Wisconsin Department of Safety and Professional Services
Division of Policy Development
4822 Madison Yards Way
PO Box 8366
Madison, WI 53707-8366

Phone: 608-266-2112
Web: http://dsps.wi.gov
Email: dsps@wisconsin.gov

Tony Evers, Governor
Dawn B. Crim, Secretary

PLUMBING CODE ADVISORY COMMITTEE MEETING
Room N206, 4822 Madison Yards Way, Madison
Contact: Mindy Allen (608) 266-2112
April 3, 2019

The following agenda describes the issues that the Committee plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a record of the actions of the Committee.

AGENDA

9:00 A.M.

OPEN SESSION – CALL TO ORDER – ROLL CALL

A. Adoption of Agenda (1-2)

B. Approval of Minutes for December 18, 2018 (3-5)

C. Administrative Matters

D. Legislative and Administrative Rule Matters - Discussion and Consideration (6-181)

1. Discussion of Department and Advisory Committee Proposed Code Changes Relating to the Plumbing Code, Chapters SPS 381 to 387
   a. SPS 381 Definitions and Standards
   b. SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing and SPS 382 Appendix
   c. SPS 383 Private Onsite Wastewater Treatment Systems and SPS 383 Appendix
   d. SPS 384 Plumbing Products and SPS 384 Appendix
   e. SPS 385 Soil and Site Evaluations
   f. SPS 386 Boat and On-Shore Sewage Facilities
   g. SPS 387 Private Onsite Wastewater Treatment System Replacement or Rehabilitation Financial Assistance Program

E. Public Comments

ADJOURNMENT

****

MEETINGS AND HEARINGS ARE OPEN TO THE PUBLIC, AND MAY BE CANCELLED WITHOUT NOTICE.

Times listed for meeting items are approximate and depend on the length of discussion and voting. All meetings are held at 4822 Madison Yards Way, Madison, Wisconsin, unless otherwise noted. In order to confirm a meeting or to request a complete copy of the board's agenda, please call the listed contact

person. The board may also consider materials or items filed after the transmission of this notice. Times listed for the commencement of disciplinary hearings may be changed by the examiner for the convenience of the parties. Interpreters for the hearing impaired provided upon request by contacting the Affirmative Action Officer, 608-266-2112.

PLUMBING CODE ADVISORY COMMITTEE
MEETING MINUTES
DECEMBER 18, 2018

PRESENT: Scott Chiples, Roger Musolff *(excused at 2:44 p.m.)*, Fred Gardner, Marc Rhiner, Robert Schmidt, Jason Sladky, Joseph Zoulek

STAFF: Melinda Allen, Administrative Rules Coordinator; Tom Braun, Section Chief; Ryan Boebel, Plumbing Consultant; and other Department staff

Roger Musolff, Chair, called the meeting to order at 9:02 a.m. A majority of seven (7) members was present.

ADOPTION OF AGENDA

MOTION: Jason Sladky moved, seconded by Robert Schmidt, to adopt the agenda as published. Motion carried unanimously.

APPROVAL OF MINUTES FOR NOVEMBER 6, 2018

MOTION: Joseph Zoulek moved, seconded by Scott Chiples, to approve the minutes of November 6, 2018 as published. Motion carried unanimously.

LEGISLATIVE AND ADMINISTRATIVE RULE MATTERS

Discussion of Department and Advisory Committee Proposed Code Changes Relating to the Plumbing Code, Chapters SPS 381 to 387

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing and SPS 382 Appendix

MOTION: Roger Musolf moved, seconded by Fred Gardner, to adopt item 38f2j of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Robert Schmidt, to adopt item 38f2k of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Jason Sladky, to adopt item 38f2L of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Fred Gardner, to adopt item 38f2m of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Robert Schmidt, to adopt item 38f2n of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Joseph Zoulek, to adopt items 38f2o-38f2t of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Joseph Zoulek, to adopt item 45c of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Fred Gardner, to adopt item 45c1 of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Scott Chiples, to adopt item 45d of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Fred Gardner, to adopt item 46a of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Robert Schmidt, to not adopt item 46b of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Scott Chiples, to adopt item 46c of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Robert Schmidt, to adopt item 46d of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Joseph Zoulek, to adopt item 47a1 of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Jason Sladky, to adopt item 47a2 of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Fred Gardner, to adopt item 47b of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Jason Sladky, to adopt item 47c of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Joseph Zoulek, to adopt item 48a of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Robert Schmidt, to adopt item 48b of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Fred Gardner, to adopt item 48c of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Fred Gardner moved, seconded by Jason Sladky, to adopt item 49a of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Scott Chiples moved, seconded by Fred Gardner, to adopt item 51a1 of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Scott Chiples, to adopt item 51a23 of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Fred Gardner, to adopt item 51b of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Robert Schmidt, to adopt item 51c of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Fred Gardner, to adopt item 51d of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Joseph Zoulek, to adopt item 51e of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Joseph Zoulek, to adopt item 51f of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Fred Gardner moved, seconded by Robert Schmidt, to adopt item 54a of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Fred Gardner, to adopt item 56 of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Scott Chiples, to adopt item 56a of the Plumbing Code Spreadsheet as amended. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Jason Sladky, to adopt item 57b of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Roger Musolff moved, seconded by Jason Sladky, to adopt item 57c of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Jason Sladky moved, seconded by Robert Schmidt, to adopt item 57d of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Joseph Zoulek moved, seconded by Fred Gardner, to adopt item 57e of the Plumbing Code Spreadsheet. Motion carried unanimously.

MOTION: Robert Schmidt moved, seconded by Jason Sladky, to adopt item 57f of the Plumbing Code Spreadsheet. Motion carried unanimously.

SPS 384 Plumbing Products and SPS 384 Appendix

MOTION: Robert Schmidt moved, seconded by Fred Gardner, to adopt item 6a of the Plumbing Code Spreadsheet. Motion carried unanimously.

(Roger Musolff was excused at 2:44 p.m.)

MOTION: Robert Schmidt moved, seconded by Scott Chiples, to table item 3 of the Plumbing Code Spreadsheet. Motion carried unanimously.

ADJOURNMENT

MOTION: Joseph Zoulek moved, seconded by Robert Schmidt, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 3:09 p.m.

DRAFT (v1.5) – Subject to Change

(This draft is intended for committee use only and is not an official rule draft.)

Chapter SPS 381

DEFINITIONS AND STANDARDS

SPS 381.01 Definitions.
SPS 381.20 Incorporation of standards by reference.

Note: Chapter Comm 81 was renumbered chapter SPS 381 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

SPS 381.01 **Definitions.** In chs. SPS 381 to 387, except as otherwise specifically defined:

(1) "Accepted engineering practice" means a specification, standard, guideline or procedure in the field of plumbing or related thereto, generally recognized and accepted as authoritative documented through national standards or specifications.

(2) "Accessible" when applied to a fixture, appliance, pipe, fitting, valve or equipment, means having access for maintenance, but which first may require the removal of an access panel or similar obstruction.

(2m) "Accessory building" means a detached building, not used as a dwelling unit but is incidental to that of the dwelling.

(3) "Aerobic treatment component" means a unit for the treatment of wastewater that utilizes the principle of oxidation for biological decomposition.

(4) "Agent" means an individual or agency recognized by the department to act on the department's behalf relative to a specific activity or function.

(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 outlet of the trap serving the receptor.

(6) "Air-gap, drain system" means the unobstructed vertical distance through the free atmosphere between the outlet of indirect or local waste piping and the flood level rim of the receptor into which it discharges.

(7) "Air-gap, water supply system" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank or plumbing fixture and the flood level rim or spill level of the receptacle.

(7e) "Alternate plumbing system" means a type of plumbing system designed in such a manner that valid and reliable data shall demonstrate to the department that the plumbing system is in compliance with the intent of chs. SPS 381 to 384.

(7m) "Ambulatory surgery center" means a health care facility that accepts federal funding in accordance with 42 CFR 416 of the federal register for health care finance and where 4 or more individuals that undergo a surgical procedure for which federal reimbursement is based.

(8) "Anaerobic treatment component" means a unit for the treatment of wastewater which utilizes molecular oxygen in the absence of free oxygen for biological respiration and decomposition.

(9) "Approved" means acceptance documented in writing by the department.

(10) "Appurtenance" means a manufactured device or prefabricated assembly of component parts which is an adjunct to a plumbing product or plumbing system.

(11) "Area drain" means a receptor designed to collect storm waters from an open area.

(12) "Areawide water quality management plan" means those plans prepared by the department of natural resources, including those plans prepared by agencies designated by the governor under the authority of ss. 281.11, 281.12 (1), 281.15, and 283.83, Stats., for the purpose of managing, protecting and enhancing groundwater and surface water of the state.

Note: See ch. SPS 382 Appendix for a list of water quality management agencies and their addresses.

(13) "Aspirator" means a fitting or device supplied with water or other fluid under positive pressure which passes through an integral orifice or constriction causing a vacuum.

(13m) "At-risk" means a POWTS serving a new public or commercial facility that may produce influent to a POWTS treatment or dispersal component, consisting in part of in situ soil in excess of the quantities specified in s. SPS 383.44 (2). This definition does not include existing facilities where the influent has been tested and determined to produce influent below the quantities specified in s. SPS 383.44 (2) or facilities that are known to produce influent exceeding the influent quantities.

(14) "Autopsy table" means a fixture or table used for post-mortem examination.

(15) "Automatic fire sprinkler system" has the meaning specified under s. 145.01 (2), Stats.

~~**Note:** Section 145.01 (2), Stats., reads:~~

~~"Automatic fire sprinkler system", for fire protection purposes, means an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply, such as a gravity tank, fire pump, reservoir or pressure tank or connection beginning at the supply side of an approved gate valve located at or near the property line where the pipe or piping system provides water used exclusively for fire protection and related appurtenances and to standpipes connected to automatic sprinkler systems. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.~~

(16) "Backflow" means the unwanted reverse flow of liquids, solids, or gases.

(17) "Back pressure" means a pressure greater than the supply pressure that may cause backflow.

(17e) "Backflow preventer" means any generic backflow prevention method, device, or assembly.

(18) "Backflow preventer with an intermediate atmospheric vent" means a ~~type of~~ cross connection control device ~~which~~

~~consists of 2~~ having two independently ~~acting~~ operating check valves, separated by an intermediate chamber with a means for automatically venting it to the atmosphere and can be installed in the horizontal, vertical up, or vertical down orientations. The check valves are ~~internally~~ force-loaded to a normally closed position and ~~separated by an intermediate chamber with a means for automatically venting to atmosphere where the venting means is internally force-loaded~~ the venting means is force-loaded to a normally open position. ~~The terms "backflow preventer" or "dual check valve type with atmospheric port backflow preventer" has the same meaning as backflow preventer with intermediate atmospheric vent.~~

(19) "Back siphonage" means the creation of a backflow as a result of negative pressure.

(21) "Backwater valve" means a device designed to prevent the reverse flow of wastewater in a drain system.

(22) "Ballcock" means a water supply valve opened or closed by means of a float or similar device used to supply water to a tank.

(23) "Bathroom group" means a water closet, lavatory and a bathtub or shower located together on the same floor level.

(24) "Battery of fixtures" means any group of ~~2~~ two or more fixtures that discharge into the same horizontal branch drain.

(25) "Bedpan sterilizer" means a fixture used for sterilizing bedpans or urinals by direct application of steam, boiling water or chemicals.

(26) "Bedpan washer and sanitizer" means a fixture designed to wash bedpans and to flush the contents into the sanitary drain system and which may also provide for disinfecting utensils by scalding with steam or hot water.

(27) "Bedpan washer hose" means a device supplied with hot or cold water, or both, and located adjacent to a water closet or clinical sink to be used for cleansing bedpans.

(28) "Bedrock" means rock that is exposed at the earth's surface or underlies soil material and includes:

(a) Weathered in-place consolidated material, larger than 2 mm in size and greater than 50% by volume; and

(b) Weakly consolidated sandstone at the point of increased resistance to penetration of a knife blade.

(29) "Bell" means the portion of a pipe that is enlarged to receive the end of another pipe of the same diameter for the purpose of making a joint.

(30) "Bench mark" or "BM" means a permanently established point, the elevation of which is assumed or known, which serves as a vertical reference point, and which may also serve as a horizontal reference point.

(31) "Blackwater" means wastewater contaminated by human body waste, toilet paper and any other material intended to be deposited in a receptor designed to receive urine or feces.

(32) "BOD_5" or "biochemical oxygen demand 5 day" means a measure of the amount of biodegradable organic matter in water.

(33) "Boiler blow-off basin" means a vessel designed to receive the discharge from a boiler blow-off outlet and to cool the discharge to a temperature that permits safe entry into the drain system.

(34) "Branch" means a part of a piping system other than a riser, main or stack.

(35) "Branch interval" means a vertical measurement of distance, 8 feet or more in length, between the connections of horizontal branches to a drainage stack.

Note: See ch. SPS 382 Appendix for explanatory material.

(35m) "Branch tailpiece" means a fitting consisting of a combination tail piece and a wye.

(36) "Branch vent" means a vent serving more than one fixture drain.

(37) "B.T.U." means British Thermal Units.

(38) "Building" means a structure for support, shelter or enclosure of persons or property.

(39) "Building drain" means horizontal piping within or under the fully enclosed portion of a building, installed below the lowest fixture or the lowest floor level from which fixtures can drain by gravity to the building sewer.

(40) "Building drain branch" means a fixture drain which is individually connected to a building drain and is vented by means of a combination drain and vent system.

(41) "Building drain, sanitary" means a building drain which conveys wastewater consisting in part of domestic wastewater.

(42) "Building drain, storm" means a building drain which conveys storm water, clear water, or both.

(43) "Building permit" means any written permission from a municipality that allows construction to commence on a structure.

(44) "Building sewer" means that part of the drain system not within or under the fully enclosed portion of a building ~~which~~ that conveys its discharge to a public sewer, private interceptor main sewer, private onsite wastewater treatment system or other point of discharge or dispersal.

(45) "Building sewer, sanitary" means a building sewer which conveys wastewater consisting in part of domestic wastewater.

(46) "Building sewer, storm" means a building sewer which conveys storm water, clear water, or both.

(47) "Building subdrain" means the horizontal portion of a drain system which does not flow by gravity to the building sewer.

(48) "Building subdrain branch" means a fixture drain which is individually connected to a building subdrain and is vented by means of a combination drain and vent system.

(49) "Burr" means a roughness or metal protruding from the walls of a pipe usually as the result of cutting the pipe.

(50) "Business establishment" means any industrial or commercial organization or enterprise operated for profit, including but not limited to a proprietorship, partnership, firm, business trust, joint venture, syndicate, corporation, or association.

(50g) "Camping unit" has the meaning given in s. SPS 327.08 (9).

(50r) "Camping unit transfer tank" means a type of portable container used to collect and hold wastewater discharges generated by an individual camping unit.

(51) "Campsite receptor" means the vertical drain piping and trap combination that receives wastewater from recreational vehicles.

(52) "Catch basin" means a watertight receptacle built to arrest sediment of surface, subsoil, or other waste drainage, and to retain oily or greasy wastes, so as to prevent their entrance into the building drain or building sewer.

(53) "Cesspool" means an excavation which receives domestic wastewater by means of a drain system without pretreatment of the wastewater and retains the organic matter and solids permitting the liquids to seep from the excavation.

(54) "Circuit vent" means a method of venting 2 to 8 traps or trapped fixtures without providing an individual vent for each trap or fixture.

(55) "Cleanout" means an accessible opening in a drain system used for the removal of obstructions.

(56) "Clear water" means wastewater other than storm water, having no impurities or where impurities are below a minimum concentration considered harmful by the department, including but not limited to noncontact cooling water and condensate drainage from refrigeration compressors and air conditioning equipment, drainage of water used for equipment chilling purposes and cooled condensate from steam heating systems or other equipment.

(56e) "Clinic sink" means a fixture having an integral trap and a flushing rim so that water cleanses the interior surface.

Note: This fixture has flushing and cleansing characteristics similar to a water closet. A clinic sink may also be referred to as a clinic service sink, a bedpan washing sink or a flushing rim sink.

(57) "Cold water" means water at a temperature less than 85°F.

(58) "Combination fixture" means a fixture combining one sink and laundry tray or a 2- or 3-compartment sink or laundry tray in one unit.

(59) "Combination drain and vent system" means a specially designed system of drain piping embodying the wet venting of one or more fixtures by means of a common drain and vent pipe adequately sized to provide free movement of air in the piping.

(59m) "Combination private water main" means a private water main that serves a fire protection system and any number of plumbing fixtures.

(59s) "Combination water service" means a water service that serves a fire protection system and any number of plumbing fixtures.

(60) "Community-based residential facility" or "CBRF" has the meaning specified under s. 50.01 (1g), Stats.

~~**Note:** Section 50.01 (1g), Stats., reads:~~

~~"Community-based residential facility" means a place where 5 or more adults who are not related to the operator or administrator and who do not require care above intermediate level nursing care reside and receive care, treatment or services that are above the level of room and board but that include no more than 3 hours of nursing care per week per resident. "Community-based residential facility" does not include any of the following:~~

~~(a) A convent or facility owned or operated by members of a religious order exclusively for the reception and care or treatment of members of that order.~~

~~(b) A facility or private home that provides care, treatment, and services only for victims of domestic abuse, as defined in s. 49.165 (1) (a), Stats., and their children.~~

~~(c) A shelter facility as defined under s. 16.308 (1) (d), Stats.~~

~~(d) A place that provides lodging for individuals and in which all of the following conditions are met:~~

~~1. Each lodged individual is able to exit the place under emergency conditions without the assistance of another individual.~~

~~2. No lodged individual receives from the owner, manager or operator of the place or the owner's, manager's or operator's agent or employee any of the following:~~

~~a. Personal care, supervision or treatment, or management, control or supervision of prescription medications.~~

~~b. Care or services other than board, information, referral, advocacy or job guidance; location and coordination of social services by an agency that is not affiliated with the owner, manager or operator, for which arrangements were made for an individual before he or she lodged in the place; or, in the case of an emergency, arrangement for the provision of health care or social services by an agency that is not affiliated with the owner, manager or operator.~~

~~(e) An adult family home.~~

~~(f) A residential care apartment complex.~~

~~(g) A residential facility in the village of Union Grove that was authorized to operate without a license under a final judgment entered by a court before January 1, 1982, and that continues to comply with the judgment notwithstanding the expiration of the judgment.~~

(61) "Conductor" means a drain pipe inside the building which conveys storm water from a roof to the storm drain or storm sewer.

(61m) "Containment" means the installation of a cross connection control method, device, or assembly to prohibit the flow of contamination from a building or facility into a water supply system.

(62) "Contaminant load" means the concentrations of substances in a wastewater stream.

(62e) "Containment tank" means a device with a valved outlet designed to temporarily hold potentially hazardous wastewater for evaluation before discharging to a POWTS or municipal sewer.

(62m) "Continuous pressure" means a pressure greater than atmospheric and exerted for a period of more than 12 continuous hours.

(62s) "Conveyance system" means that portion of a drain system that consists of a series of pipes that transport water from one area to another without providing detention.

(63) "Corporation cock" means a valve:

(a) Installed in a private water main or a water service at or near the connection to a public water main; or

(b) Installed in the side of a forced main sewer to which a forced building sewer is connected.

(64) "Critical level" means the reference point on a vacuum breaker that must be submerged before backflow can occur. When the critical level is not indicated on the vacuum breaker, the bottom of the vacuum breaker shall be considered the critical level.

(65) "Cross connection" means a connection or potential connection between any part of a water supply system and another environment containing substances in a manner that, under any circumstances, would allow the substances to enter the water supply system by means of back siphonage or back pressure.

(65m) "Cross connection control assembly" means a ~~testable backflow preventer consisting of an arrangement of components~~ mechanical backflow preventer used to prevent backflow into a water supply system that requires shut-off valves and a test cock or test cocks to meet any specific standard, such as a reduced pressure principle backflow preventer, a double check backflow preventer, a pressure vacuum breaker, or a spill resistant vacuum breaker.

(66) "Cross connection control device" means ~~any~~ a mechanical ~~device which automatically prevents~~ backflow preventer used to prevent backflow ~~from a contaminated source~~ into a ~~potable~~ water supply system other than a backflow prevention device or backflow prevention assembly, such as an air gap, vacuum breaker tee, or barometric loop.

(67) "Curb stop" means a valve placed in a water service or a private water main, usually near the lot line.

(68) "Dead end" means: (a) ~~a~~ A branch leading from a drain pipe, vent pipe, building drain or building sewer and terminating at a developed length of ~~2~~ two feet or more by means of a plug, cap, or other closed fitting.

(b) Any portion of the water distribution system terminating by means of a plug, cap, or closed fitting and with no outlet.

(69) "Department" means the department of safety and professional services.

(70) "Design wastewater flow" means 150% of the estimated wastewater flow generated by a dwelling, building or facility.

(70m) "Detention" means the collection and temporary storage of water for subsequent gradual discharge.

(71) "Determination of failure" has the meaning specified under s. 145.245 (1) (a), Stats.

(72) "Developed length" means the length of pipe line measured along the centerline of the pipe and fittings.

(72e) "Dfu" means drainage fixture unit.

(73) "Diameter" means in reference to a pipe the nominal inside diameter of the pipe.

(73m) "Dishwashing machine" means a commercial- or residential-type appliance as defined in pars. a and b.

(a) "Commercial-type" means a machine or appliance that is designed and constructed for use other than a residential-type that mechanically washes, rinses, and sanitizes dishes or utensils.

(b) "Residential-type" means a home-type machine or appliance that mechanically washes, rinses, and dries dishes or utensils and discharges to the plumbing drainage system.

Note: A residential-type dishwasher may also be referred to as a household dishwasher but is not limited to the installation in a one- or 2-family dwelling. The intended use of the dishwasher dictates if the appliance is considered commercial or residential.

(74) "Disinfection unit" means a type of POWTS treatment component, excluding a soil-based POWTS treatment component, that utilizes a chemical or photoelectric process to reduce the wastewater fecal coliform contaminant load.

(75) "Dispersal zone" means a dimensional volume of in situ soil that receives wastewater for treatment or distributes final effluent for dispersal.

(76) "Distribution cell" means a dimensional zone that is part of a POWTS treatment or dispersal component where wastewater is disseminated into in situ soil or engineered soil.

(77) "Documented data" means data which is developed in accordance with scientifically valid analytical protocols including field trials where appropriate, is subjected to peer review, results from more than one study, and consistent with other credible research.

(78) "Domestic wastewater" means the type of wastewater, not including storm water, normally discharged from or similar to that discharged from plumbing fixtures, appliances and devices including, but not limited to sanitary, bath, laundry, dishwashing, garbage disposal and cleaning wastewaters.

(79) "Double check backflow prevention assembly" means a ~~type of~~ cross connection control assembly ~~which is composed~~ consisting of ~~2~~ two independently acting check valves internally force-loaded to a normally closed position, two tightly closing shut-off valves that are properly located, and test cocks that are properly located ~~at each end of the assembly and fitted with test cocks. The term "double check valve backflow preventer" has the same meaning as double check backflow prevention assembly~~.

