 (4) (c) 1. b.** A control valve shall be installed in the supply piping to each water heater and water treatment device and in the fixture supply to each plumbing fixture, plumbing appliance and piece of equipment. The control valve may be part of the bypass piping, or an internal part of a water treatment device.

SECTION 167. Comm 82.40 (5) (f) and Note are created to read:

**Comm 82.40 (5) (f) *Water heating and water quality.*** 1. Except as provided in subds. 2. and 3., water may not be heated in a water heater if the water quality is less than that required for drinking water outlets.

2. With the exception of radon contamination, a water distribution system may include a water heater when the contamination involves only inorganic chemicals.

**Note:** See Table 82.70-1 for further information.

3. Based upon the water quality and intended use, the department may through plan review approve a water distribution system that includes a water heater when the water quality is less than that permitted for drinking water outlets.

SECTION 168. Comm 82.40 Tables 82.40-4 to 82.40-11 are repealed and recreated to read:



**Table 82.40-5**  
**MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING-TYPE L, ASTM B88; (C=150)**

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																																				
	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"																				
	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU																			
0.5	0.5	-	0.5	2.0	-	2.0	4.0	4.0	7.0	-	9.0	11.0	11.0	15.0	23.0	7.5	37.0	40.0	30.0	86.0	65.0	90.0	200	136	462	561											
1	1.0	-	1.0	2.5	-	2.5	5.5	5.5	10.0	4.0	13.0	16.0	16.0	23.0	33.0	17.5	63.0	59.0	72.0	170	94.0	211	345	198	909	923											
2	1.5	-	1.5	4.0	-	4.0	8.5	8.5	14.5	4.5	20.5	23.0	23.0	37.0	48.0	44.0	120	86.0	175	305	137	468	566	288	1694	1694											
3	2.0	-	2.0	5.0	-	5.0	10.5	10.5	18.5	6.0	27.5	29.0	29.0	52.0	60.0	75.0	175	107	283	410	169	698	752	298	1792	1792											
4	2.0	-	2.0	6.0	-	6.0	12.0	12.0	21.5	7.0	33.0	34.0	34.0	66.0	70.0	108	225	119	356	469	NP	NP	NP	NP	NP	NP	NP										
5	2.5	-	2.5	6.5	-	6.5	14.0	14.0	24.0	8.0	40.0	38.0	38.0	80.0	77.0	136	260	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP									
6	2.5	-	2.5	7.5	-	7.5	15.5	15.5	26.0	9.0	45.0	42.0	42.0	90.0	100	NP	NP	NP	NP	NP	NP	NP															
7	3.0	-	3.0	8.0	-	8.0	16.5	16.5	29.0	12.5	52.0	44.0	44.0	37.0	107	NP	NP	NP	NP	NP	NP	NP	NP														
8	3.0	-	3.0	8.5	-	8.5	18.0	18.0	31.0	15.0	58.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP							
9	3.5	-	3.5	9.5	-	9.5	19.0	19.0	31.0	15.0	58.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP						
10	3.5	-	3.5	10.0	4.0	13.0	20.0	20.0	31.0	15.0	58.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP					
11	4.0	-	4.0	10.5	4.0	14.0	20.5	20.5	31.0	15.0	58.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP				
12	4.0	-	4.0	11.0	4.0	15.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP			
13	4.0	-	4.0	11.5	4.0	15.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP		
14	4.5	-	5.0	12.0	4.0	16.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP		
15	4.5	-	5.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	
16	5.0	-	6.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	
17	5.0	-	6.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
18	5.0	-	6.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
19	5.0	-	6.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
20	5.5	-	6.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Note: WSFU means water supply fixture units.

GPM means gallons per minute.

FM means predominantly flushometer type water closets or syphon jet urinals.

FT means predominantly flush tank type water closets or wash down urinals.

NP means - not permitted, velocities exceed 8 feet per second.

For using this table, round the calculated pressure loss due to friction to the next higher number shown.

Comm 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 82.40-6  
**MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING-TYPE M, ASTM B88; (C=150)**

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																							
	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"							
	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT	GPM	WSFU FM FT						
0.5	0.5	-	2.0	-	4.0	-	7.0	-	9.0	11.5	4.0	15.5	23.0	7.5	37.0	42.0	33.0	100	67.0	96.0	210	139	481	577
1	1.0	-	3.0	-	6.0	-	10.5	4.0	14.0	16.5	5.5	24.0	34.0	18.5	66.0	61.0	77.0	180	97.0	227	360	202	945	953
2	1.5	-	4.5	-	9.0	-	15.5	5.0	22.5	24.0	8.0	40.0	50.0	48.0	128	88.0	184	315	141	493	588	294	1750	1750
3	2.0	-	5.5	-	11.5	4.0	19.5	6.5	29.0	30.0	13.5	55.0	62.0	80.0	185	110	300	425	174	731	776	303	1835	1835
4	2.5	-	6.5	-	13.0	4.5	22.0	7.0	35.0	35.0	20.0	70.0	73.0	120	240	121	374	484	NP	NP	NP	NP	NP	NP
5	2.5	-	7.5	-	15.0	5.0	25.0	8.5	42.0	40.0	30.0	86.0	79.0	144	270	NP	NP	NP	NP	NP	NP	NP	NP	NP
6	3.0	-	8.0	-	16.5	5.5	28.0	11.0	50.0	44.0	36.0	106	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
7	3.5	-	9.0	-	18.0	6.0	30.0	13.5	55.0	45.0	39.0	112	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
8	3.5	-	9.5	-	19.5	6.5	32.0	17.0	62.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
9	4.0	-	10.0	4.0	20.5	6.5	31.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
10	4.0	-	11.0	4.0	21.5	7.0	34.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
11	4.5	-	11.5	4.0	15.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
12	4.5	-	12.0	4.0	16.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
13	5.0	-	12.5	4.5	17.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
14	5.0	-	12.5	4.5	18.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
15	5.0	-	6.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
16	5.5	-	6.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
17	5.5	-	6.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
18	5.5	-	6.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
19	6.0	-	7.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
20	6.0	-	7.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
21	6.0	-	7.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Note: WSFU means water supply fixture units.  
 GPM means gallons per minute.  
 FM means predominately flushometer type water closets or syphon jet urinals.  
 FT means predominately flush tank type water closets or wash down urinals.  
 NP means - not permitted, velocities exceed 8 feet per second.  
 For using this table, round the calculated pressure loss due to friction to the next higher number shown.  
 Comm 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 82.40-7  
**MAXIMUM ALLOWABLE LOAD FOR GALVANIZED STEEL PIPE, SCHEDULE 40, ASTM A53; (C=150)**