(80) "Double check detector fire protection backflow preventer-assembly" means an assembly serving a fire protection system and consisting of ~~2~~ two independently acting check valves, internally forced loaded to a normally closed position, ~~2~~ 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.

(80m) "Double check fire protection backflow prevention assembly" means an assembly serving a fire protection system and consisting of ~~2~~ two independently acting check valves, internally forced loaded to a normally closed position, ~~2~~ 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.

(81) "Drain" means any pipe that carries wastewater or water-borne wastes.

(82) "Drain system" includes all the piping or any portion of the piping within public or private premises ~~which~~ that conveys wastewater to a legal point of disposal~~,~~ but does not include the mains of public sewer systems or a private onsite wastewater treatment system or public sewage treatment or disposal plant.

(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.

(82m) "Dual check valve type with atmospheric port backflow preventer" has the same meaning as specified in sub. (18).

(83) "Dwelling" means a structure, or that part of a structure, which is used or intended to be used as a home, residence, or sleeping place by one person or by ~~2~~ two or more persons maintaining a common household, to the exclusion of all others.

(84) "Effluent" means liquid discharged from a process, device, appurtenance, or piping system.

(85) "Ejector" means an automatically operated device to elevate wastewater by the use of air under higher than atmospheric pressure.

(86) "Elevation" or "EL" means the vertical distance from the datum to a point under investigation.

(87) "Enforcement standard" or "ES" has the meaning specified under s. 160.01 (2), Stats.

Note: Section 160.01 (2), Stats., reads:

"Enforcement standard" means a numerical value expressing the concentration of a substance in groundwater which is adopted under ss. 160.07 and 160.09.

(88) "Engineered soil" means a mineral product that is equivalent to in situ soil for which treatment capability has been credited under Table 383.44-3, or superior to in situ soil in its ability to treat or disperse domestic wastewater from a POWTS.

(89) "Engineered system" means a system designed to meet the intent of the code but not the enumerated specifications of the state plumbing code.

(90) "Estimated wastewater flow" means the typical quantity of domestic wastewater generated daily by a dwelling, building or facility.

(90e) "Experimental plumbing system" has the same meaning as experimental system as specified in sub. (91).

(90m) "Exam sink" means a plumbing fixture used for hand washing in health care and related facilities.

Note: An exam sink may also be referred to as a treatment sink.

(91) "Experimental system" means a type of plumbing system from which valid and reliable data are being sought to demonstrate compliance with the intent of chs. SPS 382 to 384.

(92) "Failing private onsite wastewater treatment system" has the meaning specified under s. 145.01 (4m), Stats.

(93) "Farm" means a parcel of 35 or more acres of contiguous land that is devoted primarily to agricultural use, as defined under s. 91.01 (2), Stats.

~~**Note:** Section 91.01 (2), Stats., reads:~~
~~(a) Any of the following activities conducted for the purpose of producing an income or livelihood:~~
~~1. Crop or forage production.~~
~~2. Keeping livestock.~~
~~3. Beekeeping.~~
~~4. Nursery, sod, or Christmas tree production.~~
~~4m. Floriculture.~~
~~5. Aquaculture.~~
~~6. Fur farming.~~
~~7. Forest management.~~
~~8. Enrolling land in a federal agricultural commodity payment program or a federal or state agricultural land conservation payment program.~~
~~(b) Any other use that the department, by rule, identifies as an agricultural use.~~

(93m) ~~–~~"Fats, oil, and grease" and "FOG" mean organic polar compounds derived from vegetable, plant, or animal sources that are composed of long~~-~~chain triglycerides that are insoluble in water. Fats are generally solid particles, oils are usually liquid at room temperature, and grease is usually solid at room temperature.

(94) "Faucet" means a valve end of a water pipe by means of which water can be drawn from or held within the pipe.

(95) "Final effluent" means the effluent from the last POWTS treatment component.

(96) "Fixture drain" means the drain from a fixture to a junction with another drain pipe.

(97) "Fixture supply" means that portion of a water distribution system serving one plumbing fixture, appliance, or piece of equipment.

(98) "Fixture supply connector" means that portion of water supply piping which connects a plumbing fixture, appliance, or a piece of equipment to the water distribution system.

(99) "Fixture unit, drainage" or "dfu" means a measure of the probable discharge into the drain system by various types of plumbing fixtures. The drainage fixture unit value for a particular fixture depends on its volume rate of drainage discharge, on the time duration of a single drainage operation, and on the average time between successive operations.

(100) "Fixture unit, supply" or "sfu" means a measure of the probable hydraulic demand on the water supply by various types of plumbing fixtures.

Note: The supply fixture unit value for a particular fixture depends on its volume rate of supply, on the time duration of a single supply operation, and on the average time between successive operations.

(101) "Floodfringe" has the meaning specified under s. NR 116.03 (14).

~~**Note:** Section NR 116.03 (14) reads:~~
~~"Floodfringe" means that portion of a floodplain which is outside of the floodway, which is covered by flood water during the regional flood. The term "floodfringe" is generally associated with standing water rather than flowing water.~~

(102) "Flood level rim" means the edge of the receptacle from which water overflows.

(103) "Floodplain" has the meaning specified under s. NR 116.03 (16).

~~**Note:** Section NR 116.03 (16) reads:~~
~~"Floodplain" means that land which has been or may be covered by flood water during the regional flood. The floodplain includes the floodway, floodfringe, shallow depth flooding, flood storage and coastal floodplain areas.~~

(104) "Floodway" has the meaning specified under s. NR 116.03 (22).

~~**Note:** Section NR 116.03 (22) reads:~~
~~"Floodway" means the channel of a river or stream, and those portions of the floodplain adjoining the channel required to carry the regional flood discharge.~~

(105) "Floor sink" means a receptor for the discharge from indirect or local waste piping installed with its flood level rim even with the surrounding floor.

(106) "Flow" means the volumetric measure of a liquid stream in a specified time.

(107) "Flushometer valve" means a device which discharges a predetermined quantity of water to fixtures for flushing purposes and is closed by direct water pressure.

(108) "Flush valve" means a device located at the bottom of a tank for flushing water closets and similar fixtures.

(108m) "Foundation drain" means a subsoil drain that serves the area of the foundation of a building.

(108s) "Freeze resistant sanitary yard hydrant with backflow protection" 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~~ typically installed with a portion below ground surface, to supply potable water without danger of damage to the device due to freezing, and to provide protection of the portable water supply and ground water from contamination due to back-siphonage or back-pressure. ~~The term "freeze resistant sanitary yard hydrant with backflow protection" has the same meaning as freeze resistant sanitary yard hydrant.~~

(109) "Garage, private" means a building or part of a building used for the storage of vehicles or other purposes, by a family or less than ~~3~~ three persons not of the same family and which is not available for public use.

(110) "Garage, public" means a building or part of a building which accommodates or houses self-propelled land, air, or water vehicles for ~~3~~ three or more persons not of the same family.

(111) "Governmental unit" has the meaning specified under s. 145.01 (5), Stats.

(112) "Graywater" means wastewater contaminated by waste materials, exclusive of urine, feces, or industrial waste, deposited into plumbing drain systems.

(113) "Grease interceptor" means a receptacle designed to intercept and retain or remove grease or fatty substances.

(114) "Groundwater" has the meaning specified under s. 160.01 (4), Stats.

(115) "Hand-held shower" means a hose and a hand-held discharge piece such as a shower head or spray connecting to a fixture fitting.

(115m) "Health care facility" means a hospital, nursing home, community-based residential facility, or ambulatory surgery center.

(116) "Health care and related facility" means ~~a hospital, nursing home, community-based residential facility, county home,~~ an assisted living, residential care apartment complex, memory care, infirmary, inpatient mental health center, inpatient hospice, ~~ambulatory surgery center,~~ adult daycare center, ~~end stage~~ renal ~~facility~~ dialysis center, facility for the developmentally disabled, institute for mental disease, urgent care center, medical clinic or medical office, dental clinic or dental office, residential care center for children and youth, or school of medicine, surgery, or dentistry.

(117) "Health care plumbing appliance" means a plumbing appliance, the function of which is unique to health care activities to which a patient is exposed.

(118) "High groundwater" means zones of soil saturation which include perched water tables, shallow regional groundwater tables or aquifers, or zones that are seasonally, periodically, or permanently saturated.

(119) "High groundwater elevation" means the higher of either the elevation to which the soil is saturated when observed as a free water surface, or the elevation to which the soil has been seasonally or periodically saturated as indicated by the highest elevation of redoximorphic features in the soil profile.

(120) "High hazard" means a situation where the water supply system could be contaminated with a toxic substance or solution so as to make the water unsuitable for the designated use.

(121) "Holding tank" means a watertight receptacle for the collection and holding of wastewater.

(122) "Horizontal pipe" means any pipe or fitting which makes an angle of less than 45° with the horizontal.

(123) "Horizontal reference point" means a stationary, identifiable point to which horizontal dimensions can be related.

(124) "Hose connection backflow preventer" means a type of cross connection control device which consists of ~~2~~ two independent checks, force-loaded or biased to a closed position, with an atmospheric vent located between the ~~2~~ two check valves, which is force-loaded or biased to an open position, and a means for attaching a hose.

(125) "Hose connection vacuum breaker" means a type of cross connection control device which consists of a check valve member force-loaded or biased to a closed position and an atmospheric vent valve or means force-loaded or biased to an open position when the device is not under pressure.

(126) "Hot water" means water at a temperature of 110° F. or more.

(127) "Hot water storage tank" means a tank used to store water that is heated indirectly by a circulating water heater or by steam or hot water circulating through coils or by other heat exchange methods internal or external to the tank.

(128) "Human health hazard" has the meaning specified under s. 254.01 (2), Stats.

~~**Note:** Section 254.01 (2), Stats., reads:~~

~~"Human health hazard" means a substance, activity or condition that is known to have the potential to cause acute or chronic illness, to endanger life, to generate or spread infectious diseases, or otherwise injuriously to affect the health of the public.~~

(129) "Hydrostatic test" means a test performed on a plumbing system or portion thereof in which the system is filled with a liquid, normally water, and raised to a designated pressure.

(129m) "Imminent health hazard" means a significant threat or danger to health that is considered to exist when there is evidence sufficient to show that a project, practice, circumstance, or event creates a situation that requires immediate correction or cessation of operation to prevent injury or illness based on any of the following:

(a) The number of potential injuries or illnesses.

(b) The nature, severity, and duration of the anticipated injury or illness.

(130) "Indian lands" means lands owned by the United States and held for the use or benefit of Indian tribes or bands or individual Indians, and lands within the boundaries of a federally recognized reservation that are owned by Indian tribes or bands or individual Indians.

(131) "Indirect waste piping" means drain piping which does not connect directly with the drain system, but which discharges into the drain system by means of an air break or air gap into a receptor.

(132) "Individual vent" means a pipe installed to vent a fixture trap.

(133) "Industrial wastewater" means the liquid wastes that result from industrial processes.

(133s) "Infiltration component" means any device or method that is intended to promote the assimilation of water into in situ soil.

(134) "Infiltrative surface" means the plane within a treatment or dispersal component at which effluent is applied to in situ soil or engineered soil.

(135) "In situ soil" means soil naturally formed or deposited in its present location or position and includes soil material that has been plowed using normal tillage implements and depositional material resulting from erosion or flooding.

(136) "Interceptor" or "separator" means a device designed and installed so as to separate and retain deleterious, hazardous, or undesirable matter from wastes flowing through it.

(136s) "Irrigation" means the application of water to the root zone of plants or plantings.

(137) "Laboratory faucet backflow preventer" means a type of cross connection control device which consists of ~~2~~ two independently acting check valves force-loaded or biased to a closed position and, between the check valves, a means for automatically venting to atmosphere which is force-loaded or biased to an open position.

(138) "Laboratory plumbing appliance" means a plumbing appliance, the function of which is unique to scientific experimentation or research activities.

(139) "Leaching chamber" means a product designed to support soil and create a cavity for the temporary storage of effluent and to provide an infiltrative surface for the distribution cell POWTS dispersal or treatment component.

(140) "Leader" means a pipe or channel outside a building which conveys storm water from the roof or gutter drains to a storm drain, storm sewer or to grade.

(141) "Lead-free" means:

(a) When used with respect to solders and flux, containing not more than 0.2 percent lead.

(b) When used with respect to pipe and pipe fittings and fixtures, containing not more than 8.0 percent lead.

(c) When used with respect to the wetted surface material of pipe and pipe fittings and fixtures, containing a weighted average of not more than 0.25 percent lead.

Note: Calculation procedures for determining the weighted average lead concentration in a product that consists of several components are listed in NSF/ANSI Standard 61, annex G, including how to comply with amended sec. 1417(d)(2) of the federal Safe Drinking Water Act (SDWA) of 2011.

(142) "Linear loading rate" means the amount of effluent applied daily along the landscape contour expressed in gallons per day per linear foot along a site contour.

(143) "Load factor" means the percentage of the total connected fixture unit flow rate which is likely to occur at any point in a drain system.

(144) "Local station" means a National Weather Service (NWS) precipitation station or other station accepted by the department as collecting precipitation data in accordance with NWS methods.

(145) "Local waste piping" means a portion of drain piping which receives the wastes discharged from indirect waste piping and which discharges those wastes by means of an air break or air gap into a receptor.

(146) "Local vent" means a pipe connecting to a fixture and extending to outside air through which vapor or foul air is removed from the fixture.

(147) "Low hazard" means a situation where the water supply system could be contaminated with a nontoxic substance or solution so as to make the water unsuitable for the designated use.

(148) "Main" means the principal pipe artery to which branches may be connected.

(149) "Manhole" means an opening constructed to permit access by a person to a sewer or any underground portion of a plumbing system.

~~**(150)** "Manufactured dwelling" has the meaning specified under s. SPS 320.07 (52) (a).~~

~~**Note:** Section SPS 320.07 (52) (a) was repealed.~~

(151) "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.~~

(152) "Manufactured home drain connector" means the pipe that joins the drain piping for a manufactured home to the building sewer.

(153) "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.~~

(154) "Mechanical joint" means a connection between pipes, fittings or pipes and fittings by means of a device, coupling, fitting, or adapter where compression is applied around the center line of the pieces being joined, but which is not caulked, threaded, soldered, solvent cemented, brazed, or welded.

(154m) "Mixed wastewater" means a combination of domestic and non-domestic wastewater.

(155) "Multiple dwelling" means a building containing more than ~~2~~ two dwelling units.

(156) "Multipurpose piping system" means a water distribution system conveying water to plumbing fixtures and appliances and automatic fire sprinklers with the intention of serving both domestic and fire protection needs.

(157) "Municipality" means any city, village, town, or county in this state.

(158) "Munsell soil color" means a color classification that specifies the relative degrees of the color variables in terms of hue, value and chroma.

(159) "Navigable waters" has the meaning specified under s. NR 115.03 (5).

~~**Note:** Section NR 115.03 (5) reads:~~

~~"Navigable waters" means Lake Superior, Lake Michigan, all natural inland lakes within Wisconsin and all streams, ponds, sloughs, flowages and other waters within the territorial limits of this state, including the Wisconsin portion of boundary waters, which are navigable under the laws of this state. Under s. 281.31 (2) (d), Stats., notwithstanding any other provision of law or administrative rule promulgated thereunder, shoreland ordinances required under s. 59.692, Stats., and this chapter do not apply to lands adjacent to farm drainage ditches if:~~

~~(a) Such lands are not adjacent to a natural navigable stream or river;~~

~~(b) Those parts of such drainage ditches adjacent to such lands were nonnavigable streams before ditching or had no previous stream history; and~~

~~(c) Such lands are maintained in nonstructural agricultural use.~~

(160) "Negative pressure" means a pressure less than atmospheric.

(160e) "Noncontinuous pressure" means a pressure greater than atmospheric and exerted for a period of no more than 12 continuous hours.

(160m) "Non-domestic wastewater" means any wastewater that is not domestic wastewater or storm water.

(161) "Nonpotable water" means water not safe for drinking, personal or culinary use.

(162) "Nonpublic" means, in the classification of plumbing fixtures, those fixtures in residences, apartments, living units of hotels and motels, and other places where the fixtures are intended for the use by a family or an individual to the exclusion of all others.

(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~~ third-party certification that is acceptable to the department.

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

(163e) "Nursing home" has the meaning specified under s. 50.01 (3), Stats.

~~**Note:** Section 50.01 (3), Stats., reads:~~

~~"Nursing home" means a place where 5 or more persons who are not related to the operator or administrator reside, receive care or treatment and, because of their mental or physical condition require access to 24-hour nursing services, including limited nursing care, intermediate level nursing care and skilled nursing services. "Nursing home" does not include any of the following:~~

~~(c) A convent or facility owned or operated exclusively by and for members of a religious order that provides reception and care or treatment of an individual.~~

~~(d) A hospice, as defined in s. 50.90 (1), Stats., that directly provides inpatient care.~~

~~(e) A residential care apartment complex.~~

(163s) "Occasional occupancy" means occupying a building that is served by a POWTS for less than 120 calendar days per year.

(164) "Occupancy" means the purpose for which a building, structure, equipment, materials, or premises, or part thereof, is used or intended to be used.

(165) "Oil interceptor" means a device designed to intercept and retain oil, lubricating grease, or other similar materials.

(166) "Offset" means a combination of fittings or bends that makes two changes in direction bringing one section of the pipe out of line but into a line parallel with the other section.

(167) "One or 2-family dwelling" means a building containing not more than ~~2~~ two dwelling units.

(168) "Open air" means outside the building.

(168m) "Open bodies of water" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water, natural or artificial, public, or private within the state or under its jurisdiction.

(169) "Ordinary high-water mark" has the meaning specified under s. NR 115.03 (6).

~~**Note:** Section NR 115.03 (6), reads:~~

~~"Ordinary high-water mark" means the point on the bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark such as by erosion, destruction or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic. Where the bank or shore at any particular place is of such character that it is difficult or impossible to ascertain where the point of ordinary high-water mark is, recourse may be had to the opposite bank of a stream or to other places on the shore of a lake or flowage to determine whether a given stage of water is above or below the ordinary high-water mark.~~

(170) "Participating governmental unit" means a governmental unit which applies to the department for financial

assistance under ss. SPS 387.04 and 387.05, and which meets the conditions specified under s. 145.245 (9), Stats.

(170e) "Patient area plumbing fixture" means a plumbing fixture that is accessible to patients in a health care facility and is intended to be used for culinary, hygienic, or domestic purposes.

(171) "Peak flow" means the largest anticipated recurrent wastewater discharge to a private onsite wastewater treatment system.

(171e) "Peak flow, stormwater" means the largest anticipated flow from a given storm event.

~~(172)~~ (13m) "~~Pipe-applied atmospheric~~Atmospheric type vacuum breaker" means a type of cross connection control device where the flow of water into the device causes a float to close an air inlet port and when the flow of water stops the float falls and forms a check valve against back siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum.

(173) "Pit privy" means an enclosed nonportable toilet into which nonwater-carried human wastes are deposited to a subsurface storage chamber that is not watertight.

(174) "Pitch" means the gradient or slope of a line of pipe in reference to a horizontal plane.

(175) "Place of employment" has the meaning specified under s. 101.01 (11), Stats.

~~**Note:** Section 101.01 (11), Stats., reads:~~

~~"Place of employment" includes every place, whether indoors or out or underground and the premises appurtenant thereto where either temporarily or permanently any industry, trade or business is carried on, or where any process or operation, directly or indirectly related to any industry, trade or business, is carried on, and where any person is, directly or indirectly, employed by another for direct or indirect gain or profit, but does not include any place where persons are employed in private domestic service which does not involve the use of mechanical power or in farming. "Farming" includes those activities specified in s. 102.04 (3), and also includes the transportation of farm products, supplies or equipment directly to the farm by the operator of said farm or employees for the use thereon, if such activities are directly or indirectly for the purpose of producing commodities for market, or as an accessory to such production. When used with relation to building codes, "place of employment" does not include an adult family home, as defined in s. 50.01 (1), or, except for the purposes of s. 101.11, a previously constructed building used as a community-based residential facility, as defined in s. 50.01 (1g), which serves 20 or fewer unrelated residents.~~

(176) "Plumbing" has the meaning specified under s. 145.01 (10), Stats.

~~**Note:** Section 145.01 (10), Stats., reads:~~

~~"Plumbing" means:~~

~~(a) 1. All piping, fixtures, appliances, equipment, devices, and appurtenances in connection with water supply systems, water distribution systems, wastewater drainage systems, reclaimed water systems, and stormwater use systems, including hot water storage tanks, water treatment devices, and water heaters connected with these systems and also includes the installation thereof.~~

~~2. The construction, connection, installation, service, or repair of any drain or wastewater piping system that connects to the mains or other terminal within the bounds of, or beneath an area subject to easement for highway purposes, including private sewage systems and stormwater treatment and dispersal systems, and the alteration of any such systems, drains or wastewater piping.~~

~~3. The construction, connection, installation, service, or repair of water service piping that connects to the main or other water utility service terminal within the bounds of, or beneath an area subject to easement for highway purposes and its connections.~~

~~4. The water pressure system other than municipal systems as provided in ch. 281.~~

~~5. A plumbing and drainage system so designed and vent piping so installed as to keep the air within the system in free circulation and movement; to prevent with a margin of safety unequal air pressures of such force as might blow, siphon or affect trap seals, or retard the discharge from plumbing fixtures, or permit sewer air to escape into the building; to prohibit cross-connection, contamination or pollution of the water supply and distribution systems, and to provide an adequate supply of water to properly serve, cleanse and operate all fixtures, equipment, appurtenances and appliances served by the plumbing system.~~

~~(br) "Plumbing" does not include any of the following:~~

~~1. A rainwater gutter or downspout down to the point that it discharges into a plumbing system, a subsoil drain, or a foundation drain.~~

~~2g. A process water reuse system if the process water reuse system is not connected to any plumbing fixture or appliance.~~

~~2m. A stormwater culvert under a roadway or walkway that is placed there only to equalize the water level from one end of the culvert to the other end.~~

~~3. The practical installation of process piping within a sewage disposal plant.~~

(177) "Plumbing appliance" means any one of a special class of plumbing devices ~~which~~ that is intended to perform a special function. The operation or control of the appliance may be dependent upon one or more energized components, such as motors, controls, heating elements, or pressure or temperature sensing elements. The devices may be manually adjusted, ~~or~~ controlled by the user or operator, or may operate automatically through one or more of the following actions:

(a) ~~a~~ A time cycle~~;~~.

(b) ~~a~~ A temperature range~~;~~.

(c) ~~a~~ A pressure range~~;~~. ~~or~~

(d) ~~a~~ A measured volume or weight.

(178) "Plumbing fixture" means a receptacle or device which meets at least one of the following:

(a) Is either permanently or temporarily connected to the water supply system of the premises~~,~~ and demands a supply of water from the system~~;~~.