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																					
	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"					
	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU	GPM	WSFU				
0.5	0.5	-	1.5	-	3.5	-	7.0	-	11.0	4.0	15.0	7.0	32.0	34.0	18.5	66.0	75.0	175	123	381	490	
1	1.0	-	2.5	-	5.0	-	10.5	4.0	14.0	5.0	23.0	15.0	57.0	49.0	46.0	124	87.0	180	310	769	805	
2	1.5	-	4.0	-	7.5	-	15.5	5.0	22.5	7.5	37.0	38.0	110	72.0	116	235	127	406	511	260	1435	1435
3	2.0	-	5.0	-	9.0	-	19.0	6.0	28.0	29.0	52.0	56.0	155	89.0	188	320	158	607	683	317	1966	1966
4	2.5	-	5.5	-	11.0	4.0	22.0	7.0	35.0	34.0	66.0	90	200	104	266	395	184	809	837	NP	NP	NP
5	3.0	-	6.5	-	12.0	4.0	25.0	8.5	42.0	38.0	80.0	74.0	245	118	350	465	NP	NP	NP	NP	NP	NP
6	3.0	-	7.0	-	13.5	4.5	28.0	11.0	50.0	42.0	100	152	280	119	358	471	NP	NP	NP	NP	NP	NP
7	3.5	-	7.5	-	14.5	4.5	30.0	13.5	55.0	46.0	113	163	293	NP	NP	NP	NP	NP	NP	NP	NP	NP
8	4.0	-	8.0	-	16.0	5.0	33.0	17.5	63.0	49.0	124	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
9	4.0	-	9.0	-	17.0	5.5	35.0	20.0	70.0	50.0	131	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
10	4.5	-	9.5	-	18.0	6.0	37.0	24.0	76.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
11	4.5	-	10.0	4.0	19.0	6.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
12	5.0	-	10.5	4.0	19.5	6.5	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
13	5.0	-	11.0	4.0	20.5	6.5	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
14	5.0	-	11.0	4.0	21.5	7.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
15	5.5	-	11.5	4.0	21.5	7.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
16	5.5	-	12.0	4.0	21.5	7.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
17	6.0	-	12.5	4.5	21.5	7.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
18	6.0	-	13.0	4.5	21.5	7.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
19	6.0	-	13.0	4.5	21.5	7.0	37.0	24.0	77.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
20	6.5	-	8.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
21	6.5	-	8.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
22	7.0	-	9.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
23	7.0	-	9.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
24	7.0	-	9.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
25	7.5	-	9.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Note: WSFU means water supply fixture units.  
 GPM means gallons per minute.  
 FM means predominately flushometer type water closets or syphon jet urinals.  
 FT means predominately flush tank type water closets or wash down urinals.  
 NP means - not permitted, velocities exceed 8 feet per second.  
 For using this table, round the calculated pressure loss due to friction to the next higher number shown.  
 Comm 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 82.40-8  
**MAXIMUM ALLOWABLE LOAD FOR POLYBUTYLENE TUBING, ASTM D3309 and  
 CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM D2846; (C=150)**

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																	
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"		
	GPM	WSFU FM	FT	GPM	WSFU FM	FT	GPM	WSFU FM	FT	GPM	WSFU FM	FT	GPM	WSFU FM	FT	GPM	WSFU FM	FT
0.5	0.5	-	0.5	1.5	-	1.5	3.0	-	3.0	5.0	-	6.0	8.0	-	10.0	16.0	5.0	23.0
1	0.5	-	0.5	2.0	-	2.0	4.0	-	4.0	7.5	-	9.5	11.5	4.0	15.5	23.0	7.5	37.0
2	1.0	-	1.0	3.0	-	3.0	6.0	-	7.0	10.5	4.0	14.0	16.5	5.5	24.0	34.0	18.5	66.0
3	1.5	-	1.5	4.0	-	4.0	8.0	-	10.0	13.5	4.5	19.0	21.0	7.0	32.0	42.0	33.0	100
4	1.5	-	1.5	4.5	-	5.0	9.0	-	11.5	15.5	5.0	22.5	24.0	8.0	40.0	50.0	48.0	128
5	2.0	-	2.0	5.0	-	6.0	10.5	-	14.0	17.5	5.5	25.5	27.0	10.0	47.0	56.0	65.0	155
6	2.0	-	2.0	6.0	-	7.0	11.5	-	15.5	19.5	6.5	29.0	30.0	13.5	55.0	59.0	73.0	171
7	2.0	-	2.0	6.5	-	8.0	12.5	-	17.5	21.5	7.0	33.0	33.0	17.5	63.0	NP	NP	NP
8	2.5	-	2.5	7.0	-	9.0	13.5	-	19.0	23.0	7.5	37.0	34.0	19.0	68.0	NP	NP	NP
9	2.5	-	2.5	7.0	-	9.0	14.5	-	20.5	24.0	8.0	40.0	NP	NP	NP	NP	NP	NP
10	2.5	-	2.5	7.5	-	9.5	15.0	-	21.5	24.0	8.0	41.0	NP	NP	NP	NP	NP	NP
11	3.0	-	3.0	8.0	-	10.0	16.0	-	23.0	NP	NP	NP	NP	NP	NP	NP	NP	NP
12	3.0	-	3.0	8.5	-	10.5	16.5	-	24.0	NP	NP	NP	NP	NP	NP	NP	NP	NP
13	3.0	-	3.0	9.0	-	11.5	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
14	3.0	-	3.0	9.5	-	12.5	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
15	3.5	-	3.5	9.5	-	12.5	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
16	3.5	-	3.5	10.0	4.0	13.0	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
17	3.5	-	3.5	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
18	4.0	-	4.0	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
19	4.0	-	4.0	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
20	4.0	-	4.0	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
21	4.0	-	4.0	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
22	4.0	-	4.0	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
23	4.5	-	5.0	NP	NP	NP	NP	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Note: WSFU means water supply fixture units.  
 GPM means gallons per minute.  
 FM means predominately flushometer type water closets or syphon jet urinals.  
 FT means predominately flush tank type water closets or wash down urinals.  
 NP means - not permitted, velocities exceed 8 feet per second.  
 For using this table, round the calculated pressure loss due to friction  
 to the next higher number shown.  
 Comm 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 82.40-9  
**MAXIMUM ALLOWABLE LOAD FOR CROSSLINKED POLYETHYLENE (PEX) TUBING,**  
**ASTM F876 and F877; (C=150)**

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																					
	1/2"			5/8"			3/4"			1"			1 1/4"			1 1/2"			2"			
	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	
0.5	0.5	-	0.5	0.5	-	1.0	1.0	-	1.0	2.5	-	2.5	-	2.5	4.5	-	5.0	7.0	4.5	-	5.0	7.0
1	0.5	-	0.5	1.0	-	2.0	2.0	-	2.0	3.5	-	3.5	-	3.5	6.5	-	8.0	10.0	4.0	-	10.0	13.0
2	1.0	-	1.0	1.5	-	2.5	2.5	-	2.5	5.5	-	6.5	-	6.5	9.5	-	12.5	14.5	4.5	-	14.5	20.5
3	1.0	-	1.0	2.0	-	3.5	3.5	-	3.5	7.0	-	9.0	-	9.0	11.5	4.0	15.5	18.0	6.0	26.5	37.0	30.0
4	1.5	-	1.5	2.5	-	4.0	4.0	-	4.0	8.0	-	10.0	-	10.0	13.5	4.5	19.0	21.5	7.0	33.0	43.0	43.0
5	1.5	-	1.5	3.0	-	3.0	4.5	-	5.0	9.0	-	11.5	-	11.5	15.5	5.0	22.5	24.0	8.0	40.0	49.0	49.0
6	2.0	-	2.0	3.5	-	3.5	5.0	-	6.0	10.0	4.0	13.0	4.0	15.0	17.0	5.5	25.0	26.0	9.0	45.0	53.0	53.0
7	2.0	-	2.0	3.5	-	3.5	5.5	-	6.5	11.0	4.0	15.0	4.0	18.0	18.5	6.0	27.5	29.0	12.5	52.0	58.0	58.0
8	2.5	-	2.5	4.0	-	4.0	6.0	-	7.0	11.5	4.0	15.5	4.0	20.0	20.5	6.5	30.0	31.0	15.0	58.0	65.0	65.0
9	2.5	-	2.5	4.0	-	4.0	6.5	-	8.0	12.5	4.5	17.5	4.5	20.0	21.5	7.0	33.0	33.0	NP	NP	NP	NP
10	2.5	-	2.5	4.5	-	5.0	6.5	-	8.0	13.0	4.5	18.0	4.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
11	3.0	-	3.0	4.5	-	5.0	7.0	-	9.0	14.0	4.5	20.0	4.5	20.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
12	3.0	-	3.0	5.0	-	6.0	7.5	-	9.5	14.5	4.5	20.5	4.5	20.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP
13	3.0	-	3.0	5.0	-	6.0	8.0	-	10.0	15.0	5.0	21.5	5.0	21.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP
14	3.0	-	3.0	5.5	-	6.5	8.0	-	10.0	15.0	5.0	21.5	5.0	21.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP
15	3.5	-	3.5	5.5	-	6.5	8.5	-	10.5	15.5	5.5	22.0	5.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
16	3.5	-	3.5	6.0	-	7.0	8.5	-	10.5	15.5	5.5	22.0	5.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
17	3.5	-	3.5	6.0	-	7.0	8.5	-	10.5	15.5	5.5	22.0	5.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
18	3.5	-	3.5	6.0	-	7.0	9.0	-	11.5	15.5	5.5	22.0	5.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
19	4.0	-	4.0	6.5	-	7.0	8.0	-	10.0	15.0	5.0	21.5	5.0	21.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP
20	4.0	-	4.0	6.5	-	7.0	8.0	-	10.0	15.0	5.0	21.5	5.0	21.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP
21	4.0	-	4.0	6.5	-	7.0	8.0	-	10.0	15.0	5.0	21.5	5.0	21.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP
22	4.0	-	4.0	6.5	-	7.0	8.5	-	10.5	15.5	5.5	22.0	5.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
23	4.0	-	4.0	6.5	-	7.0	9.0	-	11.5	15.5	5.5	22.0	5.5	22.0	22.0	7.0	35.0	35.0	NP	NP	NP	NP
24	4.5	-	4.5	6.5	-	7.0	8.0	-	10.0	15.0	5.0	21.5	5.0	21.5	22.0	7.0	35.0	35.0	NP	NP	NP	NP

Note: WSFU means water supply fixture units.  
 GPM means gallons per minute.  
 FM means predominantly flushometer type water closets or syphon jet urinals.  
 FT means predominantly flush tank type water closets or wash down urinals.  
 NP means - not permitted, velocities exceed 8 feet per second.  
 For using this table, round the calculated pressure loss due to friction to the next higher number shown.  
 Conum 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 82.40-10  
**MAXIMUM ALLOWABLE LOAD FOR CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM F442; (C=150)**

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)																				
	3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"		
	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT	GPM	WSFU FM	WSFU FT
0.5	2.5	-	2.5	4.5	-	5.0	9.0	-	11.5	13.0	4.5	18.0	23.0	7.5	37.0	38.0	26.0	80.0	65.0	90.0	200
1	3.5	-	3.5	7.0	-	9.0	13.0	4.5	18.0	18.5	6.0	27.5	34.0	18.5	66.0	56.0	65.0	155	94.0	211	345
2	5.5	-	6.5	10.0	4.0	13.0	19.0	6.0	28.0	27.0	10.0	47.0	49.0	46.0	124	82.0	156	285	138	475	572
3	7.0	-	9.0	12.5	4.5	17.5	23.0	7.5	37.0	34.0	18.5	66.0	62.0	80.0	185	102	255	385	170	703	755
4	8.0	-	10.0	15.0	5.0	21.5	27.0	10.0	47.0	40.0	30.0	86.0	72.0	116	235	114	331	449	NP	NP	NP
5	9.0	-	11.5	16.5	5.5	24.0	31.0	15.0	57.0	45.0	38.0	110	78.0	142	267	NP	NP	NP	NP	NP	NP
6	10.0	4.0	13.0	18.5	6.0	27.5	34.0	18.5	66.0	49.0	46.0	124	NP	NP	NP	NP	NP	NP	NP	NP	NP
7	11.0	4.0	15.0	20.0	6.5	30.0	37.0	24.0	76.0	50.0	48.0	128	NP	NP	NP	NP	NP	NP	NP	NP	NP
8	11.5	4.0	15.5	21.5	7.0	33.0	38.0	26.0	80.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
9	12.5	4.5	17.5	23.0	7.5	37.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
10	13.0	4.5	18.0	23.0	7.5	39.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
11	14.0	4.5	20.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
12	14.5	4.5	20.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
13	14.5	5.0	21.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Note: WSFU means water supply fixture units.  
 GPM means gallons per minute.  
 FM means predominately flushometer type water closets or syphon jet urinals.  
 FT means predominately flush tank type water closets or wash down urinals.  
 NP means - not permitted, velocities exceed 8 feet per second.  
 For using this table, round the calculated pressure loss due to friction to the next higher number shown.  
 Comm 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

**Table 82.40-11**  
**MAXIMUM ALLOWABLE LOAD FOR POLYETHYLENE ALUMINUM POLYETHYLENE TUBING (PexAIPex), ASTM F1281; (C=150)**  
 Pipe Diameter (in inches)

Pressure Loss Due to Friction (in lbs. per 100 ft. of Length)	Pipe Diameter (in inches)											
	1/2"			5/8"			3/4"			1"		
	GPM	WSFU FM	FT	GPM	WSFU FM	FT	GPM	WSFU FM	FT	GPM	WSFU FM	FT
0.5	0.5	-	0.5	1.0	-	1.0	2.0	-	2.0	4.0	-	4.0
1	0.5	-	0.5	1.5	-	1.5	3.0	-	3.0	6.0	-	7.0
2	1.0	-	1.0	2.0	-	2.0	4.5	-	5.0	8.5	-	10.5
3	1.5	-	1.5	3.0	-	3.0	5.5	-	6.5	10.5	-	14.0
4	1.5	-	1.5	3.5	-	3.5	6.5	-	8.0	12.5	-	17.5
5	2.0	-	2.0	4.0	-	4.0	7.0	-	9.0	14.0	-	20.0
6	2.0	-	2.0	4.0	-	4.0	8.0	-	10.0	15.5	-	22.5
7	2.5	-	2.5	4.5	-	5.0	8.5	-	10.5	17.0	-	25.0
8	2.5	-	2.5	5.0	-	6.0	9.5	-	12.5	18.0	-	26.5
9	2.5	-	2.5	5.5	-	6.5	10.0	-	13.0	19.5	-	29.0
10	3.0	-	3.0	5.5	-	6.5	10.5	-	14.0	20.5	-	31.0
11	3.0	-	3.0	6.0	-	7.0	11.0	-	15.0	20.5	-	32.0
12	3.0	-	3.0	6.0	-	7.0	11.5	-	15.5	NP	-	NP
13	3.5	-	3.5	6.5	-	8.0	12.5	-	17.5	NP	-	NP
14	3.5	-	3.5	7.0	-	9.0	NP	-	NP	NP	-	NP
15	3.5	-	3.5	7.0	-	9.0	NP	-	NP	NP	-	NP
16	3.5	-	3.5	7.5	-	9.5	NP	-	NP	NP	-	NP
17	4.0	-	4.0	NP	-	NP	NP	-	NP	NP	-	NP
18	4.0	-	4.0	NP	-	NP	NP	-	NP	NP	-	NP
19	4.0	-	4.0	NP	-	NP	NP	-	NP	NP	-	NP
20	4.0	-	4.0	NP	-	NP	NP	-	NP	NP	-	NP
21	4.5	-	5.0	NP	-	NP	NP	-	NP	NP	-	NP

**Note:**  
 WSFU means water supply fixture units.  
 GPM means gallons per minute.  
 FM means predominantly flushometer type water closets or syphon jet urinals.  
 FT means predominantly flush tank type water closets or wash down urinals.  
 NP means - not permitted, velocities exceed 8 feet per second.  
 For using this table, round the calculated pressure loss due to friction to the next higher number shown.  
 Comm 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

SECTION 169. Comm 82.40 (7) (d) 1. a. and b. are amended to read:

**Comm 82.40 (7) (d) 1. a.** The design flow pressure at the outlets of the fixture supplies serving ~~syphonic~~ siphonic type urinals, washdown type urinals and water closets ~~and syphonic, siphonic~~ type flushometer water closets and campsite water supply hose connections shall be at least 15 psig.

b. The flow pressure at the outlets of the fixture supplies serving one piece tank type water closets, pressure balance mixing valves, mobile homes, and thermostatic mixing valves shall be at least 20 psig.