(b) Discharges wastewater or waste materials either directly or indirectly to the drain system of the premises.

(c) Requires both a water supply connection and a discharge to the drain system of the premises.

(179) "Plumbing system" includes the water supply system, the drain system, the vent system, plumbing fixtures, plumbing appliances, and plumbing appurtenances that serve a building, structure, or premises.

(180) "Point of standards application" has the meaning specified under s. 160.01 (5), Stats.

~~**Note:** Section 160.01 (5) Stats., reads:~~

~~"Point of standards application" means the specific location, depth or distance from a facility, activity or practice at which the concentration of a substance in groundwater is measured for purposes of determining whether a preventive action limit or an enforcement standard has been attained or exceeded.~~

(181) "Potable water" means water that is both:

(a) Safe for drinking, personal or culinary use.

(b) Free from impurities present in amounts sufficient to cause disease or harmful physiological effects.

(182) "POWTS" means a private onsite wastewater treatment system.

(183) "POWTS component" means any subsystem, subassembly or other system designed for use in or as part of a private onsite wastewater treatment system which may include treatment, dispersal or holding and related piping.

(183m) "POWTS component manual" means a document that contains detailed design, installation, and operation and maintenance procedures for POWTS components. A component manual that is approved under s. SPS 384.10 (3) (c) is an acceptable method under s. SPS 383.61.

(184) "POWTS dispersal component" means a device or method that is intended to promote the assimilation of treated wastewater by the environment.

(185) "POWTS holding component" means any receptacle intended to collect wastewater for a period of time, including holding and dosing tanks.

(186) "POWTS treatment component" means a device or method that is intended to reduce the contaminant load of wastewater.

(186s) "Pre-development" means the condition of the topography of vegetation, including that resulting from human activities that existed prior to land disturbance for construction.

(187) "Prefabricated plumbing" means concealed drain piping, vent piping or water supply or a combination of these types of piping, contained in a modular building component, ~~which~~ that will not be visible for inspection when delivered to the final site of installation.

(187e) "Prefabricated sump and pump system" means a simplex or duplex pump and sump designed as a combined unit.

(188) "Pressure relief valve" means a pressure actuated valve held closed by a spring or other means and designed to automatically relieve pressure at a designated pressure.

(189) "Pressure vacuum breaker ~~assembly~~" means a type of cross connection control assembly which consists of an independently ~~operating internally loaded~~ acting check valve force-loaded to the closed position and an independently acting ~~operating loaded~~ air inlet valve located ~~on the discharge side~~ downstream ~~of the check valve, a tightly closing shut-off valve located at each end of the assembly, and test cocks~~ that is force-loaded to the open position. ~~The term "pressure vacuum breaker" has the same meaning as pressure vacuum breaker assembly.~~ The assembly also includes two tightly closing shutoffs, one at the inlet of the assembly and one at the outlet of the assembly, and two tightly closing test cocks; one immediately upstream and one immediately downstream of the check valve.

(190) "Pressurized flushing device" means a device that uses the water supply to create a pressurized discharge to flush a fixture exclusive of gravity type flushing systems.

(191) "Preventive action limit" or "PAL" has the meaning as specified under s. 160.01 (6), Stats.

~~**Note:** Section 160.01 (6), Stats., reads:~~
~~"Prevention action limits" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats.~~

(192) "Principal residence" means a residence that is occupied at least 51% of the year by the owner. Principal residence includes a residence owned by a trust or estate of an individual, if the residence is occupied at least 51% of the year by a person who has an ownership interest in the residence as a beneficiary of the trust or estate.

(193) "Private interceptor main sewer" means a sewer serving ~~2~~ two or more buildings and not part of the municipal sewer system.

(194) "Private onsite wastewater treatment system" has the meaning given under s. 145.01 (12), Stats.

(195) "Private water main" means a water main serving ~~2~~ two or more buildings and not part of the municipal water system.

(195m) "Process piping" means that piping which is separated from a water supply system or drain system by the acceptable methods or means specified under ch. SPS 382 and is part of a system used exclusively for refining, manufacturing, industrial, or shipping purposes of every character and description.

(196) "Public" means, in the classification of plumbing fixtures, those fixtures which are available for use by the public or employees.

(197) "Public building" has the meaning specified under s. 101.01 (12), Stats.

~~**Note:** Section 101.01 (12), Stats., reads:~~
~~"Public building" means any structure, including exterior parts of such building, such as a porch, exterior platform or steps providing means of ingress or egress, used in whole or in part as a place of resort, assemblage, lodging, trade, traffic, occupancy, or use by the public or by 3 or more tenants. When used in relation to building codes, "public building" does not include a previously constructed building used as a community-based residential facility as defined in s. 50.01 (1g) which serves 20 or fewer unrelated residents or an adult family home, as defined in s. 50.01 (1).~~

(198) "Public sewer" means a sewer owned and controlled by a public authority.

(199) "Public water main" means a water supply pipe for public use owned and controlled by a public authority.

(200) "Quick closing valve" means a valve or faucet that closes automatically when released manually or controlled by mechanical means for fast action closing.

(201) "Receptor" means a fixture or device that receives the discharge from indirect or local waste piping.

(202) "Redoximorphic feature" means a feature formed in the soil matrix by the processes of reduction, translocation and oxidation of iron and manganese compounds in seasonally saturated soil.

(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.

(203m) "Reduced pressure fire protection principle backflow preventer" means an assembly serving a fire protection system and consisting of ~~2~~ 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 a 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.

(204) "Reduced pressure principle backflow preventer" means a ~~type of~~ cross connection control assembly ~~which contains 2~~ 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 a hydraulically operated relief means for venting to atmosphere, internally force-loaded to a normally open position. These assemblies are designed to operate under continuous pressure conditions. The assembly shall include two properly located, tightly closing ~~and includes 2~~ shut-off valves and ~~4~~ four properly located test cocks.

(205) "Relief vent" means a vent which permits additional circulation of air in or between drain and vent systems.

(206) "Riser" means a water supply pipe that extends vertically one full story or more.

(207) "Roof drain" means a drain installed to receive water collecting on the surface of a roof and to discharge it into a conductor.

(208) "Roughing in" means the installation of all parts of the plumbing system which can be completed prior to the installation of fixtures including drain, water supply and vent piping and the necessary fixture supports.

(209) "Rowhouse" means a building ~~which~~ that is not more than ~~3~~ three stories in height and ~~which~~ contains ~~only 3~~ three or more attached, vertically separated, side-by-side, or back-to-back dwelling units, with each dwelling unit served by an individual exterior exit within ~~6~~ six feet of the exit discharge grade.

(209m) "RV transfer tank" means a type of stationary container used to collect and hold wastewater discharges generated by an individual camping trailer or recreational vehicle.

(210) "Safing" means a membrane or material installed beneath a fixture to prevent leakage from escaping to the floor, ceiling, or walls.

(211) "Sand interceptor" means a receptacle designed to intercept and retain sand, grit, earth, and other similar solids.

(212) "Sanitary sewer" means a pipe that carries wastewater consisting in part of domestic wastewater.

(212e) "Scrub sink" means a plumbing fixture used for hand and arm washing prior to surgery or other medical procedures.

Note: A scrub sink may also be referred to as a surgeon washup sink.

(213) "Scum" means the accumulated floating solids generated during the biological, physical, or chemical treatment, coagulation, or sedimentation of wastewater.

(213m) "Seasonal" means the period of April 15 through October 31 for the purpose of frost protection.

(214) "Secretary" means the secretary of the department of safety and professional services or designee.

(214m) "Service sink" means a fixture designed to be used for building or facility maintenance.

Note: A service sink may also be referred to as a mop sink, mop basin, or janitor's sink.

(215) "Servicing" has the meaning as specified under s. NR 113.03 (57).

(216) "Sewage" means wastewater containing fecal coliform bacteria exceeding 200 CFU, colony forming units, per 100 ml.

(217) "Sewage grinder pump" means a type of sewage pump which macerates wastewater consisting in part of sewage.

(218) "Sewage pump" means an automatic pump for the removal of wastewater from a sanitary sump.

(219) "Slip-joint" means a connection in which one pipe slips into another, the joint of which is made tight with a compression type fitting.

(220) "Sludge" means the accumulated solids generated during the biological, physical, or chemical treatment, coagulation or sedimentation of water or wastewater.

(221) "Small commercial establishment" means a commercial establishment or business place with a maximum daily wastewater flow rate of less than 5,000 gallons per day as determined from the design criteria of the state plumbing code. Small commercial establishment includes a farm, including a residence on a farm, if the residence is occupied by a person who is an operator of the farm and if the maximum daily wastewater flow rate of the farm and the residence on the farm is less than 5,000 gallons-per-day as determined from the design criteria of the state plumbing code.

(222) "Soil" means the naturally occurring pedogenically developed and undeveloped regolith overlying bedrock.

(223) "Soil consistence" means the resistance of soil material to deformation or rupture as related to the degree of adhesion and cohesion of a soil mass.

(224) "Soil horizon" means a layer of soil material approximately parallel to the land surface and differing from adjacent genetically related layers in physical, chemical, or biologic characteristics.

(225) "Soil morphology" means the physical or structural characteristics of a soil profile particularly as related to the arrangement of soil horizons based on color, texture, structure, consistence, and porosity.

(226) "Soil profile" means a vertical section of soil containing one or more soil horizons.

(227) "Soil profile evaluation" means a determination of soil properties or characteristics as they relate to wastewater or nonwater-carried human waste treatment or dispersal.

(228) "Soil structure" means the combination or arrangement of individual soil particles into definable aggregates or peds, which are characterized and classified on the basis of size, shape, and degree of distinctness.

(229) "Soil texture" means the relative proportions of sand, silt, and clay (soil separates) in a soil.

(230) "Spigot" means the end of a pipe which fits into a bell or hub.

(231) "Spill level" means the horizontal plane to which water will rise to overflow through channels or connections which are not directly connected to any drainage system, when water is flowing into a fixture, vessel, or receptacle at the maximum rate of flow.

(231m) "Spill resistant vacuum breaker" means a cross connection control ~~device~~ assembly consisting of one check valve force loaded closed~~,~~ and an air inlet force loaded open to atmosphere located downstream of the check valve~~,~~ ~~2~~ The assembly also includes two tightly closing shutoff valves and ~~2~~ two test cocks or a no. 1 test cock and a bleed valve.

(232) "Spring line, pipe" means the line or place from which the arch of a pipe or conduit rises.

Note: See ch. SPS 382 Appendix for an illustration depicting the spring line of a pipe.

(233) "Stack" means a drain or vent pipe that extends vertically one full story or more.

(234) "Stack vent" means a vent extending from the highest horizontal drain connected to a stack.

(235) "Standpipe" means a drain pipe serving as a receptor for the discharge wastes from indirect or local waste piping.

(236) "State" means the state of Wisconsin, its agencies, and institutions.

(237) "State plumbing code" means chs. SPS 381 to 387.

(238) "Sterilizer, boiling type" means a device of nonpressure type, used for boiling instruments, utensils, or other equipment for disinfecting.

(239) "Sterilizer, instrument" means a device for the sterilization of various instruments.

(240) "Sterilizer, pressure" means a pressure vessel fixture designed to use steam under pressure for sterilizing.

Note: A pressure sterilizer is also referred to as an autoclave.

(241) "Sterilizer, pressure instrument washer" means a pressure vessel designed to both wash and sterilize instruments during the operating cycle of the device.

(242) "Sterilizer, utensil" means a device for the sterilization of utensils.

(243) "Sterilizer vent" means a separate pipe or stack, indirectly connected to the drain system at the lower terminal, which receives the vapors from nonpressure sterilizers, or the exhaust vapors from pressure sterilizers, and conducts the vapors directly to the outer air.

(244) "Sterilizer, water" means a device for sterilizing water and storing sterile water.

(245) "Storm sewer" means a pipe, other than a pipe located inside a building, that carries any of the following: storm water, groundwater, or clear water.

(246) "Storm water" means wastewater from a precipitation event.

(247) "Subsoil drain" means that part of a drain system that conveys groundwater to a point of discharge or dispersal.

(248) "Sump" means a tank or pit that receives wastewater that must be emptied by mechanical means.

(249) "Sump pump" means an automatic device located in a sump, pit, or low point that is designed to elevate storm water, groundwater, or clear water.

(250) "Sump vent" means a vent pipe from a nonpressurized sump.

(251) "Supports" means hangers, anchors, and other devices for supporting and securing pipes or fixtures to structural members of a building.

(252) "Surface water" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, impounding reservoirs, marshes, water courses, drainage systems, and other surface water, natural or artificial, public or private within the state or under its jurisdiction, except those waters which are entirely confined and completely retained upon the property of a facility.

(253) "Swimming pool" means a structure, basin, chamber, or tank containing an artificial body of water for swimming, diving, or recreational bathing.

(254) "Temperature and pressure relief valve" means a combination relief valve designed to function as both a temperature relief and pressure relief valve.

(255) "Temperature relief valve" means a temperature actuated valve designed to automatically discharge at a designated temperature.

(256) "Tempered water" means water ranging in temperature from 85°F. to less than 110°F.

(256e) "Ten-year, 24-hour storm" or "10-year, 24-hour storm" means a discrete rain storm event characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total depth of rainfall.

Note: The frequency, intensity, and duration of rainfall varies considerably during a storm by geographic location. Precipitation frequency atlases, NOAA Atlas 2, have been prepared by the National Oceanic and Atmospheric Administration (NOAA), National Weather Service. In chapter SPS 382, this value may be expressed as a specific "design storm". The calculated volume of rainfall, or stormwater, may be determined from this value and used to calculate peak discharge.

(257) "Total suspended solids" or "TSS" means solids in wastewater that can be removed readily by standard filtering procedures in a laboratory and reported as milligrams per liter (mg/L).

(259) "Trap" means a fitting, device or arrangement of piping so designed and constructed as to provide, when properly vented, a liquid seal which prevents emission of sewer gases without materially affecting the flow of wastewater through it.

(260) "Trap seal" means the vertical distance between the top of the trap weir and the top of the dip separating the inlet and outlet of the trap.

(261) "Trap seal primer, water supply fed" means a type of valve designed to supply water to the trap in order to provide and maintain the water seal of the trap.

(262) "Trap weir" means that part of a trap that forms a dam over which wastes must flow to enter the drain piping.

(263) "Turf sprinkler system" means a system of piping, appurtenances and devices installed underground to distribute water for lawn or other similar irrigation purposes.

(264) "Unsaturated soil" means soil in which the pore spaces contain water at less than atmospheric pressure, as well as air and other gases.

(265) "Vacuum" means any pressure less than that exerted by the atmosphere.

(265e) "Vacuum breaker tee" means an assembly of fittings designed to eliminate the possibility of back siphonage in a system by allowing air to enter through a tee fitting.

(266) "Vacuum relief valve" means a device that admits air into the water distribution system to prevent excessive vacuum in a water storage tank or heater.

(267) "Vent" means a part of the plumbing system used to equalize pressures and ventilate the system.

(268) "Vent header" means a branch vent which connects ~~2~~ two or more stack vents or vent stacks or both and extends to the outside air.

(269) "Vent stack" means a vertical vent pipe that provides air for a drain stack of ~~5~~ five or more branch intervals.

(270) "Vent system" means a pipe or pipes installed to provide a flow of air to or from a drain system, or to provide a circulation of air within the system to protect trap seals from siphonage and back pressure.

(271) "Vertical pipe" means any pipe or fitting which makes an angle of 45º degrees or less with the vertical.

(272) "Wall hydrant, freeze resistant automatic draining type vacuum breaker" means a type of device which is designed and constructed with anti-siphon and back pressure preventive capabilities and with means for automatic post shut-off draining to prevent freezing.

(273) "Wall mounted water closet" means a water closet attached to a wall in such a way that it does not touch the floor.

(273e) "Washer sanitizer" means a plumbing appliance used for washing and disinfecting equipment.

(274) "Waste" means the discharge from any fixture, appliance, area, or appurtenance.

(275) "Waste sink" means a receptor for the discharge from indirect or local waste piping installed with its flood level rim above the surrounding floor.

(276) "Wastewater" means clear water, storm water, domestic wastewater, industrial wastewater, sewage, or any combination of these.

(277) "Wastewater, treated" means the effluent conveyed through one or more POWTS treatment components to a POWTS dispersal component.

(277e) "Wastewater treatment device" means a device or method that is intended to beneficially alter the characteristics of wastewater.

(278) "Water closet" means a water-flushed plumbing fixture designed to receive human excrement directly from the user of the fixture.

(279) "Water conditioner" means an appliance, appurtenance or device used for the purpose of ion exchange, demineralizing water, or other methods of water treatment.

(280) "Water distribution system" means that portion of a water supply system from the outlet of the building control valve to the connection of a fixture supply connector, plumbing fixture, plumbing appliance, water-using equipment, or other piping systems to be served.

(281) "Water heater" means any heating device with piping connections to the water supply system that is intended to supply hot water for domestic or commercial purposes other than space heating.

(281m) "Water operator−in−charge" means the person designated by the owner of the building waterworks to be directly responsible for the day−to−day operations of the waterworks.

~~Note: Per NR 114.03(15), "waterworks" means a community water system owned by, or a private utility serving, a county, city, village, town, town sanitary district, utility district or a county−owned or state−owned public institution for congregate care or correction, which includes correctional institutions, correctional camp systems, county jails or houses of correction,~~

~~mental health institutes, schools for the handicapped, hospitals, infirmaries, and asylums.~~

(282) "Water service" means that portion of a water supply system from the water main or private water supply up to and including the building control valve.

(283) "Waters of the state" has the meaning specified under s. 281.01 (18), Stats.

~~**Note:** Section 281.01 (18), Stats., reads:~~

~~"Waters of the state" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private within the state or under its jurisdiction.~~

(284) "Water supply system" means the piping of a private water main, water service and water distribution system, fixture supply connectors, fittings, valves, and appurtenances through which water is conveyed to points of usage such as plumbing fixtures, plumbing appliances, water using equipment or other piping systems to be served.

(285) "Water treatment device" means a device which does any of the following:

(a) Renders inactive or removes microbiological, particulate, inorganic, organic or radioactive contaminants from water which passes through the device or the water supply system downstream of the device~~; or~~.

(b) Injects into the water supply system gaseous, liquid, or solid additives other than water, to render inactive microbiological, particulate, inorganic, organic, or radioactive contaminants.

(286) "Wetland" has the meaning given in s. 23.32 (1), Stats.

(287) "Wetland, constructed" means a man-made design complex of saturated substrates, emergent and submergent vegetation, and water that simulate natural wetlands for human use and benefits.

(288) "Wet vent" means that portion of a vent pipe that receives the discharge from other fixtures.

(288e) "Whirlpool" has the meaning as specified under s. SPS 390.03 (23) (j).

~~**Note:** Section SPS 390.03 (23) (j) reads:~~

~~"Whirlpool" means a relatively small public swimming pool that uses high temperature water (greater than 93°F) and that may include a water agitation system. A whirlpool may also be referred to as a spa.~~

~~**Note:** A fill and dump bathtub is not a whirlpool.~~

(288m) "Whirlpool bath tub" means a plumbing appliance consisting of a bathtub fixture that is equipped and fitted with a circulation piping system designed to accept, circulate, and discharge bathtub water upon each use.

(288s) "Yard hydrant" means a device with a water supply or faucet that has a valve control and outlet above ground and a connection to the water supply system below ground.

(289) "Yoke vent" means a vent connected to a drain stack for the purpose of preventing pressure changes in the drain stack.

History: Cr. Register, April, 2000, No. 532, eff. 7-1-00; cr. (7e), (17e), (60e), (67e), (67m), (82m), (90e), (163e), (170e), (199e), (209e), (209m), (252e), (288e) and (288m), am. (18), (20), (79), (80), (189), (203) and (204), r. and recr. (116), Register, December, 2000, No. 540, eff. 1-1-01; CR 01-139: am. (209) Register June 2002 No. 558, eff. 7-1-02; corrections in (152) and (154) made under s. 13.93 (2m) (b) 7., Stats., Register June 2002 No. 558; CR 02-002: am. (7e), (42), (44), (46), (56), (80), (84), (90e), (120), (134), (147), (178), (181), (193), (195), (210), (245), (246), (247), and (276), cr. (7m), (35m), (51m), (56e), (61m), (62m), (65m), (72e), (90m), (108m), (160m), (187e), (212e), (214m), (265e), (273e), and (277e), r. and recr. (249) Register April 2003 No. 568, eff. 5-1-03; CR 02-129: cr (2m) and (168m) Register January 2004 No. 577, eff. 2-1-04; CR 04-035: cr. (59m), (59s), (62s), (70m), (129s), (133s), (136s), (171e), (186s) and (256e), am. (234) and (269) Register November 2004 No. 587, eff. 12-1-04; CR 07-100: cr. (163s) Register September 2008 No. 633, eff. 10-1-08; correction in (288e) made under s. 13.92 (4) (b) 7., Stats., Register September 2008 No. 633; CR 08-055: am. (5), (79), (115), (120), (147), (156), (189), (204), (234), (269) and (288), r. (20), (67e), (67m), (199e), (209e), (209m), (252e) and (258), cr. (80m), (82e), (108s), (203m) and (231m), r. and recr. (80), (151) to (154), (163) and (203) Register February 2009 No. 638, eff. 3-1-09; corrections in (286) and (288e) made under s. 13.92 (4) (b) 7., Stats., and corrections to numbering of (80m), (108s) and (203m) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; CR 10-064: r. and recr. (35), am. (116), (166), renum. (160m) to be (160e), cr. (62e), (154m), (160m) Register December 2010 No. 660, eff. 1-1-11; correction in (intro.), (7e), (69), (88), (91), (170), (214), (237), (288e) made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672; CR 11-031: r. (51), renum. (51m) to (51), cr. (209m) Register June 2013 No. 690, eff. 7-1-13; CR 13-062: renum. (141) to (141) (intro.) and am., cr. (141) (a) to (c) Register February 2014 No. 698, eff. 3-1-14; EmR1703: emerg. cr. (50g), (50r), eff. 2-6-17; CR 17-017: cr. (50g), (50r) Register March 2018 No. 747, eff. 4-1-18; **CR 17-065: cr. (13m), am. (92), cr. (93m), (183m), am. (194) Register June 2018 No. 750, eff. 7-1-18; correction in numbering (183m) under s. 13.92 (4) (b) 1., Stats., Register June 2018 No. 750.**

SPS 381.20 Incorporation of standards by reference.

(1) CONSENT. (a) Pursuant to s. 227.21 (2), Stats., the attorney general 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 and the legislative reference bureau. Copies of the standards may be purchased through the respective organizations listed in Tables 381.20-1 to 381.20-13.

(2) ALTERNATE STANDARDS. (a) Alternate standards that are equivalent to or more stringent than the standards referenced in chs. SPS 381 to ~~387~~ 386 (Note to LRB: change to take effect after ch. 387 is repealed) may be used in lieu of the referenced standards when approved by the department or if written approval is issued by the department in accordance with par. (b).