SECTION 170. Comm 82.40 (7) (f) 3. is created to read:

**Comm 82.40 (7) (f) 3.** A water distribution system downstream of a water treatment device that is designed to serve only fixtures, appliances and devices that provide no more than one gpm at each outlet may be sized according to the water treatment device manufacturer's recommendations.

SECTION 171. Comm 82.40 (7) (h) 1. a. and b. are amended to read:

**Comm 82.40 (7) (h) Maximum lengths for fixture supply connectors. 1. a.**  A fixture supply connector may not exceed more than 24 inches in developed length ~~from~~ upstream of a plumbing fixture or the body of a faucet, except as provided in subd. 1. b. and c.

b. A fixture supply connector located upstream of a water cooler device, water heater or water treatment device which individually serves a faucet or outlet may not exceed more than 10 feet in developed length ~~from a single faucet or outlet to a water cooler device, water heater, or water treatment device which is to individually serve the faucet or outlet.~~

SECTION 172. Comm 82.40 (7) (h) 1. c. is created to read:

**Comm 82.40 (7) (h) 1. c.** A fixture supply connector located upstream of a water treatment device serving no more than one or 2 fixtures or outlets may not exceed 10 feet in developed length.

SECTION 173. Comm 82.40 (8) (b) Note is created to read:

**Comm 82.40 (8) (b) Note:** See Appendix A-82.30 (11) (d) for setback distance from yard hydrant to well.

SECTION 174. Comm 82.40 (8) (b) 4. to 8. are renumbered as Comm 82.40 (8) (b) 3. to 7.

SECTION 175. Comm 82.40 (8) (c) is repealed and recreated to read:

**Comm 82.40 (8) (c) LIMITATIONS.** No private water main or water service may pass through or under a building to serve another building unless one of the following conditions are met:

1. The private water main or water service serves farm buildings or farm houses, or both that are all located on one property.

2. The private water main or water service serves buildings that are located on the same property and a document which indicates that the piping and distribution arrangement for the property and buildings will be recorded with the register of deeds no later than 90 days after installation.

SECTION 176. Comm 82.40 (8) (d) 4. is amended to read:

**Comm 82.40 (8) (d) 4.** ~~Water distribution piping~~ Except as provided in subs. 5. and 6., a bypass shall be provided to bypass serve a water softener and an iron removal treatment device. The bypass piping may be an internal part of the water softener or the iron removal treatment device.

SECTION 177. Comm 82.40 (8) (d) 5. and 6. are created to read:

**Comm 82.40 (8) (d) 5.** A bypass shall not be required when a water treatment device is serving no more than one or 2 fixtures or outlets.

6. A bypass shall be prohibited for a water treatment device installed to reduce a contaminant in order to comply with the provisions in s. Comm 82.70 (3).

SECTION 178. Comm 82.40 (8) (g) is amended to read:

**Comm 82.40 (8) (g) Temperature control.** The water temperature to all showers in public buildings shall be controlled by thermostatic or combination thermostatic-pressure balanced mixing valves or by individually controlled pressure balanced mixing valves. A ~~thermostatic or pressure balanced mixing valve~~ or combination thermostatic-pressure balanced mixing valve may not be bypassed.

SECTION 179. Comm 82.41 (3) (intro.) is amended to read:

**Comm 82.41 (3) GENERAL REQUIREMENTS.** Potable water supply systems and the connection of each plumbing fixture, piece of equipment, appliance, or nonpotable water piping system ~~thereto~~ shall be designed, installed and maintained in such a manner ~~as~~ to prevent the contamination of potable water supplies by means of cross connections. Water supplies with a connection to a source of contamination that has the potential to alter the degree of hazard of that water supply, shall be designed, installed and maintained in such a manner to prevent the deleterious contamination of that water supply.

SECTION 180. Comm 82.41 (5) (a) is amended to read:

**Comm 82.41 (5) INSTALLATION.** (a) An air-gap for cross connection control shall conform to ASME A112.1.2 or ASME A112.1.3.

SECTION 181. Comm 82.41 Table 82.41-1 (partial) and Table 82.41-2 (partial) are amended to read:

**Table 82.41-1 (partial)**

**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	Pressure	Pressure	Pressure	
<u>Air-gap Fittings for use with Plumbing Fixtures, Appliances, and Appurtenances (ASME A112.1.3)</u>	X	X	X	X	X	X	X	X

**Table 82.41-2 (partial)**

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

Methods or Assemblies of Cross Connection Control (Standard)	Types of Application or Use
Double Check Backflow Prevention Assemblies (ASSE 1015)	Automatic fire sprinkler systems and standpipe systems <u>Water-based fire protection system</u>
Double Check Detector Assembly Backflow Preventer (ASSE 1048)	Automatic fire sprinkler systems and standpipe systems <u>Water-based fire protection system</u>
Double Check Detector Valve Type Backflow Preventer (CAN/CSA B64.5)	Automatic fire sprinkler systems and standpipe systems <u>Water-based fire protection system</u>
Vacuum Breaker Tees [s. Comm 82.41 (5) <del>(k)</del> (j)]	Water treatment devices

SECTION 182. Comm 82.41 (5) (i) to (L) are renumbered as Comm 82.41 (5) (h) to (k).

SECTION 183. Comm 82.50 Tables 22, 23, 24, 26 and 27 are repealed.

SECTION 184. Comm 82.50 is repealed and recreated to read:

**Comm 82.50 Health care and related facilities. (1) GENERAL.** The scope of this section shall cover devices, fixtures and equipment which are designed, installed and maintained in health care and related facilities.

**(2) FIXTURES AND EQUIPMENT.** (a) *Plumbing fixtures accessible to patients with mental illness.* Plumbing fixtures accessible to patients with mental illness shall be securely fastened to walls or floors. Flush tank water closets may not be installed in areas accessible to patients with mental illness. All pipes, traps or valves shall be installed as to protect patients with mental illness.

**Note:** The department and other state agencies may have other rules that may affect the design, construction, maintenance and use of health care and related facilities.

(b) *Special fixtures and equipment.* 1. 'Requirements for ice manufacture and storage.' Machines for manufacturing ice or any device for handling or storage of ice shall be located in an area not subject to contamination.

2. 'Sterilizers and washer sanitizers.' a. Sterilizers and washer sanitizers shall discharge by means of indirect waste.

b. The indirect waste piping shall discharge by means of air-gap.

3. 'Aspirators.' Aspirators which require the use of water shall be provided with approved cross connection control.

(c) *Spouts and actions.* The selection of spouts and actions on plumbing fixtures shall comply with this section and Table 82.50-1.

1. 'Spouts'. Lavatories and sinks accessible to patients shall have the water supply spout mounted so that its discharge point is a minimum distance of 5 inches above the flood level rim of the fixture.

2. 'Actions.' All fixtures used by medical and nursing staff, and all lavatories used by patients and food handlers shall be equipped with valves that can be operated without the use of hands. Where wrist blade handles are used for this purpose, the handles shall not exceed 4 1/2 inches in length, except handles on scrub sinks and clinical sinks shall be no less than 6 inches long.

(d) *Floor drain prohibition.* 1. Except as provided in subd. 2., floor drains may not be installed in operating or delivery rooms.

2. Floor drains may be installed in cystoscopic rooms. The drain shall contain a non-splash, horizontal-flow flushing bowl beneath the drain plate.

**(3) WATER SUPPLY SYSTEMS.** (a) *Hospital water supply systems.* Water supply systems serving hospitals shall comply with all of the following:

1. All hospitals shall be provided with at least 2 water services. Whenever more than one water main is available, the connections shall be made to different water mains.

2. Each water service connection shall adequately serve the total building water supply demand as specified in s. Comm 82.40 (7).

*[Handwritten signature]*  
**Note:** For check valves in publicly-owned water distribution systems, refer to ch. NR 811.

(b) *Hospital, community-based residential facility, inpatient hospice and nursing home water supply systems.* 1. Water supply systems serving a hospital, community-based residential facility, inpatient hospice or nursing home shall comply with all of the following:

a. Except as provided in subpar. b., a single control valve may serve an area where 4 or fewer patient care units exist and where each unit contains not more than 2 persons.

b. A water supply serving an intensive care patient care unit shall be individually valved.

2. All water distribution piping shall be insulated in accordance with chs. Comm 61 to 65.

3. Cold water shall be supplied to lavatories or sinks located in patient rooms.

4. A hot water distribution system shall be under constant recirculation to provide continuous hot water at each hot water outlet, except that uncirculated hot water distribution piping may not exceed 25 feet in developed length.

5. Hot 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 automatically reduce flow to 0.25 gpm or less when the water supply to the fitting outlet exceeds 115°F.

**Note:** See Appendix A-82.50 (3) (b) 6. for sketches showing various design options.

6. Hot water supply systems shall be installed and maintained to provide bacterial control by one of the following methods:

a. Water stored and circulation initiated at a minimum of 140°F and with a return of a minimum of 124°F.

b. Water chlorinated at 2 mg/L residual.

**Note:** Additional information may be contained in ASHRAE Guideline 12-2000, Minimizing the Risk of Legionellosis Associated with Building Water Systems. This standard is published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE); 1791 Tullie Circle, N.E., Atlanta, GA 30329, phone 1-(800) 5-ASHRAE or (404) 636-8400 ext. 507; fax: (404) 321-5478; e-mail: orders@ashrae.org; or online at www.ashrae.org.

c. Another disinfection system approved by the department.

7. Bacterial control in cold water supply systems shall be controlled by one of the following methods:

a. Water temperature shall be maintained at a maximum of 68°F.

b. Water chlorinated at 2 mg/L residual.

**Note:** Additional information may be contained in ASHRAE Guideline 12-2000, Minimizing the Risk of Legionellosis Associated with Building Water Systems.

c. Another disinfection system approved by the department.

8. Except as provided in subd. 9., a water distribution system may not be designed, installed and maintained so that the maximum temperature to fixture fitting outlets exceeds 180°F.

9. A water distribution system may not be designed, installed and maintained so that the maximum temperature to fixture fitting outlets accessible to patients exceeds 115°F.

**Note:** See s. Comm 82.40 (5) and ch. HFS 124 for additional requirements for circulation systems.

SECTION 185. Comm 82.50 Table 82.50-1 is created to read:

**TABLE 82.50-1  
SPOUTS AND ACTIONS REQUIRED IN HEALTH CARE AND RELATED FACILITIES**

Fixture Location	Type of Spout		Type of Action		
	Standard	Gooseneck or provide a 5-inch clearance	Hand	Wrist	Foot, Knee or Electronic Sensor
<b>NURSING DEPARTMENT</b>					
Patient toilet room		X		X	X
Patient toilet room, isolation		X			X
Utility room		X		X	X
Treatment room		X		X	X
Medicine room		X		X	X
Kitchen floor lavatory		X		X	X
Kitchen floor sink	X	X		X	X
Nurses toilet room	X	X	X	X	X
Floor laboratory		X	X	X	X
<b>NURSERY</b>					
Nursery		X		X	X
Exam/treatment room		X		X	X
Infant intensive care unit		X			X
Labor room		X		X	X
<b>SURGICAL</b>					
Scrub room		X <sup>a</sup>			X
Sub-sterile room	X	X		X	X
Clean-up room	X	X		X	X
Frozen sections room		X	X	X	X
Surgical supply room		X		X	X
Work room	X	X		X	X
Cystoscopic room		X <sup>a</sup>		X	X
Fracture room	X	X		X	X
Recovery room		X			X

**TABLE 82.50-1 (continued)**  
**SPOUTS AND ACTIONS REQUIRED IN HEALTH CARE AND RELATED FACILITIES**

Fixture Location	Type of Spout		Type of Action		
	Standard	Gooseneck or provide a 5-inch clearance	Hand	Wrist	Foot, Knee or Electronic Sensor
<b>CENTRAL SUPPLY</b>					
Work room	X	X		X	X
Solutions room	X	X		X	X
Pharmacy		X	X	X	X
Manufacturing		X		X	X
<b>EMERGENCY DEPARTMENT</b>					
Observation bedroom		X		X	X
Utility room		X		X	X
Operating room		X <sup>a</sup>			X
Exam room		X		X	X
<b>DIAGNOSTIC AND TREATMENT</b>					
Occupational therapy room		X		X	X
Hydro-therapy room		X		X	X
Exam/treatment room		X		X	X
Radium treatment/exam room		X		X	X
Toilet room		X		X	X
Dark room		X		X	X
Autopsy room		X <sup>a</sup>			X
Lavatory in autopsy shower room		X	X		X
Laboratory		X	X		X
<b>CLINIC OR OUTPATIENT DEPARTMENT</b>					
Exam/treatment room		X		X	X
Dental operating room		X			X
Dental laboratory		X	X	X	X
Dental recovery		X		X	X
Surgical room		X <sup>a</sup>			X
Eye exam room		X			X
Ear, nose and throat exam room		X			X
<b>SERVICE DEPARTMENT</b>					
Lavatory in kitchen	X	X		X	X

X = means spout and action meet required type.

<sup>a</sup> Spout includes a spray head.

SECTION 186. Comm 82.51 Table 82.51 is repealed.

SECTION 187. Comm 82.51 is repealed and recreated to read:

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

(a) The minimum slope of the aboveground building sewer shall be 1/8 inch per foot.

(b) For mobile homes, the most upstream point of the building sewer shall be determined at the connection with the building drain installed by the mobile 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) The water services and private water mains for a mobile home or mobile home park 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 home shall terminate outside the perimeter of the mobile home.

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

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

1. Water service and building sewer connections shall be provided with frost sleeves extending to within 6 inches of the top of the below ground horizontal building sewer or water service, or to a depth at least 6 inches below the predicted depth of frost in accordance with Table 82.30-6.
2. The frost sleeve shall terminate at least 2 inches above grade.
3. The sleeve shall be constructed of material approved for building drain or building sewer material as specified in Table 84.30-3.

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

1. The mobile home water service for connection to the mobile home shall terminate a minimum of 6 inches above the surrounding finished grade.
2. The mobile home building sewer for connection to the mobile home shall terminate a minimum of 4 inches above the surrounding finished grade and may not terminate higher than the water service.

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

SECTION 188. Comm 82.60 Table 82.60 (partial) is amended to read:

**Table 82.60 (partial)**  
**Support Spacing SUPPORT SPACING**

Material	Maximum Horizontal Spacing (in feet)	Maximum Vertical Spacing (in feet)
Polybutylene (PB)	$2\frac{2}{3}$ ft. 8 in.	4
Polyethylene (PE)	$\frac{2}{2}$	4
Polypropylene (PP)	$\frac{2}{2}$	4
Polyvinylidene Fluoride (PVDF)	$\frac{2}{2}$	4
Polyvinyl Chloride, flexible (PVC)	$\frac{2}{2}$	4
Polyvinyl Chloride (PVC)	$\frac{4}{4}$	10

SECTION 189. Comm 82.70 Subchapter VII (title) is created to read:

**Subchapter VII-- WATER QUALITY**

SECTION 190. Comm 82.70 is created to read:

**Comm 82.70 Quality standards. (1) PURPOSE.** The purpose of this section is to establish water quality standards for plumbing systems that supply water to fixtures, appliances, appurtenances and other outlets based on the intended use.

**(2) SCOPE.** The provisions of this section apply to plumbing systems that supply water to fixtures, appliances, appurtenances and other outlets.

**Note:** Refer to ch. Comm 83 for requirements and specifications for POWTS.

**(3) GENERAL REQUIREMENTS.** A plumbing system shall supply water that is of a quality that will protect public health and the waters of the state and be suitable for the intended use.