1. Upon receipt of a fee and a written request, the department may issue an approval for the use of the alternate standard.

2. The department shall review and make a determination on an application for approval within 40 business days of receipt of all forms, fees, and documents required to complete the review.

Note: Review fees for standards under this paragraph are listed in ch. SPS 302.

(b) Determination of approval shall be based on an analysis of the alternate standard and the standard referenced in chs. SPS 381 to ~~387~~ 386 (Note to LRB: change to take effect after ch. 387 is repealed), prepared by a qualified independent third party or the organization that published the standard contained in chs. SPS 381 to ~~387~~ 386 (Note to LRB: change to take effect after ch. 387 is repealed).

(c) The department may include specific conditions in issuing an approval, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of chs. SPS 381 to ~~387~~ 386 (Note to LRB: change to take effect after ch. 387 is repealed).

(d) If the department determines that the alternate standard is not equivalent to or more stringent than the referenced standard, the request for approval shall be denied in writing.

(e) The department may revoke an approval for any false statements or misrepresentations of facts on which the approval was based.

(f) The department may reexamine an approved alternate standard and issue a revised approval at any time.

(3) ADOPTION OF STANDARDS. The standards referenced in Tables 381.20-1 to 381.20-13 are incorporated by reference into ~~this chapter~~ chs. 381 to 386.

Note: The tables in this section provide a comprehensive listing of all of the standards adopted by reference in chs. SPS 381 to ~~387~~ 386 (Note to LRB: change

to take effect after ch. 387 is repealed). For requirements or limitations in how these standards are to be applied, refer to the code section that requires compliance with the standard.

(Revisions to Standard Tables are pending.)

(4) DEPARTMENT AUTHORITY. A department interpretation of an adopted standard under this chapter shall supersede any differing interpretation by either a lower level jurisdiction or an issuer of the adopted standard.

DRAFT (v2) – Subject to Change

(This draft is intended for committee use only and is not an official rule draft.)

Chapter SPS 382

DESIGN, CONSTRUCTION, INSTALLATION, SUPERVISION, MAINTENANCE AND INSPECTION OF PLUMBING

SPS 382.01 Scope.
SPS 382.015 Purpose.
SPS 382.03 Application.

Subchapter I — Intent and Basic Requirements
SPS 382.10 Basic plumbing principles.

Subchapter II — Administration and Enforcement
SPS 382.20 Plan review and cross connection control assembly registration.
SPS 382.21 Testing and inspection.
SPS 382.22 Maintenance and repairs.

Subchapter III — Drain and Vent Systems
SPS 382.30 Sanitary drain systems.
SPS 382.31 Vents and venting systems.
SPS 382.32 Traps and direct fixture connections.
SPS 382.33 Indirect and local waste piping.
SPS 382.34 Wastewater treatment and holding devices.
SPS 382.35 Cleanouts.
SPS 382.36 Stormwater and clearwater plumbing systems.
SPS 382.365 Stormwater and clearwater subsurface infiltration plumbing systems.
SPS 382.37 Sanitation facilities and campgrounds.
SPS 382.38 Discharge points.

Subchapter IV — Water Supply Systems
SPS 382.40 Water supply systems.
SPS 382.41 Cross connection control.

Subchapter V — Special Plumbing Installations
SPS 382.50 Health care and related facilities.
SPS 382.51 Manufactured homes and manufactured home communities.

Subchapter VI — Installation
SPS 382.60 Pipe hangers and supports.

Subchapter VII — Plumbing Treatment Standards
SPS 382.70 Plumbing treatment standards.

Note: Sections ILHR 82.01 to 82.25, 82.15 and 82.17 to 82.25 as they existed on February 28, 1985 were repealed and new sections ILHR 82.01 to 82.36 and 82.51 and 82.60 were created effective March 1, 1985. Chapter ILHR 82 was renumbered chapter Comm 82 under s. 13.93 (2m) (b) 1., Stats. and corrections made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1997, No. 494. Chapter Comm 82 was renumbered chapter SPS 382 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

SPS 382.01 **Scope.** The provisions of this chapter apply uniformly to the design, construction, installation, supervision, maintenance, and inspection of plumbing, including ~~but not limited to~~ sanitary and storm drainage, water supplies, wastewater treatment, and dispersal or discharge for buildings, except for POWTS systems as regulated by ch. SPS 383.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; CR 02-002: am. Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. Register January 2004 No. 576, eff. 2-1-04; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.015 **Purpose.** Pursuant to s. 145.02, Stats., the purpose of this chapter is to provide that all plumbing in connection with buildings and facilities in the state, including buildings owned by the state or any political subdivision thereof, shall be safe, sanitary, and such as to safeguard the public health and the waters of the state.

History: CR 02-002: cr. Register April 2003 No. 568, eff. 5-1-03.

SPS 382.03 **Application.** **(1)** The provisions of this chapter are not retroactive, unless specifically stated otherwise in the rule.

(2) Pursuant to s. 145.13, Stats., this chapter is uniform in application and a municipality may not enact an ordinance for the design, construction, installation, supervision, maintenance, and inspection of plumbing which is more stringent than this chapter, except as specifically permitted by rule.

(3) A department interpretation of the requirements in this chapter shall supersede any differing interpretation by a lower level jurisdiction. A department decision on the application of the requirements in this chapter shall supersede any differing decision by a lower level jurisdiction.

Note: A decision of the department may be appealed. Section 101.02 (6) (e), Stats., outlines the procedure for submitting requests to the department for appeal hearings and the department procedures for hearing appeals.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; CR 02-002: renum. to be (1), cr. (2) Register April 2003 No. 568, eff. 5-1-03; CR 07-100: cr. (3) Register September 2008 No. 633, eff. 10-1-08.

Subchapter I — Intent and Basic Requirements

SPS 382.10 **Basic plumbing principles.** This chapter is founded upon basic principles of environmental sanitation and safety through properly designed, installed, and maintained plumbing systems. Some of the details of plumbing construction may vary, but the basic sanitary and safety principles desirable and necessary to protect the health of people are the same. As interpretations may be required and as unforeseen situations arise which are not specifically addressed, the following intent statements and basic requirements shall be used to evaluate equivalency where applicable:

(1) INTENT. (a) Plumbing in connection with all buildings, public and private, intended for human occupancy, shall be installed, and maintained in such a manner so as to protect the health, safety, and welfare of the public or occupants and the waters of the state.

(b) Plumbing fixtures, appliances, and appurtenances, whether existing or to be installed, shall be supplied with water in sufficient volume and at pressures adequate to enable the fixtures, appliances, and appurtenances to function properly and efficiently at all times and without undue noise under normal

conditions of use. Plumbing systems shall be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

(c) Devices for heating and storing water in pressure vessels or tanks shall be so designed and installed as to prevent dangers of explosion or overheating.

(d) Drain systems shall be designed, constructed, and maintained so as to conduct the wastewater or sewage efficiently and shall have adequate cleanouts.

(e) The drain systems shall be so designed as to provide an adequate circulation of air in all pipes and no danger of siphonage, aspiration, or forcing of trap seals under conditions of ordinary use.

(f) A plumbing system shall be of durable material, free from defective workmanship, and designed and constructed so as to provide satisfactory service for its reasonable expected life.

(g) Proper protection shall be provided to prevent contamination of food, water, sterile goods, and similar materials by backflow of wastewater.

(h) All plumbing fixtures shall be installed so as to provide adequate spacing and accessibility for the intended use and cleaning.

(2) BASIC REQUIREMENTS. (a) Every building intended for human occupancy shall be provided with an adequate, safe, and potable water supply.

(b) To fulfill the basic needs of sanitation and personal hygiene, each dwelling, except for camping units, connected to a POWTS or public sewer shall be provided with at least the following plumbing fixtures: ~~one water closet, one wash basin, one kitchen sink and one bathtub or shower, except a system or device recognized under ch. SPS 391 may be substituted for the water closet. All other structures for human occupancy shall be equipped with sanitary facilities in sufficient numbers as specified in chs. SPS 361 to 366.~~

1. One water closet or a system or device recognized under ch. SPS 391.
2. One wash basin.
3. One kitchen sink.
4. One bathtub or shower.

(bm) All other structures for human occupancy shall be equipped with sanitary facilities in sufficient numbers as specified in chs. SPS 361 to 366.

(c) Hot or tempered water shall be supplied to all plumbing fixtures that normally require hot or tempered water for proper use and function.

(d) Where plumbing fixtures exist in a building that is not connected to a public sewer system, suitable provision shall be made for treating, recycling, dispersing, or holding the wastewater.

(e) Plumbing fixtures shall be made of durable, smooth, non-absorbent, and corrosion resistant material, and shall be free from concealed fouling surfaces.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; correction in (3) made under s. 13.93 (2m) (b) 7., Stats; am. (2), Register, August, 1991, No. 428, eff. 9-1-91; am. (3), Register, March, 1992, No. 435, eff. 4-1-92**;** r. (7) and renum. (8) to (15) to be (7) to (14), Register, February, 2000, No. 530, eff. 3-1-00; am. (2), (7) and (12), r. and recr. (3) and r. (14), Register, April, 2000, No. 532, eff. 7-1-00; CR 01-139: am. (3) Register June 2002 No. 558, eff. 7-1-02; CR 02-002: r. and recr. Register April 2003 No. 568, eff. 5-1-03; correction in (2) (b) made under s. 13.92 (4) (b) 7., Stats., Register February 2008 No. 626; correction in (2) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter II — Administration and Enforcement

SPS 382.20 **Plan review and cross connection control assembly registration. (1)** GENERAL. Plans and specifications shall be submitted to the department or to an approved agent municipality for review in accordance with pars. (a) and (b).

Note: The Department forms required in this chapter are available from the Division of Industry Services at P.O. Box 7162, Madison, WI 53707-7162; or at telephone (608) 266-2112 or (877) 617-1565 or 711 (Telecommunications Relay); or at the Division's Web site at http://dsps.wi.gov/programs/industry-services.

(a) *Department review.* ~~Plumbing~~ Except as provided in (bm), plumbing plans and specifications for the types of plumbing installations, except direct fixture replacements, listed in Table 382.20-1 shall be submitted to the department for review, regardless of where the installation is to be located. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.

(b) *Department or agent municipality review.* 1. ~~Plumbing~~ Except as provided in (bm), plumbing plans and specifications for the types of plumbing installations, except direct fixture replacements, listed in Table 382.20-2 ~~shall~~ may be submitted for review to an agent municipality, if the installation is to be located within the agent municipality or to the department~~, if the installation is not to be located within an agent municipality~~. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.

Note: For a listing of agent municipalities, see ch. SPS 382 Appendix A-382.20 (2).

Note: The number of plumbing fixtures to be submitted and reviewed by an agent municipality is a subject of local ordinances.

2. Plan review and approval of one- and 2-family dwellings. Review and approval of plumbing plans for one- and 2-family dwellings shall be in accordance with the provisions specified in s. SPS 320.09.

(bm) [*Title*] The department may grant approval for a permission to start. This approval permits in lieu of requirements specified in SPS 382.20 (a) and (b). A building owner may request and the department or its authorized representative may grant permission to start the installation of plumbing, to a maximum height of 18 inches above proposed finished floor elevation, upon submission of construction documents under s. SPS 382.20 (4) and application where a scheduled plan review date is greater than 10 business days.

1. The plumbing installations are limited to any of the following:
   a. Water service, private water main.
   b. Sanitary sewer, private interceptor main sewer.
   c. Storm sewer.
   d. The interior underfloor building drain, waste, and vent.
   e. The interior underfloor water distribution.
   f. The interior underfloor storm or clearwater building drain.

2. Permission to start will not include healthcare facilities as defined in s. SPS 381.01(116) or storm infiltration, detention, or retention.

3. The department shall review and make a determination on an application for permission to start the installation of

subsurface plumbing within five business days of receipt of the application and all forms, fees, construction documents, and information required to complete the review.

4. A building owner who has been granted permission to start plumbing installations may proceed at the owner's own risk without assurance that a conditional approval for the plumbing will be granted. A building owner shall be held responsible for any changes required after plans have been reviewed, and to remove or replace any non-code complying plumbing installations.

5. The provisions of SPS 382.21 apply.

(c) *Cross connection control assembly registration.* The installation of each reduced pressure principle backflow preventer, reduced pressure principle fire protection ~~principle~~ backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly or pressure vacuum breaker shall be registered with the department no later than ~~7~~ seven days after installation of the assembly.

Table 382.20-1
Submittals ~~To~~ to Department

Type of Plumbing Installation
1. All plumbing, new installations, additions, and alterations, regardless of the number of plumbing fixtures involved, serving hospitals, nursing homes, ~~and~~ ambulatory surgery centers, renal dialysis centers, CBRFs, and inpatient hospice.[a, c]
2. Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by a metropolitan or sanitary sewer district.[b]
3. Plumbing, new installations, additions and alterations involving 16 or more plumbing fixtures, serving buildings owned by the state.[b]
4. Alternate and experimental plumbing systems.
5. Reduced pressure principle backflow preventers, ~~reduced pressure fire protection principle~~ double check backflow ~~preventers~~prevention assemblies, pressure vacuum breaker assemblies, ~~reduced pressure detector fire protection backflow prevention assemblies,~~ and spill resistant vacuum breakers serving health care ~~and related~~ facilities.
6. Stormwater and clearwater detention, treatment, and infiltration plumbing systems serving a public building or facility.[c]
7. Treatment systems, other than POWTS, designed to treat water for compliance with Table 382.70-1.[c]
8. Potable water storage systems
9. Potable water treatment systems designed to treat or maintain water for compliance with Table 382.70-1.
10. Potable water treatment by use of injection of a solution into the water supply system.[d]
11. Medical or high purity water.
12. Mixed wastewater holding device.[c]
13. Multipurpose piping systems (MPP).[d]

[a] The registration of cross connection control ~~devices~~ assemblies as required under s. SPS 382.20 (1) (c) is included as a part of plan review and approval.

[b] For the purpose of plan review submittal, water heaters, floor drains, storm inlets, roof drains, multi-purpose piping (mpp) fire sprinklers, and hose bibbs are to be included in the count.

c Agent municipalities may perform this review when so authorized by the department.

d. Excludes one-and 2-family dwellings.

Table 382.20-2
Submittals ~~To~~ to Department ~~Or~~ or Agent Municipality

Type of Plumbing Installation
1. New installations, additions, and alterations to drain systems, vent systems, water service systems, and water distribution systems involving 16 or more plumbing fixtures to be installed in connection with public buildings.[a,b]
2. Grease interceptors to be installed for public buildings.
3. Garage catch basins, carwash interceptors and oil interceptors to be installed for public buildings and facilities.
4. Sanitary dump stations.
5. Piping designed to serve as private water mains.
6. Water supply systems and drain systems to be installed for manufactured home communities and campgrounds.[c]
7. Piping designed to serve as private interceptor main sewers greater than 4 inches in diameter when sized for gravity flow.
8. Chemical waste systems regardless of the number of plumbing fixtures.[c]
9. Stormwater systems, not including infiltration plumbing systems, serving a public building or facility where the drainage area is one acre or more.[d]
~~10. Mixed wastewater holding device.~~

[a] For the purposes of plan review submittal, water heaters, floor drains, storm inlets, roof drains, multi-purpose piping (MPP) fire sprinklers, and hose bibbs are to be included in the count. For a phased project such as a mall or office complex, fixture count includes all proposed fixtures connected to a common building sanitary sewer, a common water service, and all storm sewers serving the building.

[b] For the purpose of plan submittal, public buildings do not include zero-lot-line row houses where each living unit is served by an individual water service and an individual building sewer.

[c] Only agent municipalities which are cities of the first class may review these types of installations.

[d] Plan review involving 16 or more plumbing fixtures also applies.

(2) AGENT MUNICIPALITIES. The department may designate to an approved municipality the authority to review and approve plumbing plans and specifications for those plumbing installations to be located within the municipality's boundary limits and which require approval under sub. (1) (b).

(a) An agent municipality shall utilize a plumbing inspector qualified by the department to conduct plumbing inspection and plan review at a staffing level based on local need.

1. The primary duties of the plumbing inspectors shall include plumbing plan review.

2. The plumbing inspectors shall be Wisconsin licensed master or journeyman plumbers.

Note: ~~For a listing of agent municipalities, see Appendix A-382.20 (2) or http://dsps.wi.gov/Documents/Industry%20Services/Forms/Plumbing/Industry%20Services%20Division%20Plumbing%20Agent%20Municipalities.pdf.~~

A listing of agent municipalities is included in Appendix A-382.20 (2) and on the department's website at: dsps.wi.gov.

(b) An agent municipality may waive its jurisdiction for plan review and approval for any project, in which case plans shall be submitted to the department for review and approval.

(c) Agent municipalities may set by ordinance the fees for plan review services.

(d) Agent municipality appointments shall be renewed every five years.

(3) PRIORITY PLAN REVIEW. An appointment may be made with the department to facilitate the examination of plans in less

than the normal processing time. Complete plans along with the fee specified in s. SPS 302.09, shall be submitted to the department. The plans shall comply with all of the provisions of this section.

(4) PLANS AND SPECIFICATIONS. (a) At least ~~2~~ two sets of plans and one copy of specifications which are clear, legible, and permanent copies shall be submitted for examination and approval.

(b) All plans submitted for approval shall be accompanied by sufficient data and information for the department to determine if the installation and its performance will meet the requirements of chs. SPS 381 to 384.

1. Information to accompany the plans shall include the location or address of the installation and the name of the owner.

1m. Plans proposing the installation, creation, or extension of a sanitary private interceptor main sewer that is to discharge to a municipal treatment facility shall be accompanied by a letter from the appropriate designated planning or management agency indicating conformance with an approved area wide water quality management plan under ch. NR 121.

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

~~a. Be accompanied by a letter from the appropriate designated planning or management agency indicating conformance with an approved areawide water quality management plan under ch. NR 121; and~~

~~b. Not be approved, if the municipality is ineligible for sanitary sewer extension approvals under s. NR 110.05.~~

~~**Note:** For plans proposing the installation, creation or extension of a private interceptor main sewer which is to discharge to a municipal treatment facility, see also ch. NR 121.~~

~~3. Except as provided in subd. 4., plans proposing the installation of a building sewer for new construction which is to discharge to a municipal treatment facility shall:~~

~~a. Be accompanied by a letter from either the appropriate designated management agency or sanitary district indicating conformance with an approved areawide water quality management plan; and~~

~~b. Not be approved, if the municipality is ineligible for sanitary sewer extension approvals under s. NR 110.05.~~

~~4. Plans proposing the installation of a building sewer for new construction which is to discharge to a municipal treatment facility shall not be required to comply with subd. 3., if:~~

~~a. The proposed installation is served by an existing building sewer which extends from the lot line to the public sewer and the proposed installation does not exceed the capacity of the existing building sewer or sewers; or~~

~~b. The plans indicate that a drainage load of not more than 54 drainage fixture units will be discharged through the building sewer.~~

Note: See ch. SPS 382 Appendix for listing of water quality management agencies.

(c) Plumbing plans, index sheets, and specifications for a plumbing system submitted for review and approval shall be signed in accordance with any of the following methods:

1. A Wisconsin registered architect, engineer, or plumbing designer shall sign and seal or stamp all plans and accompanying specifications in accordance with ch. A-E 2.

2. A master plumber, master plumber-restricted service, master plumber-restricted appliance, or a utility contractor shall sign and date all plumbing plans and accompanying specifications as provided under s. 145.06, Stats. Each sheet of plans and specifications submitted shall be signed and dated and shall include the valid Wisconsin license number of the individual responsible for the installation. Where more than one sheet is bound together into one volume, only the title sheet or index sheet shall be signed and dated by the individual responsible for the installation. The signed title or index sheet shall clearly identify all of the other sheets in the volume.

3. A pump installer shall sign and date all plumbing plans and accompanying specifications for which the individual is responsible for the installation. Each sheet of plans and specifications submitted shall be signed and dated and shall include the valid Wisconsin license number of the individual responsible for the installation. Where more than one sheet is bound together into one volume, only the title sheet or index sheet shall be signed and dated by the individual responsible for the installation. The signed title or index sheet shall clearly identify all of the other sheets in the volume.

(d) 1. When requesting approval of an experimental plumbing system, all of the following shall be submitted:

a. At least ~~2~~ two sets of plans signed in accordance with par. (d) and detailing the system installation for each site.

b. A letter of consent from the site or system owner of the installation. The letter shall acknowledge that the owner has received and read a copy of the experimental plumbing system submittal and is in agreement with all requirements listed within this subdivision.

c. Any additional information as requested by the department.

2. The registered architect, engineer, designer, or master plumber responsible for the design of the experimental plumbing system shall, upon completion, certify in writing to the department that the installation is in compliance with the approved plans, specifications, and data.

3. Onsite inspections shall be performed by the department at time intervals as specified by the department, but not less than once a year. Time intervals shall be included as conditions of approval. An inspection report shall be written. The department may assess a fee for each inspection.

Note: Refer to ch. SPS 302 for applicable fees.

4. No later than five years after the date of the completed installation the department may perform one of the following:

a. Order the removal of the experimental plumbing system.

b. Issue an alternate approval as specified in sub. (12) (a).

c. Provide an extension of the experiment with conditions.

5. If an experimental plumbing system is subsequently codified in chs. SPS 382 and 384, or ch. 145, Stats., the requirements as specified in subds. 3. and 4. do not apply.

(5) PLAN REVIEW. Except as provided in sub. (12), and pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(a) *Conditional approval.* If, upon review, the department determines that the plans substantially conform to the provisions of chs. SPS 382 to 384, a conditional approval, in writing, shall be granted. All noncode complying conditions stated in the conditional approval shall be corrected before or during installation.

(b) *Denial of approval.* If, upon review, the department determines that the plans do not substantially conform to the provisions of chs. SPS 382 to 384, the request of conditional approval shall be denied in writing.

(6) EVIDENCE OF APPROVAL. The plumber responsible for the installation of the plumbing shall keep at the construction site at least one set of plans bearing the department's or the agent municipality's stamp of approval and at least one copy of specifications. The plans and specifications shall be open to inspection by an authorized representative of the department.

(7) FEES. Fees for plumbing plan review and petition for variance shall be submitted in accordance with ss. SPS 302.52 and 302.64 ~~and 302.52~~.

(8) REVISIONS. All changes or modifications, which involve the provisions of chs. SPS 382 to 384, made to plumbing plans and specifications, which have been granted approval under sub. (1), shall be submitted to the department or agent municipality for examination. All changes and modifications shall be approved in writing by the department or agent municipality prior to installation of the plumbing.

(9) REVOCATION OF APPROVAL. The department may revoke any approval, issued under the provisions of this chapter, for any false statements or misrepresentation of facts on which the approval was based.

(10) DEPARTMENT LIMITATION AND EXPIRATION OF APPROVAL. (a) A conditional approval of a plan by the department shall not be construed as an assumption by the department of any responsibility for the design; and the department does not hold itself liable for any defects in construction, nor for any damages that may result from the specific installation.

(b) Plan approval by the department or its authorized representative shall expire ~~2~~ two years after the date indicated on the approval letter, if construction has not commenced within that ~~2~~ two-year period.

(11) PETITION FOR VARIANCE. (a) *Procedure.* The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303.

Note: Chapter SPS 303 requires the submittal of a petition for variance form (SBD-9890) and a fee, and that an equivalency is established in the petition for variance that meets the intent of the rule being petitioned. Chapter SPS 303 also requires the department to process regular petitions within 30 business days and priority petitions within 10 business days.

Note: Form SBD-9890 is available from the Department's Division of Industry Services at P.O. Box 7162, Madison, WI 53707-7162; or at telephone (608) 266-2112 or (877) 617-1565 or 711 (Telecommunications Relay); or at the Division's Web site at http://dsps.wi.gov/programs/industry-services.

(b) *Petition processing time.* Except for priority petitions, the department shall review and make a determination on a petition for variance within 30 business days of receipt of all calculations, documents and fees required to complete the review. The department shall process priority petitions within 10 business days.

Note: Form SBD-9890 is available from the Department's Division of Industry Services at P.O. Box 7162, Madison, WI 53707-7162; or at telephone (608) 266-2112 or (877) 617-1565 or 711 (Telecommunications Relay); or at the Division's Web site at http://dsps.wi.gov/programs/industry-services.

(12) ALTERNATE AND EXPERIMENTAL PLUMBING SYSTEM REVIEW AND APPROVAL. The provisions of this chapter, ch. SPS 384, or ch. 145, Stats., are not intended to prevent the design and use of approved innovative plumbing systems.

(a) *Alternate plumbing systems.* The department may issue an approval of an alternate plumbing system if the system complies with the intent of chs. SPS 382 and 384, or ch. 145, Stats.

1. For an alternate plumbing system, before availability for statewide installation and use, an alternate plumbing system approval shall be issued. Concepts, plans, specifications, and the documentation to support the system design shall be submitted to the department for review.

2. The department may require the submission of any information deemed necessary for review. Sufficient evidence shall be submitted to substantiate at least the following:

a. Assertions of function and performance.

b. Compliance with the intent of chs. SPS 382 and 384, or ch. 145, Stats.

3. Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for an alternate plumbing system within ~~3~~ three months. Approval for an alternate plumbing system shall be issued by the department in writing.

4. The department may include specific conditions in issuing an approval for an alternate plumbing system, including an expiration date for the approval. A violation of any of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. If upon review the department determines that an alternate plumbing system does not comply with the intent of chs. SPS 382 and 384, or ch. 145, Stats., the request for approval shall be denied in writing.

(b) *Experimental plumbing systems.* The department may issue an approval of an experimental plumbing system for the purpose of proving compliance with the intent of chs. SPS 382 and 384 and ch. 145, Stats.

1. For an experimental plumbing system, a separate approval shall be obtained for each system or project to be installed for the purpose of proving compliance with the intent of chs. SPS 382 and 384 and ch. 145, Stats. Approval for an experimental plumbing system shall be issued by the department in writing.

2. The department may require the submission of additional information deemed necessary for determining that the design meets the intent of chs. SPS 382 and 384 and ch. 145, Stats.

3. Pursuant to s. SPS 302.07 (3), the department shall review and make a determination on an application for an experimental plumbing system within ~~6~~ six months.

4. The department may include specific conditions in issuing an approval for an experimental plumbing system, including an expiration date for the approval. A violation of any of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. Denial of an experimental plumbing system or project by the department shall be made in writing.

6. The department may establish parameters to limit the number of applications for review it will accept for experimental plumbing systems.

(c) *Modification.* If an approved alternate or experimental plumbing system is modified or additional assertions of function or performance are made, the approval shall be void, unless the system is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentations of facts or data on which the approval was based, or as a result of system failure.

(e) *Limitations.* An approval issued by the department for an alternate or experimental plumbing system may not be construed as an assumption of any responsibility for defects in design, construction, or performance of any system nor for any damages that may result.

(f) *Fees.* Fees for the review of an alternate or experimental plumbing system under this section and any onsite inspections shall be submitted in accordance with ch. SPS 302.

(13) CROSS CONNECTION CONTROL ASSEMBLY REGISTRATION. (a) Registration, as specified in sub. (1) (c), shall be submitted in a format acceptable to the department.

Note: The Department forms required in this chapter are available from the Division of Industry Services at P.O. Box 7162, Madison, WI 53707-7162; or at telephone (608) 266-2112 or (877) 617-1565 or 711 (Telecommunications Relay); or at the Division's Web site at http://dsps.wi.gov/programs/industry-services.

(b) The form for registering cross connection control ~~devices and~~ assemblies with the department shall include at least all of the following information:

1. The building or facility name and address where the ~~device or~~ assembly is or will be installed.

2. The location of the cross connection control ~~device or~~ assembly within the building or facility.

3. A description of the cross connection control ~~device or~~ assembly including the size, model number, serial number, and manufacturer.

4. The name of the owner or owner's agent submitting the registration form and contact information.

(c) Each registration form submitted shall be accompanied by the appropriate fee in accordance with s. SPS 302.645.

(d) Upon receipt of a completed registration form, the department shall issue written confirmation of registration including a department assigned identification number for each cross connection control ~~device or~~ assembly.

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

(f) The testing and calibration of test equipment shall be performed annually.

(14) PENALTIES. Penalties for violations of this chapter shall be assessed in accordance with s. 145.12, Stats.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; am. (1) (intro.), r. and recr. Tables 82.20-1 and 82.20-2, r. (5), renum. (6) to (12) to be (5) to (11), cr. (5) (intro.) and (12), Register, May, 1988, No. 389, eff. 6-1-88; correction in (1) (b) 1. made under s. 13.93 (2m) (b) 7., Stats., Register, May, 1988, No. 389; am. (4) (c) 2. intro. and 4. a. and b., Register, February, 1991, No. 422, eff. 3-1-91; am. (4) (c) 3.a., Register, August, 1991, No. 428, eff. 9-1-91; am. (1) (intro.), (a), (4) (a) to (c) 1., (5) (a), (b) and Tables 82.20-1 and 82.20-2, renum. (4) (d) and (e) to be (4) (d) 1. a. and b. and am. (4) (d) 1. a., cr. (4) (d) 2., Register, February, 1994, No. 458, eff. 3-1-94; correction in (7) made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1994, No. 458; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1996, No. 490; am. Tables 82.20-1, 2, (1) (b) 2., Register, February, 1997, No. 494, eff. 3-1-97; correction in (13) made under s. 13.93 (2m) (b) 7., Stats., Register, February, 2000, No. 530; am. Tables 82.20-1 and 82.20-2, r. (4) (b), Register, July, 2000, No. 535, eff. 9-1-00; cr. (4) (e), r. and recr. (11) and (12), am. Table 82.20-1, Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: am. (1) (intro.) and Tables 82.20-1 and 82.20-2, r. and recr. (1) (a), r. (1) (b) 2. and (4) (d), renum. (1) (b) (intro.), and 1., (4) (c), (e) and (13) to be (1) (b) 1. and 2., (4) (b), (d) and (14) and am. (4) (b) (intro.) and 2. (intro.), cr. (1) (c), (4) (c) and (13) Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. (title), (1) (intro) and (c), and (13) (e) Register January 2004 No. 577, eff. 2-1-04; CR 04-035: am. Tables 82.20-1 and 82.20-2 Register November 2004 No. 587, eff. 12-1-04; CR 06-119: am. (5) (intro.), (12) (a) 3. and (b) 3. Register July 2007 No. 619, eff. 8-1-07; CR 08-055: am. (1) (c) (intro.), (4) (b) 2. (intro.), (13) (e), Tables 82.20-1 and 82.20-2 Register February 2009 No. 638, eff. 3-1-09; correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 09-050: am. (1) (intro.), (b) 1. and Table 82.20-2, r. and recr. (1) (a), (c) and Table 82.20-1 Register December 2009 No. 648, eff. 1-1-10; CR 10-064: am. Tables 82.20-1 and 82.20-2 Register December 2010 No. 660, eff. 1-1-11; correction in (1) (a), (b) 1., 2., (3), (4) (b), (d) 5., (5) (intro.), (a), (b), (7), (8), (11) (a), (12) (intro.), (a) (intro.), 2. b., 3., 5., (b) (intro.), 1., 2., 3., (f), (13) (c), Table 382.20-1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 13-046: am. (2) (a) (intro.) Register December 2013 No. 696, eff. 1-1-14.

SPS 382.21 **Testing and inspection. (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 and inspected as specified in sub. (2) to disclose leaks and defects before the plumbing is put into operation.

(a) *Waiver of testing.* 1. The testing of the plumbing ~~shall~~ may not be required where the installation does not include the addition, replacement, alteration, or relocation of any water distribution, drain, or vent piping.

2. a. Field testing the installation of a storm building sewer and a storm private interceptor main sewer is not required.

b. The joints and connections to be employed for storm building sewer piping shall conform with s. SPS 384.40 (1) (a).

(b) ~~*Local inspection*~~*Inspections.* Where ~~the~~ plumbing is installed ~~in a municipality having a local inspector~~, the testing of the plumbing shall be done in the presence of a plumbing inspector, except as provided in subd. 1. b.

1. 'Notice of inspection.' a. The plumber responsible for the installation shall notify the plumbing inspector in person, by telephone, or in writing when the work is ready for inspection.

b. Except as permitted in par. (c), 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 plumber may proceed with the testing and the installation.

c. 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 ch. SPS 382 Appendix for a sample affidavit form.

2. 'Preparations for inspection.' When the installation is ready for inspection, the plumber shall make such arrangements as will enable the plumbing inspector to inspect all parts of the plumbing system. The plumber shall have present the proper apparatus and appliances for making the tests, and shall furnish such assistance as may be necessary in making the inspection. Inspections required in a confined space may require additional fees as specified in s. SPS 302.04.

3. 'Rough-in inspection.' A rough-in inspection shall be made when the plumbing system is roughed-in and before fixtures are set. Except as provided in subd. 1., plumbing work ~~shall~~ may not be closed in, concealed, or covered until it has been inspected and approved by the plumbing inspector and permission is granted to do so.

4. 'Final inspection.' a. Upon completion of the plumbing installation and before final approval is given, the plumbing inspector shall inspect the work.

b. Municipalities may require that a final test be conducted in accordance with sub. (2) (h) and that the final test, when required by the municipality, shall be observed by the plumbing inspector.

5. 'Reinspections.' Whenever the plumbing official finds that the work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this chapter. The work or installation shall then be resubmitted for inspection to the plumbing inspector.

(c) *Inspection of one-and 2-family dwellings.* The inspection of plumbing installations for one- and 2-family dwellings shall be in accordance with ss. SPS 320.08 to 320.11.

(d) The initial testing of cross connection control assemblies shall comply with s. SPS 382.22 (8).

(2) TESTING PROVISIONS. (a) *General.* The testing of plumbing installations shall be conducted in accordance with this paragraph.

1. 'Equipment, material and labor for tests.' All equipment, material and labor required for testing a plumbing system or part thereof shall be furnished by the plumber responsible for the installation.

2. 'Exposure of work.' Except as provided in pars. (b) and (e), all new, altered, extended, or replaced plumbing shall be left uncovered and unconcealed until it has been tested. Where the work has been covered or concealed before it is tested, it shall be exposed for testing.

(b) *Sanitary building sewer and sanitary private interceptor main sewer.* A sanitary building sewer and a sanitary private interceptor main sewer shall be tested for leaks and defects with water or air before or after being covered in accordance with either subd. 1. or 2. The test for leaks and defects may be applied to the entire building sewer or private interceptor main sewer or in sections. For the purposes of this subdivision, the testing of a building sewer or private interceptor main sewer is not required to include the manholes serving the sewer.

1. The building sewer or private interceptor main sewer shall be tested by insertion of a test plug at the point of connection with the public sewer. The sewer shall then be filled with water under a head of not less than 10 feet. The water level at the top of the test head of water shall not drop for at least 15 minutes.

2. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 3 pounds per square inch. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.

(c) *Building drain.* The entire building drain with all its branches, receptacles and connections shall be brought so far as practical to the surface or grade of the basement floor and shall be tested with water or air in accordance with par. (g).

(d) *Drain and vent systems.* The piping of a drain and vent systems, including conductors, shall be tested upon completion of the rough piping installation with water or air in accordance with par. (g).

(e) *Private water mains and water services.* Private water mains and water services shall be inspected before being covered. The private water mains and water services shall be tested and proven water tight under water pressure not less than the working pressure under which it is to be used. The water used for testing shall be obtained from a potable source of supply.

Note: Standard NFPA 24 for combination water services and combination private water mains may include more stringent requirements for testing.

(f) *Water distribution system.* The piping of a water distribution system shall be tested and proved water tight under a water pressure not less than the working pressure under which it is to be used. The water used for tests shall be obtained from a potable source of supply.

(g) *Test methods for drain and vent systems.* A test for watertightness shall be applied to the entire drain and vent system at one time or to the entire system in sections after the rough piping has been installed in accordance with either subd. 1. or 2.

1. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest opening of the section under test, and each section shall be filled with water, but a section shall not be tested with less than a 10-foot head of water. In testing successive sections, at least the upper 10 feet of the next preceding section shall be tested, so that no joint or pipe in the building, except the uppermost 10 feet of the system, is subjected to a test of less than a 10-foot head of water. The water shall be kept in the system or in the portion under test for at least 15 minutes before inspection starts. The system shall then be tight at all points.

2. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 5 pounds per square inch or sufficient to balance a column of mercury 10" inches in height. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.

(h) *Final test.* Where required by the local plumbing inspector, after the plumbing fixtures have been installed and the traps filled with water, the connections shall be tested and proved gas and watertight by either one of the methods specified in subd. 1. or 2.

1. The smoke test shall be made by introducing a pungent, thick smoke, produced by one or more smoke machines, into the completed system. When the smoke appears at stack openings on the roof, the openings shall be closed and a pressure equivalent to a one-inch water column shall be built and maintained for the period of the inspection.

2. The air test shall be made by attaching a gauge to any suitable opening and, after closing all other inlets and outlets in the system, adding air into the system until a pressure equivalent to a one-inch water column exists. The pressure shall remain constant for at least a ~~5~~ five-minute test period without the introduction of additional air.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; r. and recr. (1) (d) 5., am. (1) (d) 7. intro., Register, May, 1988, No. 389, eff. 6-1-88; correction in (1) (c) made under s. 13.93 (2m) (b) 7., Stats., Register, May, 1988, No. 389**;** renum. (1) (a) and (2) (b) to (i) to be (1) (a) 1. and (2) (a) to (h), r. (2) (a), cr. (1) (a) 2. and (3), r. and recr. (1) (d) 1. (intro.), am. (1) (d) 2. (intro.), Register, February, 1994, No. 458, eff. 3-1-94**;** am. (3) (b) 3., Register, October, 1996, No. 490, eff. 11-1-96; am. (3), Register, February, 1997, No. 494, eff. 3-1-97; r. and recr. (2) (a) and (3), cr. Table 82.21-1, Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: r. and recr. (1) (b) 4. b. and (2) (d), am. (1) (d) 8. b. Register April 2003 No. 568, eff. 5-1-03; CR 04-035: am. Table 82.21-1 Register November 2004 No. 587, eff. 12-1-04; CR 08-055: am. (title) and (1) (intro.), r. and recr. (1) (b) 1. b., r. (2) and Table 82.21-1, renum. (1) (d) and (3) to be (2) and Comm 82.22 (9) Register February 2009 No. 638, eff. 3-1-09; corrections in (1) (b) 4. b., (2) (a) 2., (b) (intro.), (c), (d), (g) (intro.) and (h) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 10-064: renum. (1) (b) 1. b. to be (1) (b) 1. c., cr. (1) (b) 1. b., (d) Register December 2010 No. 660, eff. 1-1-11; correction in (1) (a) 2. b., (c), (d) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.22 **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 maintain plumbing systems.

(2) EXISTING SYSTEMS. (a) Except as specified in par. (b), any existing plumbing system may 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. (a) When a fixture, appliance, or section of pipe is replaced, the replacement fixture, appliance, or pipe shall conform to the provisions of this chapter.

(b) 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 382.70–1.

(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 in accordance with s. SPS 384.40.

(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 382.22–1.

(b) 1. A performance test shall be conducted for the assemblies listed in Table 382.22–1 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 382.22–1.

3. A cross connection assembly performance test shall be conducted by an individual registered by the department in accordance with s. SPS 305.99.

4. a. The results of the cross connection control assembly performance test shall be submitted as specified in Table 382.22–1 in a format prescribed by the department accompanied by a filing fee as specified in s. SPS 302.645 (2).

b. As specified in Table 382.22–1, 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 382.22–1 shall be made available upon request to the department, its agent, or the local government unit.

Table 382.22-1
Testing ~~And~~ and Submitting Requirements ~~For~~ 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
Double Check Backflow Prevention Assemblies ASSE 1015	Double Check Valve Backflow Preventers CAN/CSA B64.5	5015	Yes
~~Double Check Backflow Prevention Assemblies and~~ Double Check Fire Protection Backflow Prevention Assemblies ASSE 1015	~~Double Check Valve Backflow Preventers CAN/CSA B64.5 and~~ Double Check Valve Backflow Preventers ~~For~~ 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 ASSE 1013	Reduced Pressure Principle Backflow Preventers CAN/CSA B64.4	5013	Yes
~~Reduced Pressure Principle Backflow Preventers and~~ Reduced Pressure Principle Fire Protection ~~Principle~~ Backflow Preventers ASSE 1013	~~Reduced Pressure Principle Backflow Preventers CAN/CSA B64.4 and~~ Reduced Pressure Principle Backflow Preventers ~~For~~for Fire Protection Systems CAN/CSA-B64.4.1	5013	~~Yes~~ No

Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies ASSE 1047	_ _ _ _ _ _ _	5047	~~Yes~~ No
Spill Resistant Vacuum Breaker Assemblies ASSE 1056	Spill Resistant Vacuum Breakers CAN/CSA B64.1.3	5056	Yes

History: CR 08-055: cr. (1) to (8) and Table 82.22-1, (9) renum. from Comm 82.21 (3) Register February 2009 No. 638, eff. 3-1-09; correction to numbering in (3) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; CR 09-050: am. (8) (b) 4. a. and Table 82.22-1, r. (9) Register December 2009 No. 648, eff. 1-1-10; correction in (4) (b), (8) (b) 1. (intro.), 2., 3., 4. a., b., 5. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter III — Drain and Vent Systems

SPS 382.30 **Sanitary drain systems. (1)** SCOPE. The provisions of this section set forth the requirements for the design and installation of sanitary drain systems, including building drains and building sewers.

Note: The provisions for storm and clear water drain systems are specified in s. SPS 382.36.

(2) MATERIALS. All sanitary drain systems shall be constructed of approved materials in accordance with ch. SPS 384.

(3) LOAD ON DRAIN PIPING. (a) *Intermittent flow.* 1. 'Fixture.' The load factor on drain piping shall be computed in terms of drainage fixture unit values specified in Table 382.30–1 for the corresponding listed fixture.

2. 'Devices.' Drainage fixture unit values for intermittent flow devices not listed in Table 382.30–1 shall be computed on the basis of one fixture unit ~~equalling~~ equaling one gallon per minute of flow.

~~**Note:** Equipment with a timed discharge cycle(s) of 2 minutes or less may be considered as an intermittent flow device.~~

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

Note: Equipment with a timed discharge cycle or cycles of two minutes or less may be considered as an intermittent flow device.

(4) SIZE OF DRAIN PIPING. (a) *Maximum loading.* ~~1.~~ The total drainage load in any portion of drain piping shall not exceed the limits specified in Tables 382.30-2 and 382.30-3.

~~2. The drainage fixture unit values assigned to a receptor which is to receive only the indirect waste discharge from a relief valve on a domestic water heater may be disregarded when determining the minimum size of the building drain and building sewer. Any drain piping between the receptor and the building drain shall be sized by including the assigned fixture unit values for the type of receptor.~~

Note: See s. SPS 382.31 (17) for sizing requirements of combination drain and vent systems.

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) *Minimum size of building sewers.* 1. 'Gravity flow sewers.' The minimum size of a gravity flow sanitary building sewer shall be ~~4"~~ 3 inches in diameter, except sewers serving camping units. Venting shall be according to s. SPS 382.41 based on DFU load. A municipality or sanitary district by ordinance may require that portion of the building sewer between the lot line and the public sewer to be larger than 4" inches in diameter.

2. 'Pressurized sewers.' a. Sewers pressurized through the use of sewage ejectors, sewage pumps, or sewage grinder pumps shall be sized to maintain a minimum flow velocity of 2 feet per second and shall be in accordance with the ejector or pump manufacturer's recommendations.

b. Pressurized building sewers shall be sized not less than 2" inches in diameter for sewage ejectors and sewage pumps, and 1¼" inches in diameter for all sewage grinder pumps.

(c) *Minimum size of private interceptor main sewers.* 1. Except as provided in subd. 3., the minimum size of a gravity flow private interceptor main sewer shall be 4" inches in diameter.

2. Except as provided in subd. 3., the minimum size of pressurized private interceptor main sewer shall be such so as to maintain a minimum flow velocity of 2 feet per second.

3. A municipality or a sanitary district may by ordinance, require the minimum size of a private interceptor main sewer to be larger than 4" inches in diameter.

4. Private interceptor main sewers 6" inches or less in diameter may not exceed the drainage fixture limits in Table 382.30-3.

5. Private interceptor main sewers 8" inches or larger in diameter shall conform with the design criteria specified in s. NR 110.13.

Note: See ch. SPS 382 Appendix A-382.30 (4) for further explanatory material.

(d) *Future fixtures.* Where provisions are made for the future installation of fixtures, the drainage fixture unit values of such fixtures shall be considered in determining the required sizes of drain and vent pipes. Construction to provide for future installations shall be terminated with a plugged fitting or fittings.