**(4) MINIMUM REQUIREMENTS. (a)** Except as provided under par. (b), a plumbing system shall supply a quality of water at the outlet of a plumbing fixture, appliance or appurtenance or at the termination of the plumbing system that meets or exceeds the minimum requirements as specified in Table 82.70-1.

**(b)** For an outlet other than a plumbing fixture, appliance or appurtenance, there may be more stringent requirements assigned by a municipality, governmental unit, state agency or the owner of the plumbing system.

SECTION 191. Comm 82.70 Table 82.70-1 is created to read:

**Table 82.70-1  
WATER QUALITY STANDARDS**

Intended Use	Water Quality Standards
Surface or spray irrigation of any food crop, including crops eaten raw, non-commercial only <sup>a</sup>  Surface irrigation, vehicle washing, toilet and urinal flushing, air conditioning and other urban uses with similar access or exposure to the water <sup>d</sup>	pH 6 - 9 < 10 mg/L BOD <sub>5</sub> < 5 mg/L TSS No detectable fecal coliform/100 mL > 1 mg/L chlorine residual <sup>c</sup>
Soil compaction, dust control, washing aggregate and making concrete	< 30 mg/L BOD <sub>5</sub> < 30 mg/L TSS < 200 fecal coliform/100 mL > 1 mg/L chlorine residual <sup>c</sup>
Fire protection or control of fires  Personal hygiene, bathing, and showering, clothes washing, etc.  Swimming pool makeup water	Ch. NR 809 standards, except the following apply: < 300 pCi/L radon < 500 µg/L arsenic no limit for nitrate/nitrite
Once through cooling  Sod farms, silviculture sites and other areas where access is prohibited or restricted	pH 6 - 9 < 30 mg/L BOD <sub>5</sub> < 30 mg/L TSS < 200 fecal coliform/100 mL > 1 mg/L chlorine residual <sup>c</sup>
Drinking, cooking, food processing, preparation and cleaning, pharmaceutical processing, and medical uses	Ch. NR 809 standards
Subsurface dispersal/irrigation <sup>b, d</sup>	< 30 mg/L oil and grease < 30 mg/L BOD <sub>5</sub> < 150 mg/L TSS < 200 fecal coliform/100 mL
Swimming pool fill	Pool fill requirements in accordance with ch. HFS 172
Uses not specifically specified above	Department approval

<sup>a</sup> Refer to the department of agriculture, trade and consumer protection for commercial use.  
<sup>b</sup> Refer to ch. Comm 83 for domestic wastewater treatment requirements.  
<sup>c</sup> Applies only to wastewater treatment devices for reuse systems.  
<sup>d</sup> Stormwater collected from parking lots and industrial sites may not be infiltrated prior to pretreatment.

SECTION 192. Comm 84.10 Table 84.10 is amended to read:

**Table 84.10  
SUBMITTALS TO DEPARTMENT**

<b>Product Categories</b>	
1.	Chemical or biochemical treatments for <del>private sewage systems</del> <u>POWTS</u>
2.	Health care plumbing appliances
3.	<del>Laboratory plumbing appliances</del> <u>Physical restoration processes for POWTS</u>
4.	Prefabricated holding or treatment components for POWTS
5.	Prefabricated plumbing
6.	Water treatment or wastewater treatment devices not listed by a nationally recognized listing agency as complying with NSF Standard 44

SECTION 193. Comm 84.11 Table 84.11 (partial) is amended to read:

**Table 84.11 (partial)  
Device Listings**

<b>Device</b>	<b>Referenced Standard</b>
Atmospheric Type Vacuum Breakers	CAN/CSA B64.1.1
Back Siphonage Vacuum Breakers	ASSE 1056
Backflow Preventers for Carbonated Beverage Machine	ASSE 1022
Backflow Preventers with Intermediate Atmospheric Vent	ASSE 1012
Chemical Dispensing Systems	<u>ASSE 1055</u>
Double Check Backflow Prevention Assemblies	ASSE 1015

SECTION 194. Comm 84.15 is amended to read:

**Comm 84.15 Health care and laboratory plumbing appliances.** Health care plumbing appliances ~~and laboratory plumbing appliances~~ shall function and perform in accordance with the drain, vent, water supply and backflow protection requirements of ch. Comm 82.

SECTION 195. Comm 84.20 (5) (n) 2. is amended to read:

**Comm 84.20 (5) (n) 2.** A urinal may not be located closer than 15 inches from its center to any side wall, partition, vanity or other obstruction, nor closer than 30 inches center to center, between urinals. ~~When the space between stall type urinals or a stall type urinal and a side wall is less than 12 inches, the space shall be filled flush with the front and top of the urinal with nonabsorbent material.~~

SECTION 196. Comm 84.30 (1) (intro.) is repealed and recreated to read:

**Comm 84.30 (1) GENERAL.** When selecting the material and determining size for a plumbing system, due consideration shall be given to the waste that will discharge to the plumbing system and to the soil, liquid and atmospheric environments where the plumbing system will be located.

SECTION 197. Comm 84.30 (1) (f) is created to read:

**Comm 84.30 (1) (f)** Tubing transporting less than one gpm shall be sleeved where an obvious crushing, cutting or abrasion hazard exists.

SECTION 198. Comm 84.30 (2) (intro.) is amended to read:

**Comm 84.30 (2) SANITARY DRAIN AND VENT SYSTEMS AND POWTS INSPECTION AND OBSERVATION PIPING.** Sanitary drain systems and vent systems and POWTS inspection and observation piping shall be of such material and workmanship as set forth in this subsection.

SECTION 199. Comm 84.30 (2) (j) is created to read:

**Comm 84.30 (2) (j) *POWTS inspection and observation pipe.*** A POWTS inspection and observation pipe shall conform to at one of the standards listed in Table 84.30-1.

SECTION 200. Comm 84.30 Tables 84.30-1 (title) and (partial), 84.20-2 (partial), 84.30-3 (partial), 84.30-4 (Note) and (partial), 84.30-5 (partial), and 84.30-6 (partial) are amended to read:

**Table 84.30-1 (partial)  
ABOVE GROUND DRAIN AND VENT PIPE AND  
TUBING**

Material	Standard
Cast iron	ASTM A74; <u>ASTM A888</u> ; CISPI 301

**Table 84.30-2 (partial)  
UNDERGROUND DRAIN AND VENT PIPE AND  
TUBING**

Material	Standard
Cast iron	ASTM A74; <u>ASTM A888</u> ; CISPI 301

**Table 84.30-3 (partial)**  
**SANITARY BUILDING SEWER PIPE AND TUBING**

Material	Standard
Cast iron	ASTM A74; ASTM A888; CISPI 301

**Table 84.30-4 (partial)**  
**PERFORATED EFFLUENT DISTRIBUTION PIPING FOR NONPRESSURIZED SOIL ABSORPTION SYSTEMS**

Material	Standard
Polyvinyl chloride (PVC) <sup>2</sup>	ASTM D2729

**Note a:** Polyethylene (PE) The pipe shall have 2 rows, and only 2 rows, of perforations parallel to the axis of the pipe and 120° + 5° apart. The perforations shall be at the nominal 4 and 8 o'clock positions when the pipe is installed.