Table 382.30-1
Drainage Fixture Unit Values ~~By~~ by Fixture Type

Type of Fixture	Non-Public Drainage Fixture Units (dfu) [m]	Public Drainage Fixture ~~Unit Value~~ Units (dfu)	Minimum Trap Size ~~Minimum Diameter~~ (inches)
Automatic Clothes Washers:			
~~Commercial, individual~~ Commercial-type pump discharge		4	2
~~Commercial, large capacity~~ Commercial-type gravity discharge		a	a
~~Self Service Laundry~~		~~4~~	~~2~~
Residential-type pump discharge	3	~~4~~	2
Autopsy Table		[h] b	[h] b
Bathroom Group, includes~~:~~ a water closet, lavatory, and a bathtub or shower	5	~~6~~	
Bathtubs, all types[b,c]	2	2	1 1/2
Bedpan Washer		6	2
~~Beer Tap~~		~~1/2~~	~~1 1/4~~
Bidet	2	2	1 1/2
Bottle Cooler		1/2	1 1/4
Campsite Receptor		~~6~~ 5	4
~~Coffee Maker~~		~~1/2~~	~~1 1/4~~
Cuspidor, fountain or dental		1	1 1/4
~~Dipper Well~~		~~1~~	~~1 1/4~~
Dishwasher, commercial type		~~c~~ d	~~c~~ d
Dishwasher, residential type	2	2	1 1/2
Drinking Fountain	1/2	1/2	1 1/4
~~Exhaust Hood Washer~~		~~4~~	~~2~~
Floor Drain:			
Emergency (regardless of size)[e]	1	1	f
2-inch	2	2	2
3-inch	3	3	3
4-inch	4	4	4
Larger than 4-inch	4	4	~~d~~ f
Garage catch basin	4	4	4
Garage catch basin receiving additional drains	6	6	4
Glass Filler		1/2	1 1/4
Glass Washer		2	1 1/2
Gravity flow condensate or drip trays discharging to a receptor, ¾" or smaller		1/4	g
Gravity flow condensate or drip trays discharging to a receptor, ¾" to 1"		1/2	g
Gravity flow condensate or drip trays discharging to a receptor, larger than 1"		1	g
Health Care Fixtures:			
Clinic sink		6	NA
Exam/treatment sink		1	1 1/4
~~Sitz bath~~		~~2~~	~~1 1/2~~
~~Ice Chest~~		~~1/2~~	~~1 1/2~~
Laundry Tray, 1 or 2 compartment	2	2	1 1/2
Lavatory	1	1	1 1/4
Lavatory, ~~combination~~ multiple users 2-3 per trap[h]		1	1½
Lavatory, multiple users 4 or more per trap[h]		2	1½
Manufactured Home	11	~~11~~	NA
~~Refrigerated Food Display Case~~		~~1~~	~~1~~
~~Shower Stall:~~			
~~Residential~~		~~2~~	~~2~~
~~Public, individual~~		~~2~~	~~2~~

~~Public, group~~		~~2 per shower head~~	~~2~~
Shower Drain (based on total flow rate through shower heads and body sprays			
5.7 gpm or less	2	2	$1^1/_2$
5.7 to 12.3 gpm	3	3	2
12.3 to 25.8 gpm	5	5	3
25.8 to 55.6 gpm	6	6	4
Sinks:[i]			
Bar, residential		1	$1¼$
Breakroom (single compartment)		1	$1^1/_2$
Breakroom (two compartment with or without food waste grinder)		2	$1^1/_2$
Cup		½	$1^1/_4$
~~Factory, wash, per set of faucets~~		~~1~~	~~$1^1/_2$~~
~~Fountain wash up~~		~~1~~	~~$1^1/_2$~~
Fountain or Bar, 4 compartments or less		3	$1^1/_2$
Food Waste Grinder, commercial 2 HP or less		2	~~f~~ j
Food Waste Grinder, commercial 3 HP or more		3	~~f~~ j
Hand		1	$1^1/_4$
Laboratory		2	$1^1/_2$
~~Laboratory, school~~		~~2~~	~~$1^1/_2$~~
Classroom		1	$1^1/_4$
Pack or plaster		3	2
Residential-type, with or without food waste grinder	2	2	$1^1/_2$
Restaurant, Scullery, pots, and pans - 4 compartments or less		3	~~f~~ j
Food, rinsing, cleaning, or thawing		3	2
Service Sink, Flushing ~~Rim~~ rim		6	3
Service Sink, 2-inch or larger diameter, ~~wall outlet~~ [k]		2	2
Service Sink, 3-inch or larger diameter, ~~wall outlet~~ [k]		3	3
~~Service Sink, 2 inch diameter, floor outlet~~		~~2~~	~~2~~
~~Service Sink, 3 inch diameter, floor outlet~~		~~3~~	~~3~~
Shampoo Sink, barber, or beauty parlor		2	$1^1/_2$
Surgeons, wash up		3	$1^1/_2$
~~Wash Fountain, circular and semi-circular~~		~~2~~	~~$1^1/_2$~~
Receptors of ~~Indirect Wastes~~ indirect wastes, gravity flow discharge:			
Emergency (regardless of size)[n]	1	1	f
$1^1/_4$ inch receptor outlet diameter		1	$1^1/_4$
$1^1/_2$ inch receptor outlet diameter		2	$1^1/_2$
2 inch receptor outlet diameter		3	2
3 inch receptor outlet diameter		4	3
4 inch receptor outlet diameter		6	4
Larger than 4 inch receptor outlet diameter		8	~~f~~ j
Commercial-type laundry receptor (less than or equal to 75 pounds total washer capacity)		4	3

Commercial-type laundry receptor (75 to 250 pounds total washer capacity)		6	4
Commercial-type laundry receptor (greater than 250 pounds total washer capacity)		8	4
Refrigerated food display case (any size)		2	
~~Soda Dispenser~~		~~1/2~~	~~1 1/4~~
Sterilizers:			
Bedpan		4	2
Garbage can washer		3	3
Instrument or water		1	
Urinal		~~2~~	~~g~~
Urinal (less than 1 gallon per flush)		1	j
Urinal (1 gallon per flush or greater)		2	j
Water closet			
Water ~~Closet, nonpublic~~ closet .....(1.6 gallons per flush or less)	3	4	~~g~~ L
Water ~~Closet, public~~ closet (greater than 1.6 gallons per flush)	4	6	~~g~~ L

NA = not applicable

[a] Based on discharge rate of the fixture.

[~~b~~] [b] Trap size corresponds to the size of the drain outlet. Use the dfu value of the receptor serving the autopsy table.

[~~b~~] [c] Includes foot, sitz, and infant baths and regular bathtubs with or without showers or whirlpool circulation piping.

[~~c~~] [d] Based on discharge rates and number of outlets; a 4″ diameter trap and drain pipe minimum recommended.

[e] An emergency floor drain is a floor drain that does not receive the discharge of any drain or indirect waste and that protects against damage from accidental spills, overflows, and leakage.

[~~d~~] [f] Trap size corresponds to the size of the floor drain.

[g] The combined dfu load of all drains discharging to a receptor may not exceed the dfu value of the receptor. The dfu value of the receptor shall be used for sizing the DWR piping.

[h] A multiple use lavatory includes such fixtures a wash fountains, fountain wash sinks, combination lavs, and similar fixtures used for handwashing by multiple people at one time.

[i] Sinks not specified in this table shall be assigned 1 dfu for $1\frac{1}{4}$″ tailpiece, 2 dfu for $1\frac{1}{2}$″ tailpiece and 3 dfu for 2″ tailpiece.

[j] Except as provided in SPS 382.32 (3) (e).

[~~f~~] [f] Trap size corresponds to the size of the drain outlet. (Is this footnote still needed?)

[k] May be floor or wall outlet.

[~~g~~] [L] Trap size specified in referenced standards of s. SPS 384.20.

[m] Any fixture that does not have a non-public dfu value listed an is used in a non-public setting shall use the public area dfu value.

[n] An emergency receptor is a receptor that does not receive the discharge of any drain or indirect waste and that protects against damage from accidental spills, overflows, and leakage.

Table 382.30-2
Stacks ~~And~~ and Drain Piping

Pipe Diameter (inches)	Maximum Number of Drainage Fixture Units That May Drain Through Any Portion of Drain Piping[a]			
	Drain Piping Other Than Stacks[b]	Stacks[c]		
		Total Discharge from Side Connections into One Branch Interval[d,e]	Stacks of 3 Branch Intervals or Less	Stacks of More Than 3 Branch Intervals
1 ¼	1	1	2	2
1 ½	3	2	4	8
2	6	6	10	24
3	20	20	48	72
4	160	90	240	500
5	360	200	540	1,100
6	620	350	960	1,900
8	1,400	600	2,200	3,600
10	2,500	1,000	3,800	5,600
12	3,900	1,500	6,000	8,400
15	7,000	[f]	f	f

[a] Through any portion of a stack includes all of the flow at the design point.
[b] Does not include building drains and subdrains, building sewers, private interceptor main sewers, and forced discharge piping.
[c] Drain stacks may be reduced in size as the drainage load decreases to a minimum diameter of one- half of the diameter required at the base of the stack, but not smaller than that required for a stack vent under s. SPS 382.31 (14) (a).
[d] Into one branch interval includes the discharge from the top fitting of the branch interval and does not include the discharge from the bottom most fitting creating the branch interval.
[e] Reduction in diameter may occur within a branch interval.
[f] Sizing based on design criteria.

Table 382.30-3
Building Drains, Building Subdrains, Building Sewers, and Private Interceptor Main Sewers[a]

Pipe Diameter (inches)	Maximum Number of Drainage Fixture Units ~~Which~~ that May Drain Through Any Portion of a Building Drain, Building Subdrain, Building Sewer, or Private Interceptor Main Sewer			
	Pitch (inch per foot)			
	1/16	1/8	1/4	1/2
1 ¼	NP[b]	NP	1	1
1 ½	NP	NP	3	3
2	NP	NP	6	9
3	NP	36	42	50
4	NP	180	216	250
5	NP	390	480	575
6	NP	700	840	1,000
8	1,400	1,600	1,920	2,300
10	2,500	2,900	3,500	4,200
12	3,900	4,600	5,600	6,700
15	7,000	8,300	10,000	12,000

[a] Private interceptor main sewers 6 inches or less in diameter, see s. NR 110.13 for private interceptor main sewers 8 inches or larger in diameter.
[b] NP means Not Permitted.

Note: For further explanatory material see ch. SPS 382 Appendix A-382.30 (4).

(5) PITCH OF HORIZONTAL DRAIN PIPING. All horizontal drain piping 4~~"~~ inches or larger in diameter shall be installed at a pitch which produces a computed velocity of at least 2 feet per second when flowing half full.

(a) *Horizontal branch drains.* 1. The minimum pitch of horizontal branch drains 2~~"~~ inches or less in diameter shall be a $^1/_4$~~"~~ inch per foot.

2. The minimum pitch of horizontal branch drains larger than 2~~"~~ inches in diameter shall be a $^1/_8$~~"~~ inch per foot.

(b) *Building drains and building sewers.* 1. The minimum pitch of building drains shall be in accordance with Table 382.30-3.

2. a. The minimum pitch of building sewers 10~~"~~ inches or less in diameter shall be in accordance with Table 382.30-3.

b. The minimum pitch of building sewers 12~~"~~ inches or larger in diameter shall conform with the minimum pitch specified for municipal sewers in s. NR 110.13.

Note: See also s. SPS 382.30 (4) (c) 5. for further explanatory material.

(c) *Private interceptor main sewers.* 1. The minimum pitch of private interceptor main sewers 6~~"~~ inches or less in diameter shall be in accordance with Table 382.30-3.

2. The minimum pitch of private interceptor main sewers 8~~"~~ inches or larger in diameter shall conform with the minimum pitch specified for municipal sewers in s. NR 110.13.

Note: See ch. SPS 382 Appendix for further explanatory material.

(6) OFFSETS IN VERTICAL DRAINS. Offsets in vertical drain piping shall be in accordance with this subsection.

(a) *Offsets of 45° degrees or less.* 1. An offset in a vertical drain, with a change in direction of 45° degrees or less from the vertical, shall be sized as a vertical drain piping in accordance with sub. (4).

2. Except as provided in par. (c), where a horizontal branch connects to a drain stack within 2 feet above or below an offset with a change of direction of 30° to 45° degrees from the vertical and the offset is located ~~5~~ five or more branch intervals below the top of the stack, the offset shall be vented in accordance with s. SPS 382.31 (5) (a).

(b) *Offsets of more than 45° degrees.* Except as provided in par. (c), a drain stack with an offset of more than 45° degrees from the vertical shall be installed in accordance with subds. 1. to 5.

1. That portion of the drain stack above the highest offset shall be sized as for vertical drain piping in accordance with sub. (4).

2. That portion of the offset between and including the offset fittings shall be sized as building drain piping in accordance with sub. (4).

3. That portion of stack below the offset shall be not less than the size of the offset.

4. Where an offset of more than 45° degrees is located more than four branch intervals below the top of the drain stack, a horizontal branch may not connect within the offset or within 2 feet above or below such offset.

5. a. Except as exempted in subd. 5. b., or par. (c), where an offset in a drain stack with a change of more than 45° degrees from vertical is located below ~~5~~ five or more branch intervals, the offset shall be vented in accordance with s. SPS 382.31 (5) (b).

b. The vent required in subd. 5. a. shall not be required where the drain stack, including the offset, is sized one pipe size larger than required for a building drain designed to serve as per sub. (4) and the entire stack and offset are not less in cross sectional area than that required for a stack plus the area of a vent as required in s. SPS 382.31 (5) (b).

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Exception.* Where an offset is located two or more feet below the lowest branch drain connection to the stack, the venting specified in this subsection and s. SPS 382.31 (5) (b) is not required.

(7) HORIZONTAL BRANCH DRAIN CONNECTION AT BASE OF A STACK. (a) A horizontal branch drain may not connect downstream from the base fitting of a drain stack 2" inches or larger in diameter within the distance equal to 10 pipe diameters of the drain to which the horizontal branch drain connects.

(b) A building drain branch or building subdrain branch may not connect to a building drain or building subdrain downstream from the base fitting of a drain stack 2" inches or larger in diameter within the distance equal to 20 pipe diameters of the building drain or building subdrain.

Note: See ch. SPS 382 Appendix for further explanatory material.

(8) PIPING CHANGES IN DIRECTION. Changes in the direction of drain piping shall be accomplished in accordance with the requirements of this subsection.

(a) *Fittings.* All changes in direction of flow in drain piping shall be made by the appropriate use of 45-degree wyes, long, or short sweep quarter bends, sixth, eighth, or sixteenth bends, or by a combination of these or other equivalent fittings. Except as provided in subds. 1. to 3., fittings which change the direction of flow for drain piping 8" inches or less in diameter shall conform to the minimum radii specified in Table 382.30-4.

Note: See ch. SPS 382 Appendix for further explanatory material.

1. The minimum radius for the first 90° –degree fitting downstream from a trap serving a lavatory or sink shall be 1-3/4" inches for drain piping 1-1/2" inches in diameter. The fitting shall be a tee or quarter bend.

2. The minimum radius for the first 90° –degree bend or elbow downstream from a water closet shall be 2-1/2" inches for drain piping 3" inches in diameter.

3. The minimum radius for the first 90° –degree bend or elbow downstream from a water closet shall be 3" inches for drain piping 4" inches in diameter.

Table 382.30-4
Minimum Radii of Fittings (in inches)

Diameter of pipe (inches)	Changes in Direction of Flow	
	Horizontal to Vertical	Vertical to Horizontal and Horizontal to Horizontal
1-1/4	1-1/8	2-1/4
1-1/2	1-3/8	2-3/4
2	1-7/8	3-1/4
3	2-7/8	4-1/16
4	3-3/4	4-7/8
5	4-1/2	6-1/2
6	5	7
8	6	8

(b) *Blowout type fixtures.* Where blowout type fixtures are installed back to back, appropriate fittings shall be installed to prevent the passage of wastes from one fixture to the other.

(9) DRAIN FITTINGS AND CONNECTIONS. Drain fittings, connections, devices, and methods of installation ~~shall~~ may not obstruct or retard the flow of water, wastes, sewage, or air in the drain system or venting system in an amount greater than the normal frictional resistance to flow, unless as otherwise permitted in this chapter or unless approved by the department.

(a) *Closet bend.* The reduction of a 4 x 3-inch closet bend or collar fitting from 4" inches to 3" inches ~~shall~~ may not be considered an obstruction.

(b) *Side inlet tees or bends.* The side inlet of a low pattern or high pattern tee or bend ~~shall~~ may not be used as a vent connection when the side inlet is placed in a horizontal position or when any arrangement of piping or fittings produces a similar effect.

(c) *Prohibited fittings and connections.* The types of fittings and connections specified in subds. 1. to 4. ~~shall~~ may not be used for drain piping:

1. A heel inlet bend when the heel inlet is in the horizontal position~~;~~.

2. A fitting or connection ~~which~~ that has an enlargement chamber or recess with a ledge or shoulder, or reduction in pipe area in the direction of flow~~;~~.

3. A fitting which has running threads~~; and~~.

4. A connection by means of drilling and tapping of a drain or vent pipe, unless as otherwise approved by the department.

(d) *Saddles.* If a pipe saddle is used to connect drain piping together, the saddle shall be installed in accordance with s. SPS 384.30 (5) (d).

(10) SUMPS, EJECTORS, AND PUMPS. (a) *Sumps.* 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 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.

2. 'Capacity.' Except as provided in pars. (c) and (d), the minimum capacity of the sump shall be determined in accordance with the provisions of subd. 2. a. to e.

a. The water supply fixture unit method shall be used to determine peak input flow in gallons per minute; only the fixtures that drain to the sump shall be included.

Note: When converting water fixture units to gallons per minute it is permissible to calculate the load as a supply system with predominantly flush tanks.

b. The capacity of the sump shall be such that the pump when actuated by the lowest "pump on" switch runs at least 20 seconds.

c. Between the highest "pump on" switch level and the sump inlet, the sump shall hold the amount of input that exceeds the discharge of the pumping equipment in a 5-minute peak input period. Capacity shall be based on one pump only. ~~but in~~ In no case shall the vertical distance between the switch and the inlet be less than 3" inches.

d. The low water level shall be maintained in accordance with the pump manufacturer's requirements, but shall not be less than 4" inches above the sump bottom.

e. Sumps containing one pump shall have an inside diameter of at least 24" inches. Sumps containing ~~2~~ two pumps shall have an inside diameter of at least 30" inches.

Note: See ch. SPS 382 Appendix for further explanatory material.

3. 'Vents.' All sumps and all drains leading to a sump shall be vented in accordance with s. SPS 382.31.

4. 'Materials.' All sumps shall be constructed in a watertight manner of approved materials in accordance with ch. SPS 384.

5. 'Removable covers.' Penetrations through the top of removable sump covers shall be limited to those for the electrical supply, the vent piping and the discharge piping for the pump or pumps.

(b) *Ejectors and pumps.* 1. 'Where required.' The liquid from all sanitary building sumps shall be lifted and discharged into the building sanitary drain system by automatic ejectors, pumps or any other equally efficient method approved by the department.

2. 'Duplex equipment.' a. Duplex ejector or pumping equipment shall be installed in a public building where ~~3~~ three or more water closets or more than 20 drainage fixture units discharge into a sump.

b. Duplex ejector or pumping equipment shall be installed where the sanitary wastes of ~~2~~ two or more one- or 2-family dwellings discharge into a sump.

c. Where duplex ejector or pumping equipment is installed, appropriate devices shall be installed to automatically alternate operation of the pumps or ejectors and to operate both pumps or ejectors when one unit cannot handle the load.

d. Where duplex pumping equipment is installed, an audible or visual alarm system with a manual control reset shall be installed to indicate pump failure.

3. 'Size.' The size and design of an ejector or pump shall be determined by the capacity of the sump to be served, the discharge head and discharge frequency. All ejectors and pumps shall provide a minimum flow velocity of ~~-~~ two 2 feet per second in the forced discharge piping.

Note: See ch. SPS 382 Appendix for velocity in relation to flow rate by various pipe sizes.

Note: Ejectors or pumps discharging to septic tanks may disturb the normal settling properties of the tank environment; contact the Division of Industry Services for more information.

a. All sewage grinder pumps shall have a minimum $1\frac{1}{4}$"-inch diameter discharge opening and discharge piping.

b. All nongrinder-type sewage pumps serving water closets shall be capable of passing a 2"-inch diameter solid ball and shall have a minimum 2"–inch diameter discharge opening and discharge piping. All other pumps handling sanitary wastes shall be rated by the manufacturer as an effluent pump, shall be capable of passing a $\frac{1}{2}$"–inch diameter solid ball and shall have a minimum $1\frac{1}{4}$"-inch diameter discharge opening and discharge piping.

4. 'Discharge connections.' a. The discharge pipe from the ejector or pump shall be connected to the gravity drain by means of a wye pattern fitting. Where the fitting connects to a horizontal drain, the bottom of the wye branch of the fitting shall be located above the horizontal center line.

b. With the exception of exterior sumps, a full flow check valve shall be installed in the discharge piping from each ejector or pump.

c. Where duplicate ejector or pumping equipment is installed, each discharge pipe from an ejector or pump shall be provided with a gate or ball type valve installed downstream of each full flow check valve.

5. 'Discharge pipe air relief.' Air relief valves shall be provided at all high points in the discharge piping of an ejector or pump where the piping arrangement creates an air trap.

6. 'Prohibited connections.' No fixtures may be connected to the discharge pipe between the ejector or pump and the point where it enters the gravity drain.

7. 'Maintenance.' All ejectors, pumps and like appliances shall receive care as needed to keep them in a satisfactory operating condition.

(c) *Prefabricated pumps and sump systems.* The minimum capacity of a prefabricated pump, and sump system shall be determined in accordance with all of the following:

1. The water supply fixture unit, wsfu, method shall be used to determine peak input flow in gallons per minute. The peak input shall include all the fixtures that drain to the sump.

2. Unless storage is provided as specified in par. (a) 2., the capacity of the prefabricated pump and sump system shall accommodate the peak input flow.

3. The low water level shall be maintained in accordance with the pump manufacturer's requirements.

(d) *Exterior sumps.* Exterior sumps shall comply with s. SPS 384.25. The minimum capacity of exterior sumps shall be determined in accordance with all of the following:

1. Peak input flow in gallons per minute shall be determined in accordance with either of the following:

a. The water supply fixture unit, wsfu, method of all the fixtures that drain to the sump.

b. The provisions as specified in s. SPS 383.43 (2) ~~through~~ to (6).

2. In lieu of providing the duplex pumping equipment as specified in par. (b) 2., a one-day holding capacity may be provided above a high-level alarm when installed on a simplex system.

(11) BUILDING DRAINS AND BUILDING SEWERS. (a) *Limitations.* No building sewer may pass through or under a building to serve another building, unless any of the following apply:

1. The building sewer serves farm buildings or farm houses, or both, which are all located on one property~~; or~~.

2. The building sewer or private interceptor main sewer serves buildings located on the same property and a document, which indicates the piping and distribution arrangement for the property and buildings, shall be recorded with the register of deeds no later than 90 days after installation.

(b) *Building drains.* 1. 'Elevation.' a. All building drains shall be installed below the lowest floor levels on which fixtures may be installed if the public sewer, POWTs, or private interceptor main sewer elevation permits.

b. Where any portion of an above-ground building drain discharges to a vertical pipe, the building drain shall connect to the building sewer at an elevation at least 30~~"~~ inches above the basement floor.

Note: See ch. SPS 382 Appendix for further explanatory material.

2. 'Backwater protection.' A building drain subject to backflow or backwater shall be protected with a backwater valve or with a sump with pumping equipment in accordance with sub. (10).

a. Backwater valves, when fully open, shall have a capacity not less than that of the pipes in which installed.

b. Backwater valves shall be so located as to be readily accessible for cleaning.