**Table 84.30-5 (partial)**  
**PRESSURIZED DRAIN PIPE AND TUBING AND SERVICE SUCTION LINES**

Material	Standard
Cast iron	ASTM A74, ASTM A377; AWWA C115/A21.15; CISPI 301
Polyvinyl chloride (PVC) <sup>2</sup>	ASTM D1785; ASTM D2241; ASTM D2665; ASTM D2672; AWWA C900

**Table 84.30-6 (partial)**  
**STORM BUILDING SEWER PIPE AND TUBING**

Material	Standard
Cast iron	ASTM A74; ASTM A888; CISPI 301

SECTION 204. Comm 84.30 Table 84.30-11 is created to read:

**Table 84.30-11**  
**PIPE AND TUBING FOR WATER DISTRIBUTION**  
**SYSTEMS DOWNSTREAM OF TREATMENT**  
**DEVICES DESIGNED TO SERVE FIXTURES,**  
**APPLIANCES AND DEVICES THAT PROVIDE**  
**<1 GPM AT EACH OUTLET**

Material	Standard
Polyethylene (PE) <sup>a</sup>	NSF 62, NSF 61, NSF 58, NSF 55, NSF 53, NSF 51, NSF 44, NSF 42, NSF 14
Polypropylene (PP) <sup>a</sup>	NSF 62, NSF 61, NSF 58, NSF 55, NSF 53, NSF 51, NSF 44, NSF 42, NSF 14
Polyvinylidene fluoride (PVDF) <sup>a</sup>	NSF 62, NSF 61, NSF 58, NSF 55, NSF 53, NSF 51, NSF 44, NSF 42, NSF 14
Polyvinyl chloride (PVC) <sup>a</sup>	NSF 62, NSF 61, NSF 58, NSF 55, NSF 53, NSF 51, NSF 44, NSF 42, NSF 14

<sup>a</sup> These materials are approved for cold water use only.

SECTION 205. Comm 84.30 (3) (d) is repealed.

SECTION 206. Comm 84.30 (3) (e) and (f) are renumbered as Comm 84.30 (3) (d) and (e) and amended to read:

**Comm 84.30 (4) (d) *Water services and private water mains.*** 1. Water service pipe and private water mains shall conform to one of the standards listed in ~~Table 84.30-8~~ 84.30-7. Pipe and tubing for water services and private water mains shall have a minimum working pressure of 150 psig at 73.4°F.

(e) *Water distribution pipe.* 1. Except as provided in subd. 2., water distribution pipe shall have a minimum working pressure of 100 psig at 180°F and shall conform to one of the standards listed in ~~Table 84.30-9~~ 84.30-8.

2. Water distribution pipe installed underground ~~for an exterior turf sprinkler system~~ upstream of an approved cross connection control device or assembly shall conform to one of the standards listed in ~~Table 84.30-10~~ Table 84.30-7. ~~Water distribution pipe and fittings for exterior turf sprinkler systems shall have a minimum working pressure of 100 psig at 73.4°F.~~ Water distribution pipe installed above ground ~~for an exterior turf sprinkler system~~ upstream of an approved cross connection control device or assembly shall conform to ~~subd. 1~~ to one of the standards listed in Table 84.30-8.

SECTION 201. Comm 84.30 Table 84.30-7 and Table 84.30-10 are repealed.

SECTION 202. Comm 84.30 Tables 84.30-8, 84.30-9 and 84.30-9m are renumbered as Tables 84.30-7, 84.30-8 and 84.30-9 and amended to read:

**Table 84.30-7 (partial)**  
**PIPE AND TUBING FOR WATER SERVICES AND PRIVATE WATER MAINS**

Material	Standard
Cast iron	ASTM A377; AWWA C115/A21.15
Copper <sup>b,e</sup>	ASTM B42; ASTM B88
Polyvinyl chloride (PVC) <sup>a</sup>	ASTM D1785; ASTM D2241; <del>ASTM D2672</del> ; AWWA C900

<sup>c</sup> Copper piping or tubing shall not be installed if the pH of the water to be conveyed is 6.5 or less

**Table 84.30-8 (partial)**  
**WATER DISTRIBUTION PIPE AND TUBING**

Material	Standard
Copper <sup>b,e</sup>	ASTM B42; ASTM B88

<sup>c</sup> Copper piping or tubing shall not be installed if the pH of the water to be conveyed is 6.5 or less.

*whole table ren.?*

SECTION 203. Comm 84.30 Table 84.30-11 (partial) is renumbered as Table 84.30-10 and amended to read:

**Table 84.30-10 (partial)**  
**PIPE FITTINGS**

Material	Standard
Polyvinyl Chloride (PVC)	ASTM D2464; ASTM D2466; ASTM D2467; ASTM D3311; ASTM F409; ASTM F1336; <u>ASTM F1866</u>

SECTION 207. Comm 84.30 (4) (e) 2. Note is created to read:

**Comm 84.30 (4) (e) 2. Note:** See appendix for further explanation.

SECTION 208. Comm 84.30 (4) (f) 2. a. is amended to read:

**Comm 84.30 (4) (f) 2. a.** The bending radius of polybutylene water distribution pipe or tubing shall meet or exceed the bending radius specified in Table ~~84.30-9~~ 84.30-9 and shall meet or exceed the bending radius specified by the manufacturer of the pipe or tubing.

SECTION 209. Comm 84.30 (4) (i) is created to read:

**Comm 84.30 (4) (i)** *Pipe and tubing for water distribution systems downstream of water treatment devices designed to serve fixtures, appliances and devices that provide  $\leq 1$  gpm at each outlet.* Pipe and tubing for water distribution systems downstream of water treatment devices designed to serve fixtures, appliances and devices that provide  $\leq 1$  gpm at each outlet shall conform to one of the standards listed in Table 84.30-11.

SECTION 210. Comm 84.30 (5) (a) and (d) are amended to read:

**Comm 84.30 (5) PIPE FITTINGS AND VALVES.** (a) *Fittings.* Pipe fittings shall conform to the pipe material standards listed in this chapter or one of the standards listed in Table ~~84.30-11~~ 84.30-10. Threaded drain pipe fittings shall be of the recessed drainage type.

(d) *Pipe saddles.* Pipe saddles shall be installed in accordance with the instructions of the saddle manufacturer and conform to all of the following limitations:

1. Pipe saddles may be installed on private interceptor main sewers, building sewers, underground drain and vent pipe and tubing, on existing above ground water distribution piping and where otherwise approved by the department

2. A saddle for drain piping shall have a radius in accordance with s. Comm 82.30 (8) (a);

3. The material of the saddle shall be compatible with the materials of the pipes which are to be connected to the saddle;

4. The hole in the pipe which is to receive the saddle shall be drilled or cored to match the saddle outlet;

5. Straps or clamps which wrap around the pipe and saddle shall be provided by the manufacturer of the saddle;

6. Saddles shall be installed with straps or clamps which wrap around the pipe and saddle;  
**and.**

7. Proper hangers or bedding shall be provided to maintain alignment between the opening in the pipe and the saddle.

SECTION 211. Comm 84.30 (5) (d) 8. is created to read:

**Comm 84.30 (5) (d) 8.** Saddles on water distribution piping shall be accessible.

SECTION 212. Comm 84.40 (1) (c) 1. to 4. is amended to read:

**Comm 84.40 (1) (c) *Prohibited joints and connections.*** Unless otherwise permitted in this chapter or ch. Comm 82 or 83, all of the following types of joints and connections shall be prohibited:

1. Cement or concrete joints;
2. Mastic or hot poured bituminous joints;
3. Elastomeric rolling o-rings between different diameter pipes;
4. Solvent cement joints between different types of plastic pipe; and other than ABS and PVC in non-pressurized systems.

SECTION 213. Comm 84.40 (6) (b) (intro.), 1. is amended to read:

**Comm 84.40 (6) (b) *Solvent cemented joints.*** Solvent cemented joints shall be made in accordance with ASTM D2846 ~~and its Appendix~~ or ASTM F493 ~~and its Appendix~~.

1. Joint surfaces shall be clean and free of moisture. A Cleaner, primer and cement conforming to ASTM F656 shall be applied to all joint surfaces installed in accordance with the manufacturer's instructions for use of the solvent cement. The primer shall be purple in color.

SECTION 214. Comm 84.40 (6) (b) 4. is repealed.

SECTION 215. Comm 84.40 (6) (b) 5. is renumbered as Comm 84.40 (6) (b) 4.

SECTION 216. Comm 84.40 (8) (d) is amended to read:

**Comm 84.40 (8) (d) Soldered joints.** All joint surfaces to be soldered shall be ~~cleaned bright by other than chemical means~~ made in accordance with ASTM B828. ~~A nontoxic flux~~ Flux conforming to ASTM B813 shall be applied to all joint surfaces. Solder conforming to ASTM B32 or other approved material shall be used. The joining of water supply piping shall be made with lead-free materials.

SECTION 217. Comm 84.40 (17) (d) 2. is amended to read:

**Comm 84.40 (17) (d) 2. Connections** Except as provided in par. (f), connections between different types of plastic pipe or between plastic pipe and other piping materials other than cast iron shall be by means of threaded joints in accordance with sub. (14) (c).

SECTION 218. Comm 84.40 (17) (f) is created to read:

**Comm 84.40 (17) (f) ABS plastic to PVC plastic.** For solvent-cemented connections between ABS and PVC piping in non-pressurized systems, all of the following shall apply:

1. Joint surfaces shall be clean and free of moisture.
2. Primer conforming to ASTM F656 shall be applied to all PVC joint surfaces.
3. Solvent conforming to ASTM D3138 shall be applied to all joint surfaces and the joint shall be made while the cement is wet.
4. Solvent shall be handled in accordance with ASTM F405.

SECTION 219. Comm 84.40 (19) is created to read:

**Comm 84.40 (19) CONNECTION OF PIPE TO CONCRETE STRUCTURES.** Joints between concrete structures and piping shall be made with mechanical joints in conformance with ASTM C923 or ASTM C564. Openings for pipe connections that are installed with mechanical joints conforming to ASTM C564 shall have an inside diameter of that required for cast iron pipe in conformance with ASTM A74.

SECTION 220. Comm 90.01 is amended to read:

**Comm 90.01 Authority and purpose.** This chapter is promulgated under the authority of s. 145.26, Stats., to regulate the design and construction, alteration, or reconstruction of public swimming pools, including whirlpools and water recreation attractions, and the alteration of public swimming pool equipment in order to protect the health and safety of the public.

SECTION 221. Comm 90.03 (20) (a) and (b) are created to read:

**Comm 90.03 (20) (a)** "Waterslide" means a water attraction where water is intended to flow in a flume."

(b) Slides not included in this definition are those that meet all of the following criteria:

1. The slide is no greater than 6 feet in height as measured from the slide entrance to the slide exit.
2. The slide discharge is no greater than 6 inches from the water surface.
3. From the slide entrance, the slide user has an unobstructed view of the slide exit and landing area.
4. The slide is neither a tube or has a cover that restricts the view of the landing area.

SECTION 222. Comm 90.04 (5) (a) is amended to read:

**Comm 90.04 (5) CONSTRUCTION SUPERVISION AND CERTIFICATION.** (a) *Supervision.* 1. ~~In~~ For the purposes of this paragraph, "supervision" means the performance of an architect's or engineer's service of reasonable on-site observation to determine that the completed construction is in substantial compliance with approved plans and specifications. ~~"Supervision" but~~ does not include the supervision of construction by a contractor.

SECTION 223. Comm 90.04 (6) and (7) are created to read:

SECTION 224. Comm 90.04 (6) and (7) are created to read:

**Comm 90.04 (6) CONSTRUCTION INSPECTION.** Every new installation or modification constructed under the authority of this chapter shall be inspected as required in this subsection.

(a) The construction or modification of any public swimming pool or water attraction shall be inspected by an authorized representative of the department.

(b) A rough-in inspection shall be conducted when the piping system is roughed-in and before concrete is poured.

1. When the installation is ready for inspection, the registered architect, professional engineer or pool contractor responsible for the construction or modification of any swimming pool shall make a request for inspection with the representative of the department when the work is ready for inspection.

2. Except as provided under subd. 3., work may not proceed beyond the point of inspection, as described under subd. 1., until the inspection has been completed.

3. If the inspection is not made by the end of the normal business day following the day of notification, not including Saturday, Sunday or legal holidays, the installation work may proceed.

(c) A final inspection shall be made when the construction or modification is complete. The registered architect or professional engineer responsible for the supervision of the construction or modification of any public swimming pool shall make a request for the final inspection as specified in par. (b) 1. to 3.

(d) The registered architect or professional engineer responsible for the supervision of the construction or modification of any public swimming pool provide the necessary equipment and personnel required for the inspection as requested by the authorized representative of the department.

(e) If the authorized representative of the department finds that the work or installation does not comply with this code, necessary corrections shall be made to achieve compliance. The authorized representative of the department shall be notified for re-inspection when the corrections are completed.

**(7) AUTHORIZED INSPECTION AGENT.** (a) Upon request from a governmental unit the department may delegate to the governmental unit, the responsibility to conduct construction inspections of any public swimming pool or water attraction in accordance with this section.

(b) The delegation of inspection authority by the department shall be contingent upon a request by the governmental unit demonstrating sufficient capabilities to complete the construction inspections.

(c) The department shall provide the governmental unit with a written decision of authorization or denial relative to the request under this section concerning construction inspection.

(d) The department shall include as part of governmental unit audits conducted an evaluation of the construction inspection functions that are authorized to the governmental unit under this section.

(e) When a governmental unit wishes to discontinue the authorized construction inspection function under this section, written notification shall be made to the department at least 30 days prior to the discontinuance.

(f) The authorization to conduct construction inspections may be revoked by the department after providing the governmental unit with justification.

SECTION 225. Comm 90.08 (8) (b) 4. is amended to read:

**Comm 90.08 (8) (b) 4.** The words "bench area below" shall be placed on the deck at the edge of the pool at the bench area in a color in distinct contrast to the deck background.

SECTION 226. Comm 90.10 (2) is amended to read:

**Comm 90.10 (2)** A plunge pool or a wave-generating pool does not require a separate enclosure if, along with other water ~~recreation~~ attraction facilities, it is enclosed in an area under the control of an operator providing safety and supervision measures as required in s. HFS 172.05.

SECTION 227. Comm 90.11 (3)(a) is amended to read:

**Comm 90.11 (3) (a) Extent.** Gutters shall extend completely around the pool except at recessed steps, ladders or ramps. A water ~~recreation~~ attraction may be exempt from the continuous gutter requirement with the approval of the department.

SECTION 228. Comm 90.12 (1) (a) is amended to read:

**Comm 90.12 Disinfection of pool water. (1) (a) General.** Equipment shall be provided for continuous disinfection of pool water. For a water ~~recreation~~ attraction, an electronic system for the continuous monitoring and feeding of a disinfectant into the recirculation system shall be installed.

SECTION 229. Comm 90.20 (1) is amended to read:

**Comm 90.20 Water recreation attractions. (1) GENERAL.** Water recreation attractions shall be designed and constructed in accordance with sound engineering practice. Design engineers may consult with the department regarding design variations and areas where potential problems may exist. The department may require a water recirculation rate for specific water recreation attractions which is greater than that stated in this chapter. Operators of water recreation attractions shall comply with this section and all other applicable requirements in this chapter.

SECTION 230. Comm 90.20 (4) and Notes are created to read:

**Comm 90.20 (4) WATERSLIDES.** The provisions of this section shall apply to all waterslides. These provisions shall apply in addition to all other applicable requirements in this chapter.

(a) All external parts and surfaces shall be of materials and finishes that will not cut, pinch, puncture or cause an abrasion to any person using the waterslide.

(b) Waterslide flumes shall be designed and constructed so as each person using the waterslide remains inside the flume path during use.

(c) All curves, turns and tunnels on the flume path shall be so designed and constructed as not to present a hazard to any person using the waterslide.

(d) Waterslides shall be so designed to support the use that is intended.

**Note:** Refer to ch. Comm 61 for plan review and s. Comm 34.05 other requirements.

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**EFFECTIVE DATE**

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

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(end)