3. 'Floor drain required.' a. Where a plumbing fixture or appliance is located on a floor which is entirely below grade, a floor drain shall be installed to serve that floor.

b. In any room containing the recessed or concealed portions of sterilizers located in health care or related facilities, at least one floor drain connecting to the drainage system shall be installed in a manner to adequately drain the entire floor area.

c. In any public swimming pool toilet or locker room, floors shall be pitched, and the floor drains located in a manner to prevent standing water.

(c) *Building sewers.* 1. 'Minimum depth.' a. The top of a building sewer shall be located at a depth of not less than 42~~"~~ inches below finished grade, except as provided in subd. 1. b. or subd. 2.

b. The top of a building sewer which discharges to a septic tank, holding tank or grease interceptor shall be located at a depth of not less than 18~~"~~ inches below finished grade.

2. 'Protection from frost.' a. Except as provided in subd. 2. c. to e., a building sewer or private interceptor main sewer shall be protected from frost in accordance with subd. 3. in areas where the top of the building sewer or private interceptor main sewer is located less than 60~~"~~ inches below a surface area from which snow will be cleared.

b. Except as provided in subd. 2. c. to e., a building sewer or private interceptor main sewer shall be protected from frost in accordance with subd. 3. in areas where the top of the building sewer or private interceptor main sewer is located less than 42~~"~~ inches below a surface area which snow will not be cleared.

c. Where a building sewer or private interceptor main sewer discharges to a holding tank, POWTs treatment tank, or grease interceptor, the portion of a building sewer or private interceptor main sewer ~~which~~ that is within 30 feet from the connecting building drain and ~~which~~ is under a surface area ~~from which~~ where snow will not be cleared, ~~shall~~ may not be required to be protected from frost.

d. Frost protection for a building sewer ~~shall~~ may not be required where the predicted depth of frost as determined from Figure 382.30-1 and Table 382.30-6 does not extend below the top of the building sewer.

e. Where a building sewer or private interceptor main sewer is installed ~~to serve summer~~ for seasonal use ~~public facilities~~, frost protection requirements ~~shall~~ may not apply.

Note: This exemption applies to frost sleeves as provided in s. SPS 382.35 (5) (a) 2.

3. 'Insulation for building sewers.' Where required by subd. 2. a. or b., building sewer or private interceptor main sewer insulation for frost protection shall be provided in accordance with one of the methods specified in subd. 3. a. to d.

a. Extruded polystyrene foam insulation shall be installed at a depth of at least 18~~"~~ inches below finished grade and at least 6~~"~~ inches above the top of the sewer pipe. The minimum thickness and width of the foam insulation shall be determined from Figure 382.30-1 and Tables 382.30-5 to 382.30-7. If the insulation is to be installed more than 6~~"~~ inches above the top of the sewer, the number of inches exceeding 6~~"~~ inches shall be added to the width of insulation determined from Table 382.30-7.

b. Extruded polystyrene foam insulation shall be installed using a box method. The ~~3~~ three-sided box shall be formed with ~~3~~ three lengths of polystyrene foam insulation where the top of the box extends horizontally to the farthest edge of both vertical sides. The insulation shall be installed at or below a depth of at least 12~~"~~ inches below finished grade and 6~~"~~ inches above the top and 6~~"~~ inches from each side of the building sewer or private interceptor main sewer. The minimum thickness of the foam insulation shall be determined from Figure 382.30-1 and Table 382.30-5.

Note: See ch. SPS 382 Appendix for further explanatory material.

c. Lightweight insulating concrete shall be installed to the depth of the spring line of the sewer and shall extend laterally at least 6~~"~~ inches on both sides of the sewer. The minimum thickness of the insulating concrete shall be determined from Figure 382.30-1 and Table 382.30-5. The thickness shall be measured from the top of the sewer. The top of the insulation shall be installed at least 12~~"~~ inches below finished grade.

d. Alternative methods of frost protection shall be approved by the department.

Figure 382.30-1. Frost protection zones.

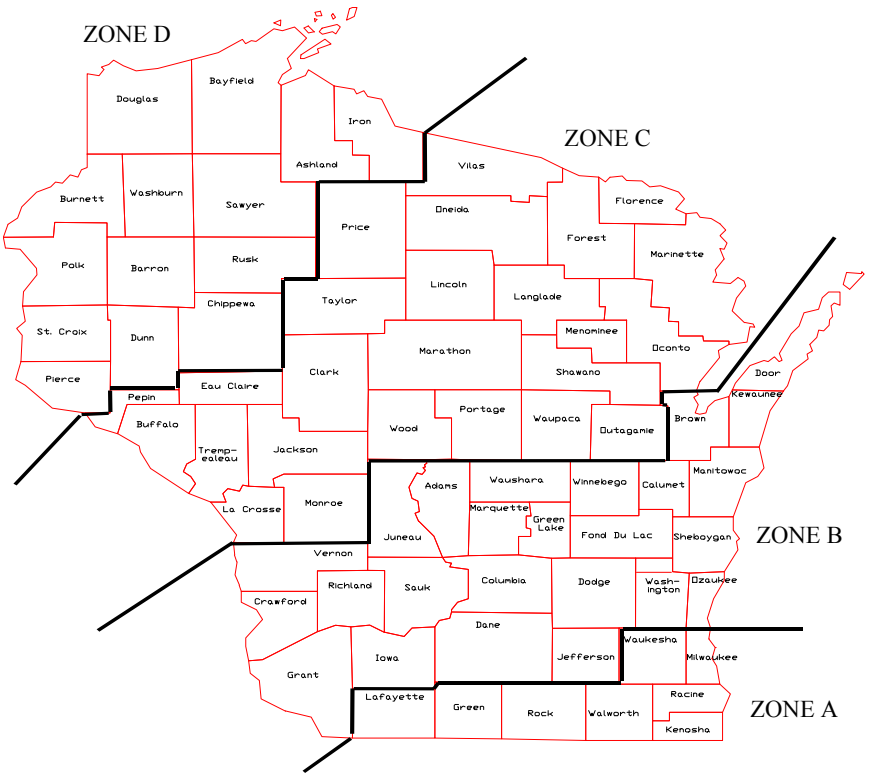

Table 382.30-5
Minimum Thickness of Insulation

Frost Protection Zone	Extruded Polystyrene Foam (in inches)	Insulating Concrete (in inches)
A	1.0	6
B	1.5	9
C	2.0	12
D	2.5	15

Table 382.30-6
Predicted Depth of Frost in Various Types of Backfill Soil (in feet)

Soil Type	Frost Protection Zone			
	A	B	C	D
Clay, Clay Loam	2.5	3.0	3.5	4.0
Silt Loam, Silty Clay Loam	3.5	4.0	4.5	5.5
Sandy Clay Loam	4.0	4.5	5.5	6.0
Sandy Loam, Loamy Sand	4.5	5.0	6.0	6.5
Sand	5.0	5.5	6.5	7.5
Gravelly Sand	6.0	7.5	9.0	10.0

Table 382.30-7
Minimum Width of Extruded Polystyrene Foam Insulation (in feet)

Predicted Depth of Frost (feet)	Depth of Sewer (in feet)					
	2.0	2.5	3.0	3.5	4.0	4.5
2.5	2	NR				
3.0	3	2	NR			
3.5	4	3	2	NR		
4.0	5	4	3	2	NR	
4.5	6	5	4	3	2	NR
5.0	7	6	5	4	3	2

5.5	8	7	6	5	4	3
6.0	9	8	7	6	5	4
6.5	10	9	8	7	6	5
7.0	10	10	9	8	7	6
7.5	10	10	10	9	8	7
8.0	10	10	10	10	9	8
8.5	10	10	10	10	10	9
9.0	10	10	10	10	10	10
10.0	10	10	10	10	10	10

NR means Not Required.

(d) *Location limitations.* Building drains, building sewers, or private interceptor main sewers shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812 or as otherwise approved by the department of natural resources.

Note: See s. SPS 382.40 for provisions regarding the separation of water supply piping, building sewers and private interceptor main sewers.

Note: See ch. SPS 382 Appendix for further explanatory material. Section NR 812.08 may require additional setbacks.

(e) *Installation of building drains and building sewers.* 1. 'Trenching.' All excavations for building drains and building sewers shall be open trench work, unless otherwise ~~permitted~~ approved by ~~local ordinance or accepted by~~ the ~~local inspector~~ department.

2. 'Stable bottom.' Where the bottom of the trench can be maintained in a stable condition and free of water 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 trench bottom does not contain stone larger than one inch in size or where bedrock is not encountered, the trench may be excavated to grade.

b. Where stone larger than one-inch size or when bedrock is encountered, the trench shall be excavated to a depth at least 3 inches below the grade elevation and shall be brought back to grade with a bedding of sand, gravel, or crushed stone that shall be of a size that all the material shall pass a ¾-inch sieve.

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.

4. 'Backfill completion.' Care shall be exercised in placing the balance of the backfill to prevent breakage of the pipe. Large boulders or rock, concrete slabs, or frozen masses ~~shall~~ may not be used in the backfill. At least 36" inches of backfill cover shall be provided over the top of the pipe before the pipe trench is wheel-loaded.

5. 'Pipe openings protected.' The ends of all pipes not immediately connected shall be closed so as to prevent the introduction of earth or drainage from an excavation.

(f) *Connection to public sewer.* The connections of building sewers to public sewers shall be in accordance with conditions of approval for the public sewer granted by the department of natural resources under s. 281.41, Stats.

1. 'Gravity public sewer.' When a building sewer connection to the public sewer is not found within 3 feet of the point designated by the local governing body or its authorized representative, the connection shall be made in accordance with one of the provisions specified in subd. 1. a. to d.

a. A saddle fitting approved by the department and acceptable to the municipality or sanitary district shall be installed.

b. Where acceptable to the municipality or sanitary district a portion of the main sewer may be removed and a tee or wye fitting approved by the department may be inserted with compression joints in the public sewer acceptable to the municipality or the sanitary district. The insertion shall be made under the supervision of the authorized representative of the municipality or the sanitary district.

c. When the public sewer is concrete or clay, the end of the connecting sewer may be set upon or in an opening cut into the top half of the public sewer~~,~~ but shall not protrude into the public sewer. The connection shall be secured by encasing the main sewer pipe and the connection in concrete at least 3" inches thick so as to assure permanency of the connection and adequate backing of the public sewer pipe.

d. In lieu of the use of a fitting and in the event that an opening cannot be located in the top half of the public sewer, a length of concrete or clay public sewer pipe may be removed and a section with a wye fitting shall be inserted in its place. The joints at the ends of the section shall be encased in concrete at least 3" inches thick. The connection or insertion shall be made under the supervision of the authorized representative of the municipality or the sanitary district.

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 the 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.

Note: See ch. SPS 382 Appendix for further explanatory material.

(g) *Prohibited installations.* 1. 'Harmful discharge.' No person may connect to a public sewer any building drain or building sewer through which is discharged any substance likely to cause undue corrosion, obstruction, nuisance, explosion, or interference with sewage treatment processes.

2. 'Storm water and clear water connections.' Except as provided in s. SPS 382.36 (3), storm drain piping and clear water drain piping may not discharge to a sanitary building drain ~~which~~ that connects to a publicly-owned treatment works.

Note: See s. SPS 382.36 for provisions relative to storm sewers.

(h) *Locating requirements.* A means to locate buried non-metallic sewers and private interceptor main sewers discharging to municipal mains shall be accomplished in accordance with one of the following options:

Note: See ch. SPS 382 Appendix for further information.

1. A tracer wire shall be installed in accordance with all of the following:

a. Tracer wire shall be installed along the length of the non-metallic pipe.

b. Tracer wire shall be a minimum of 18-gauge, insulated, single-conductor copper wire, or equivalent.

c. Tracer wire shall be located directly above and within 6 inches of the non-metallic pipe.

d. Tracer wire shall be accessible and locatable within the owner's property at 400-foot intervals or increments thereof.

e. Exterior access locations shall include a means of protecting the tracer wire.

f. In-ground sleeves shall be installed as provided in s. SPS 382.35 (5) (a) 2. c. and d.

g. Where tracer wire is more than 6 inches from the pipe, tracer wire insulation color shall comply with subd. 1. h.

h. Tracer wire insulation color for non-metallic sewer pipe shall be green.

i. Tracer wire conductivity shall be tested prior to use.

j. Conductive warning tape may not be utilized in lieu of tracer wire.

2. Global positioning system data shall be recorded with the municipality where the non-metallic pipe is installed.

3. Another equally-effective means acceptable to the department shall be employed to mark the location of the non-metallic pipe.

(12) PRIVATE INTERCEPTOR MAIN SEWERS. (a) The connection of a private interceptor main sewer to a public sewer shall be in accordance with the conditions of approval for the public sewer granted by the department of natural resources under s. 281.41, Stats.

(b) Private interceptor main sewers ~~which~~ that discharge to a municipal treatment facility shall be designed in accordance with the appropriate water quality management plan.

(c) All private interceptor main sewers shall be tested in accordance with s. SPS 382.21.

(d) Private interceptor main sewers 6" inches or less in diameter shall be installed in accordance with the criteria for building sewers specified in sub. (11) (b) and (c) and (d) and (e).

(e) Private interceptor main sewers 8" inches or larger in diameter shall ~~be~~ comply with all of the following:

1. ~~Provided~~ Be provided with frost protection in accordance with sub. (11) (c)~~; and~~

2. ~~Installed~~ Be installed in accordance with the municipal sewer criteria specified in s. NR 110.13.

(f) No private interceptor main sewer may pass through or under a building to serve another building, unless one of the following conditions are met:

1. The private interceptor main sewer serves farm buildings, farm houses, or both which are located on one property.

2. The private interceptor main sewer serves buildings that are located on one property and a document~~, which~~ that indicates the piping and distribution arrangement for the property and buildings, shall be recorded with the register of deeds no later than 90 days after installation.

(13) LOCATION OF DRAIN PIPING. (a) Drain piping located below the ceilings of areas where food, ice, or potable liquids are prepared, handled, stored, or displayed shall be installed with the least number of joints and shall be installed in accordance with subds. 1. to 5.

1. All pipe openings through floors shall be provided with sleeves bonded to the floor construction and protruding not less than one inch above the top of the finish floor with the space between sleeve and the piping sealed.

2. Plumbing fixtures, except bathtubs and showers, shall be of the wall mounted type. Bathtubs shall have waste and overflow connections made above the floor and piped to a trap below the floor.

3. Floor and shower drains installed shall be equipped with integral seepage pans.

4. Cleanouts for piping shall be extended through the floor construction above.

5. Piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be thermally insulated.

(b) Where drain piping is located in ceilings of areas where food, ice, or potable liquids are prepared, handled, stored, or displayed, the ceilings shall be of the removable type~~,~~ or shall be provided with access panels in order to provide an access for inspection of the piping.

(c) Exposed drain piping ~~shall~~ may not be located over a pool, surge tank, or an open filter for a pool.

Note: See ch. SPS 382 Appendix for examples of exposed piping considerations.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; am. Table 82.30-1, (8) (a), (9) (c) (intro.) and 3., and (10) (b) 3. b., r. and recr. (4) (d) 2., Table 82.30-4, (10) (a) 2. b., (11) (intro.) and (f) 2., cr. (8) (a) 1. to 3. and (9) (d), r. (9) (c) 4., renum. (9) (c) 5. to be 4. and am., Register, May, 1988, No. 389, eff. 6-1-88; r. and recr. (4) (d), am. Table 82.30-3 and 82.30-7, r. (11) (intro.), renum. (11) (a) to (f) to be (b) to (g), cr. (11) (a) and (12) (f), Register, August, 1991, No. 428, eff. 9-1-91; am. Table 82.30-1, Register, April, 1992, No. 436, eff. 5-1-92; am. (7) (a) and (b), (11) (c) 1. a., (12) (e) 1. and Table 82.30-1, cr. (10) (a) 5., r. (11) (b) 1. b., renum. (11) (b) 1. c. to be (11) (b) 1. b., Register, February, 1994, No. 458, eff. 3-1-94; reprinted to restore dropped copy in (10) (b) 3. b., Register, July, 1994, No. 463; corrections in (11) (f) and (12) (g) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1998, No. 508**;** am. (11) (g) 2., Register, April, 2000, No. 532, eff. 7-1-00; CR 02-002: am. (4) (d) 5., (5) (b) 2. b., (c) 2., (10) (a) 2., (b) 4. b., (11) (b) 1. a., (c) 2. a. to c., 3. (intro.), (g) 2., (12) (f) (intro.) and 1., and Tables 82.30-1, 2, 3, 5 and 6, cr. (10) (b) 2. d., (c), (d), (11) (b) 3. b. and (c) 2. e., r. and recr. (11) (a) 2., (d), and (12) (f) 2., renum. (11) (b) 3., (c) 3. b. and c. to be (11) (b) 3. a., (c) 3. c. and d., Register April 2003 No. 568, eff. 5-1-03; CR 04-035: r. (3) (b) 32. a., am. Table 82.30-1 Register November 2004 No. 587, eff. 12-1-04; CR 07-069: cr. (11) (h) Register February 2008 No. 626, eff. 3-1-08; CR 08-055: am. (3), (6) (a) 2., (b) 1. to 3., (10) (a) 1., Tables 82.30-1 and 82.30-3, r. (4) (b), renum. (4) (c) to (e) and (11) (h) 1. g. to i. to be (4) (b) to (d), and (11) (h) 1. h. to j., r. and recr. (6) (b) 4.,

5., (11) (e) 2., 3., (f) 2. and Table 82.30-2, cr. (11) (h) 1. g. Register February 2009 No. 638, eff. 3-1-09; correction in (6) (a) made under s. 13.92 (4) (b) 1., Stats., Register February 2009 No. 638; CR 10-064: am. (6) (a) 2., (b) (intro.), 5. a., Table 82.30-2, cr. (6) (c) Register December 2010 No. 660, eff. 1-1-11; correction in (2), (3) (a) 1., 2., (4) (a) 1., (c) 4., (5) (b) 1., 2. a., (c) 1., (6) (a) 2., (b) 5. a., b., (c), (8) (a), (9) (d), (10) (a) 3., 4., (d) 1. b., (11) (c) 2. d., 3. a., b., c., (g) 2., (h) 1. f., (12) (c), Table 328.30-1, Table 328.30-2 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.31 **Vents and venting systems. (1)** SCOPE. The provisions of this section set forth the requirements for the design and the installation of vents and venting systems.

(2) MATERIALS. All vents and venting systems shall be constructed of approved materials in accordance with ch. SPS 384.

(3) GENERAL. (a) *Vents.* Every trap and trapped plumbing fixture shall be provided with an individual vent, except as otherwise permitted in this chapter. Vents and venting systems shall be designed and installed so that the water seal of a trap shall be subject to a maximum pneumatic pressure differential equal to one inch of water column.

(b) *Main stack.* Each gravity-flow sanitary building sewer shall be served by at least one stack which extends from a building drain to a vent terminal or vent header. The stack shall be not less than 3" inches in diameter from the building drain to the vent terminal or vent header.

(4) VENT STACKS AND STACK VENTS. (a) *Where required.* A vent stack and a stack vent shall be installed to serve any drain stacks of ~~5~~ five or more branch intervals.

(b) *Installation.* 1. The connection of the vent stack to a drain stack shall be at or below the lowest branch drain connection to the drain stack. The connection to the drain stack shall be by means of a wye pattern fitting installed in a vertical portion of the stack.

2. A vent stack and a stack vent shall conform to at least one of the following:

a. Extend to a vent terminal in accordance with sub. (16)~~;~~.

b. Connect to a vent stack which extends to a vent terminal~~; or~~.

c. Connect to a stack vent at least 6" inches above the flood level rim of the highest fixture discharging into a drain stack.

3. Vent stacks and stack vents may connect into a common vent header and then shall extend to a vent terminal.

4. The connection of a vent stack with another vent may not be less than 38" inches above the next higher floor level where the plumbing fixtures are vented, but in no case lower than 2" inches above the elevation of the highest flood level rim of any fixture served by the vent.

Note: See ch. SPS 382 Appendix for further explanatory material.

(5) RELIEF AND YOKE VENTS FOR STACK OFFSETS. (a) *Vents serving offsets of 30 to 45° degrees in drain stacks.* 1. Except as permitted in subd. 2., where a horizontal branch connects to a drain stack within 2 feet above or below an offset with a change of direction of 30 to 45° degrees from the vertical and the offset is located below ~~5~~ five or more branch intervals, the offset shall be vented in accordance with par. (b) 1. to 3.

2. Where the drain stack and offset are sized as building drain as per Table 382.30–3, the vents serving the offset of 30 to 45° degrees in a drain stack are not required.

(b) *Vents serving offsets of more than 45° degrees in drain stacks.* Offsets of more than 45° degrees in drain stacks shall be vented where ~~5~~ five or more branch intervals are located above the offset. The offset shall be vented by venting the upper and lower section of the stack.

1. 'Upper section.' The upper section of the stack shall be vented as a separate stack with a vent stack connection installed in accordance with sub. (4). The offset shall be considered the base of the stack.

2. '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.

3. 'Lower section.' The lower section of the stack shall be vented by a yoke vent connecting below the offset above or at the next lower horizontal branch.

a. Except as provided in subd. 3. b., the connection of the yoke vent to the drain stack shall be by means of a wye pattern fitting.

b. The yoke vent connection may be a vertical extension of the stack.

c. The connection of the yoke vent to another vent ~~shall~~ may not be less than 38 inches above the next higher floor level where plumbing fixtures are installed that discharge into the drain stack.

(6) RELIEF VENTS FOR STACKS OF MORE THAN 10 BRANCH INTERVALS. (a) Drain stacks of more than 10 branch intervals shall be provided with a relief vent at each tenth interval installed.

(b) The lower end of the relief vent required in par. (a) shall connect to the stack by use of a wye pattern fitting below the horizontal branch serving that floor.

(c) The upper end of the relief vent required in par. (a) shall connect to the vent stack not less than 38 inches above the next higher floor level where plumbing fixtures are installed that discharge into the drain stack.

(7) RELIEF VENTS FOR BUILDING DRAINS. A building drain with a change in elevation of 12 feet or more and at an angle of 45° degrees or more from the horizontal shall be provided with a relief vent.

(a) The connection of the relief vent to the building drain shall be by means of a wye pattern fitting installed within 2 feet upstream of the top of the change in elevation.

(b) The connection of the relief vent to another vent shall be not less than 38" inches above the next higher floor level where plumbing fixtures are installed that discharge through the building drain.

Note: See ch. SPS 382 Appendix for further explanatory material.

(8) VENTS FOR SANITARY SUMPS. (a) *Interior sanitary sumps.* Sanitary sumps shall be provided with a vent connecting either to the sump above the drain inlet or to the drain inlet within 12" inches of the sump.

(b) *Exterior sanitary sumps.* Sanitary sumps shall be provided with a vent that terminates in accordance with sub. (16) (h).

(9) FIXTURE VENTS. (a) *Developed length between vent and trap.* Each fixture trap shall be protected with a vent located in accordance with the provisions of subds. 1. and 2.

1. Each fixture trap ~~which~~ that is not an integral part of the fixture shall be protected with a vent so located that the developed length of the fixture drain piping from the trap weir to the vent connection is within the limits set forth in Table 382.31-1.

2. Each fixture trap ~~which~~ that is an integral part of the fixture shall be protected with a vent so located that the developed length of the fixture drain piping from fixture outlet to the vent connection is within the limits set forth in Table 382.31-1. For a floor outlet water closet or similar fixture, the point where the fixture drain piping turns horizontal shall be considered as the fixture outlet.

(b) *Minimum distance.* A vent ~~shall~~ may not connect to a fixture drain within the distance equal to ~~2~~ two diameters of the drain piping from the weir of a trap.

Note: See ch. SPS 382 Appendix for further explanatory material.

Table 382.31-1
Maximum Developed Length Between Vent and Trap (in feet)

Diameter of Fixture Drain[a] (inches)	Vent Connecting to Horizontal Drain Piping			Vent Connecting to Vertical Drain Piping					
				by means of a Sanitary Tee Fitting			by means of a Wye Pattern Fitting[b]		
	Pitch of Fixture Drain (inch per foot)			Pitch of Fixture Drain (inch per foot)			Pitch of Fixture Drain (inch per foot)		
	1/8	1/4	1/2	1/8	1/4	1/2	1/8	1/4	1/2
1 1/4	NP[c]	5.0	2.5	NP	3.5	2.0	NP	1.5	1.0
1 1/2	NP	6.0	3.0	NP	5.0	3.0	NP	4.0	2.0
2	NP	8.0	4.0	NP	6.0	4.0	NP	4.5	4.0
3	24	12.0	6.0	10.0	8.0	6.0	8.0	6.0	6.0
4[d]	32	16.0	8.0	12.0	10.0	8.0	10.0	8.0	8.0

[a] Diameters to be selected on the basis of the smallest drain pipe installed downstream from the trap serving a particular fixture.
[b] The wye pattern fitting refers to a tee-wye fitting, a combination wye and eighth bend fitting or a wye and eighth bend combination of fittings with no more than one inch between the wye fitting and eighth bend fitting.
[c] NP means Not Permitted.
[d] The maximum developed length for fixture drains larger than 4 inches in diameter shall be approved by the department.

(10) CIRCUIT VENTING. In lieu of providing individual vents, a horizontal drain to which at least ~~2~~ two but not more than ~~8~~ eight wall outlet fixtures or at least ~~2~~ two but not more than ~~8~~ eight floor outlet fixtures, other than blowout type fixtures and wall-outlet carrier type water closets, are connected to the same horizontal branch drain, may be vented by a circuit vent in accordance with pars. (a) to (e).

(a) The circuit vent shall connect to the horizontal drain at the same point or a point between the ~~2~~ two most upstream fixtures.

(b) 1. A circuit vented horizontal drain into which ~~4~~ four or more fixtures discharge shall be provided with a relief vent. The relief vent shall connect to the circuit vented horizontal drain downstream of the most downstream fixture drain which is vented by the circuit vent and upstream of any other drain connections.

2. Two circuit vented horizontal drains serving a total of ~~8~~ eight fixtures, ~~4~~ four on each branch, shall be provided with at least one relief vent, unless the horizontal drains connect to a drain stack with no other drain connections located above the circuit vented horizontal drains. One relief vent may serve both horizontal drains, if installed downstream of the point where the ~~2~~ two horizontal drains are joined.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) A horizontal drain served by a circuit vent may not diminish in size from the 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~~ may not diminish in size from the relief vent connection to the circuit vent connection.

(d) Fixture drains served by a circuit vent shall conform to the provisions of sub. (9). The connection of the fixture drain to the branch drain served by the circuit vent shall be considered as the vent connection.

(e) Additional wall outlet fixtures with a drainage fixture unit value of one or less which are served by individual vents or common vents may discharge into a horizontal drain served by a circuit vent.

(11) COMMON VENTS. In lieu of providing individual vents, fixtures may be common vented in accordance with pars. (a) and (b).

(a) *Vertical drains.* A common vent may serve a maximum of ~~2~~ two fixtures where both fixture drains connect to a vertical drain at the same elevation. 1. Where this connection is by means of a sanitary tee fitting with a side inlet, the centerline of the side inlet opening may not be below the centerline of the larger opening. 2. The drain connection of a blowout type fixture, ~~or a~~ kitchen sink, or a clothes washer served by a common vent may not be by means of a double sanitary tee fitting.

(b) *Horizontal branches.* The fixture drains from ~~2~~ two wall-outlet fixtures, each with a drainage fixture unit value of one or less, or the fixture drains from ~~2~~ two traps serving a kitchen sink with or without a dishwasher may connect to a horizontal branch without individual vents provided a common vent connects to the branch drain downstream of both fixture drains. Both fixture drains shall be of the same diameter. The developed length of the drain from the vent to the farthest trap shall conform to sub. (9).

Note: See ch. SPS 382 Appendix for further explanatory material.

(12) RETURN VENTS. ~~Plumbing~~ Wall outlet fixtures may be vented in accordance with pars. (a) to (d).

(a) Wall outlet fixtures may be vented by extending an individual vent, vertical wet vent, or a common vent as high as possible under the fixture enclosure and returning the vent vertically downward and connecting the vent to the fixture drain or branch drain by means of a wye pattern fitting.

(b) Horizontal vent piping shall connect to the vertical section of the fixture vent and extend to a point where it can extend vertically to a vent terminal in accordance with sub. (16) or connect to another vent in accordance with sub. (15).

(c) Drainage fittings shall be used on all sections of the vent pipe below the floor level and a minimum slope of 1/4~~"~~ inch per foot to the drainage point shall be provided.

(d) Cleanouts shall be provided on the vent piping in accordance with s. SPS 382.35.

Note: See ch. SPS 382 Appendix for further explanatory material.

(13) WET VENTING. In lieu of providing individual vents, fixtures may be wet vented in accordance with pars. (a) to (c).

(a) *Vertical wet vents.* 1. Where ~~2~~ two wall outlet fixtures are located on the same floor level with their fixture drains connecting to the same vertical drain pipe at different elevations, the lower fixture drain may be wet vented in accordance with subd. 1. a. to e.

a. No other fixtures may discharge into the vertical drain pipe above or between the ~~2~~ two wall outlet fixtures. Additional fixtures may discharge into the vertical drain pipe below the ~~2~~ two wall outlet fixtures.

b. A branch vent shall connect to the vertical drain pipe immediately above the higher fixture drain connection.

c. The drain between the ~~2~~ two fixtures shall be at least one pipe size larger than the upper fixture drain, but not smaller than 2~~"~~ inches in diameter.

d. Both fixture drains shall conform to sub. (9). The connection of the lower fixture drain to the vertical drain shall be considered as the vent connection.

e. The higher fixture drain may not serve a water closet.

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) *Horizontal wet vents.* A drain from a lavatory or lavatories which are either provided with individual vents or a common vent may serve as the wet vent for not more than ~~2~~ two bathtubs or showers and not more than ~~2~~ two water closets in accordance with subds. 1. to 7. No other fixtures may discharge into or be served by the wet vent.

1. All of the fixtures shall be located in nonpublic bathroom groups.

2. The lavatories and bathtubs or showers shall have a common horizontal drain with the drain for the lavatories serving as a wet vent for the bathtubs or showers.

3. Where ~~2~~ two bathtubs or showers are served by the same wet vent~~;~~, their fixture drains shall connect independently to the common horizontal drain downstream of the vertical drain serving the lavatory or lavatories.

4. Where ~~2~~ two bathtubs or showers and ~~2~~ two water closets are served by the same wet vent; a relief vent shall be provided, unless the wet vented horizontal drain connects to a drain stack with no other drain connections located above the wet-vented horizontal drain. The relief vent shall connect to the horizontal drain at a point downstream of the fixture drains for the water closets and upstream of any other fixture drain connections.

5. One or ~~2~~ two water closets may connect to the common horizontal drain with the drain from the lavatories and bathtubs or showers also serving as a wet vent for the water closets. Where ~~2~~ two water closets are served by the same wet vent~~;~~, their fixture drains shall connect independently to the common horizontal drain at the same point.

6. The wet vent shall be at least 2~~"~~ inches in diameter. No more than ~~4~~ four drainage fixture units may discharge into a 2~~"~~-inch diameter wet vent.

7. A branch vent shall connect immediately above the highest fixture drain connection and shall be sized in accordance with sub. (14).

(c) *Other types of wet vents.* An individual vent serving a floor outlet fixture~~;~~, a common vent serving floor outlet fixtures~~;~~, a circuit vent~~;~~ or a relief vent serving a circuit vented drain; or a relief vent serving a wet vented horizontal drain, may serve as a wet vent in accordance with subds. 1. to 4.

1. No more than ~~2~~ two wall outlet fixtures, each fixture with a drainage fixture unit value of one or less, may have their fixture drains connected into the individual vent, common vent, circuit vent, or relief vent.

2. The wet vent shall be at least 2~~"~~ inches in diameter.

3. The branch vent to which the wet vent connects shall be sized in accordance with sub. (14). The branch vent may serve the wall outlet fixtures in lieu of individual vents or a common vent.

4. The fixtures discharging into the wet vent shall be located on the same floor level as the fixtures served by the wet vent.

Note: For explanatory material refer to ch. SPS 382 Appendix A-382.31 (13).

(14) VENT SIZE. (a) *Stack vents and vent stacks.* Stack vent and vent stack pipe sizes shall be determined in accordance with Table 382.31-2 on the basis of developed length and the diameter of the drain stack at its base.

1. The developed length of the stack vent shall be measured along the vent pipe, from the highest drain branch connection to the vent terminal or to the connection to a vent header.

2. The developed length of the vent stack shall be measured along the vent pipe from the vent stack base connection to the vent terminal or to the connection to a vent header.

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) *Vent headers.* 1. Vent header pipe sizes shall be determined in accordance with Table 382.31-3 with the number of drainage fixture units being the sum of the fixture unit loads of the stacks vented through that portion of the header. The diameter of a vent header ~~shall~~ may not be less than any vent connecting to it.

2. The developed length of the vent header shall be measured along the pipe from the most distant vent stack or stack vent base connection to the vent terminal.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Branch vents.* Branch vent pipe sizes shall be determined in accordance with Table 382.31-3. The developed length of the branch vent shall be measured along the pipe from the furthest fixture drain served by the branch vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

Note: See ch. SPS 382 Appendix for further explanatory material.

(d) *Individual vents.* Individual vent pipe sizes shall be determined in accordance with Table 382.31-3. The developed length of an individual vent shall be measured along the vent pipe from the fixture drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

Note: See ch. SPS 382 Appendix for further explanatory material.

(e) *Common vents.* Common vent pipe sizes shall be determined in accordance with Table 382.31-3. The developed length of a common vent shall be measured along the vent pipe from the drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to the vent terminal.

Table 382.31-2
Size and Length of Vent Stacks and Stack Vents

Diameter of Drain Stack at Base (inches)	Maximum Developed Length of Vent (feet)									
	Diameter of Vent (inches)									
	1 1/4	1 1/2[a]	2	3	4	5	6	8	10	12

1 1/2	50	150	NL[b]							
2	NP[c]	50	150	NL						
3		NP	50	400	NL					
4		NP	20	180	700	NL				
5			NP	50	200	700	NL			
6			NP	20	70	200	700	NL		
8				NP	25	60	250	800	NL	
10					NP	25	60	250	800	NL
12						NP	25	100	300	900

[a] Not more than 2 water closets or similar flush action type fixtures of 4 or more drainage fixture units.
[b] NL means No Limit.
[c] NP means Not Permitted.

Table 382.31-3
Minimum Diameters ~~And~~ and Maximum Length ~~Of~~ of Individual, Common, Branch, ~~And~~ and Circuit Vents ~~And~~ and Vent Headers

Drainage Fixture Units (dfu)	Maximum Developed Length of Vent (feet)								
	Diameter of Vent (inches)								
	1 1/4[a]	1 1/2[b]	2	3	4	5	6	8	10
2	50	NL[c]							
4	40	200	NL						
8	NP[d]	150	250	NL					
10	NP	100	200	NL					
24	NP	50	150	NL					
42	NP	30	100	500	NL				
72		NP	50	400	NL				
240		NP	40	250	NL				
500		NP	20	180	700	NL			
1100			NP	50	200	700	NL		
1900			NP	20	70	200	700	NL	
3600				NP	25	60	250	800	NL
5600					NP	25	60	250	800

[a] No water closets permitted.
[b] Not more than ~~2~~ two water closets or similar flush action type fixtures of ~~4~~ four or more drainage fixture units.
[c] NL means No Limit.
[d] NP means Not Permitted.

(f) *Circuit vents.* Circuit vent pipe sizes shall be determined in accordance with Table 382.31-3. The developed length of the circuit vent shall be measured along the vent from the connection with the branch drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

(g) *Relief vents.* Relief vents shall be sized in accordance with the provisions of subds. 1. to 3. The developed length of a relief vent shall be measured along the vent from the connection with the branch drain served by the vent to the point where it connects to a vent pipe of a larger diameter or to a vent terminal.

1. 'Circuit vented branch drain.' The diameter of a relief vent for a branch drain served by a circuit vent shall be at least one-~~-~~half the diameter of the branch drain. The maximum developed length shall be determined from Table 382.31-3 based on the number of drainage fixture units served by the vent.

2. 'Building drain.' The diameter of a relief vent serving a building drain, as required in sub. (7), shall be at least one-~~-~~half the diameter of the building drain. The maximum developed length shall be determined from Table 382.31-3 based on the number of drainage fixture units served by the vent.

3. 'Horizontal wet vent.' The diameter of a relief vent serving a horizontal wet vent shall be at least 1 1/2~~"~~ inches. The maximum developed length shall be determined from Table 382.31-3 based on the number of drainage fixture units served by the vent.

(h) *Yoke vents.* A yoke vent serving a drain stack shall be sized as a vent stack in accordance with par. (a).

(i) *Vents for sumps.* 1. a. Except as provided in subd. 1. b., the size of a vent for a sanitary pump with other than a pneumatic ejector, shall be determined in accordance with Table 382.31-4.

b. The size of a vent for a sanitary sump located outside, with other than a pneumatic ejector, shall be determined in accordance with Table 382.31-4~~,~~ but shall not be less than 2~~"~~ inches in diameter.

2. The air pressure relief pipe from a pneumatic ejector ~~shall~~ may not be connected to vent or vent system serving a sanitary drain system, storm drain system, or chemical waste system.

a. The relief pipe shall be of a size to relieve the air pressure inside the ejector to atmospheric pressure~~,~~ but ~~shall~~ may not be less than 2~~"~~ inches in diameter where the ejector is located outside and 1 1/4~~"~~inches in diameter for all other ejector locations.

b. The vent shall terminate in accordance with the provisions of sub. (16).

Table 382.31-4
Size and Length of Vents for Sanitary Sumps

	Maximum Developed Length of Vent[a] (feet)

Discharge Capacity of Ejector (gpm)	Diameter of Vent (inches)				
	1 1/4[d]	1 1/2[d]	2	3	4
10	NL[b]				
20	270	NL			
40	72	160	NL		
60	31	75	270	NL	
80	16	41	150	NL	
100	10	25	97	NL	
150	NP[c]	10	44	370	NL
200		NP	20	210	NL
250		NP	10	132	NL
300		NP	10	88	380
400			NP	44	210
500			NP	24	130

[a] The developed length of the vent is measured along the pipe from the connection to the sump, to the point where it connects to a vent pipe of a larger diameter.
[b] NL means No Limit.
[c] NP means Not Permitted.
[d] Diameter not permitted for exterior sumps.

(j) *Vents for chemical basins.* The size of vents serving chemical dilution or neutralizing basins shall be determined in accordance with Table 382.31-3 and based upon the number of drainage fixture units discharging into the basins.

(15) VENT GRADES AND CONNECTIONS. (a) *Vent grade.* All vent and branch vent pipes shall be graded and connected so as to drain back to a drain pipe by means of gravity.

(b) *Installation.* Vents shall be installed in accordance with subds. 1. to 3.

1. Except for wet vent piping, the connection of a vent to horizontal drain piping shall be at a point above the horizontal center line of the drain piping.

2. Except as provided in subs. (12) and (17), vent piping serving a wall-outlet fixture may not offset horizontally less than 36" inches above the floor, but in no case lower than the elevation of the highest flood level rim of any fixture served by the vent.

3. Vent piping may not connect to a branch vent less than 38" inches above the floor, but in no case lower than 2" inches above the elevation of the highest flood level rim of any fixture served by the vent.

Note: See ch. SPS 382 Appendix for further explanatory material.

(16) VENT TERMINALS. All vents and vent systems shall terminate in the open air in accordance with this subsection.

(a) *Extension above roofs.* Extensions of vents through a roof shall terminate at least 8" inches above the roof. Where the roof is to be used for any purpose other than weather protection, the vents shall extend at least 7 feet above the roof.

(b) *Waterproof flashings.* The penetration of a roof system by a vent shall be made watertight with an approved flashing.

(c) *Prohibited uses.* Vent terminals shall not be used as flag poles, support for antennas or other similar purposes.

(d) *Location of vent terminals.* ~~1. A vent shall not terminate under the overhang of a building.~~

2. All vent terminals shall be located in accordance with all of the following:

a. At least 10 feet from an air intake~~;~~.

b. At least 5 feet from a power exhaust vent~~;~~.

c. At least 10 feet horizontally from or 2 feet above roof scuttles, doors, and openable windows~~; and~~.

d. At least 5 feet from or 2 inches above parapet walls.

e. If a vent terminates under an overhang, it shall be located a minimum of 5 feet below the overhang.

3. Where a structure has an earth covered roof extending from surrounding grade, the vent extension shall run at least 7 feet above grade and terminate with an approved vent cap. The portion of vent pipe outside the structure shall be without joints, except one fitting may be installed where the pipe leaves the top or side of the structure.

(e) *Extension through wall.* ~~Where approved by the department, a~~ A vent may terminate through an exterior wall. Such a vent shall terminate at least 10 feet horizontally from any lot line and shall terminate downward. The vent shall be screened and shall comply with par. (d).

(f) *Extensions outside buildings.* Drain or vent pipe extensions ~~shall~~ may not be located or placed on the outside of an exterior wall of any new building~~,~~ but shall be located inside the building.

(g) *Frost closure.* For protection against frost closure, each vent terminal shall be at least 2" inches in diameter. Where it is necessary to increase the diameter of the vent, the change in diameter shall be made at least 6" inches inside the building.

Note: See ch. SPS 382 Appendix for further explanatory material.

(h) *Penetrations through grade.* Except when installation is in accordance with par. (d) 3., penetrations through grade shall terminate at least 12" inches above finished grade and terminate with a vent cap or return bend.

(17) COMBINATION DRAIN AND VENT SYSTEMS. In lieu of providing individual vents, fixtures may be vented in accordance with pars. (a) to (c).

(a) *Stacks.* 1. ~~A~~ Unless otherwise permitted in subd. 2. or 3., a drain stack may serve as a combination drain and vent system for fixtures in accordance with subd. 1. a. to e.

a. The drain stack ~~shall~~ may not serve more than ~~3~~ three fixtures. Each fixture shall be located on a separate floor level.

b. The drain stack shall be limited to serving fixtures with a drainage fixture unit value of no greater than 2.0. A urinal may not discharge into the combination drain and vent portion of the stack. The largest drainage fixture unit value served by the stack shall determine the stack size as specified in Table 382.31-5.

c. The drain stack ~~shall~~ may not be offset horizontally above the lowest fixture drain connection.

d. The developed length of any fixture drain from the trap weir to the drain stack ~~shall~~ may not exceed the limits specified in Table 382.31-1.

e. The drain stack and its attendant vent shall be sized in accordance with Table 382.31-5.

Note: See ch. SPS 382 Appendix for further explanatory material.

Table 382.31-5
Stack Sizing by DFU Value

Drainage Fixture Unit (dfu) Value	Size of Stack (inches)
0.5	1 1/2
1.0	2
2.0	3

2. A drain stack may serve as a combination drain and vent system for a kitchen sink and a wall outlet fixture with a drainage fixture unit value of ~~2~~ two or less in accordance with subd. 2. a. to d.

a. One kitchen sink within a dwelling unit, with or without a food waste grinder or dishwasher connection, shall connect to the drain stack above the wall outlet fixture with a drainage

fixture unit value of 2 or less. No other fixtures may connect to the drain stack.

b. The drain stack shall be at least 2 inches in diameter below the kitchen sink connection and it shall be at least 4 inches in diameter below the connection to the lower fixture.

c. In lieu of the minimum sizes as required in subd. 2. b., the entire stack below the kitchen sink connection may be 3 inches in diameter.

d. The drain stack ~~shall~~ may not offset horizontally above the fixture drain connection for the lower fixture.

3. A drain stack may serve as a combination drain and vent system for floor drains serving elevator door areas in accordance with subd. 3.a. to e.

a. The drain stack shall be limited to serving emergency floor drains serving elevator door areas.

b. The drain stack may not be offset horizontally above the lowest branch connection.

c. The developed length of any trap weir vented by the stack to the drain stack may not exceed the limits specified in Table 382.31-1.

d. Emergency floor drains, provided with individual traps that utilize other means of venting, are permitted to discharge into the stack.

e. A vent, at least two inches in diameter but not less than one-half the diameter of the largest portion of the drain stack, shall extend from immediately above the highest branch connection to a vent terminal in accordance with sub. (16).

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) *Building drains.* A building drain or a building subdrain may serve as a combination drain and vent system for floor drains and floor outlet fixtures in accordance with subds. 1. to 6.

1. A vent or drain at least 2 inches in diameter shall be connected upstream of any building drain branch or building subdrain branch.

2. No more than ~~2~~ two water closets may connect to the building drain or building subdrain by means of building drain branches or building subdrain branches.

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 or drain required in subd. 1. shall be at least one pipe size larger than the minimum size permitted in Table 382.30–3 based on the total drainage fixture unit load, but not less than 3 inches.

b. The vent or drain 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, but may not be less than 2 inches in diameter.

c. A vent serving a drain 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 system, but may not be less than 2 inches in diameter.

4. The trap of a floor drain or a floor outlet fixture, except a water closet, connected to a building drain branch or building subdrain branch shall be at least 3" inches in diameter.

5. A building drain branch or building subdrain branch may not connect to a building drain or building subdrain downstream from the base fitting of a drain stack 2" inches or larger in diameter within the distance equal to 20 pipe diameters of the building drain or building subdrain.

6. The pitch and the developed length of the building drain branch or building subdrain branch may not exceed the limits specified in Table 382.31-1.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Laboratory sink venting.* A horizontal drain may serve as a combination drain and vent system for island laboratory sinks in accordance with subds. 1. to 7.

1. A vent stack or a drain stack at least 2" inches in diameter shall be connected upstream of any fixture drain vented by the combination drain and vent system.

2. a. That portion of the horizontal drain between the connection of fixture drain and the vent stack or drain stack required in subd. 1. shall be at least one pipe size larger than the minimum size permitted in Table 382.30-2 based on total drainage fixture unit load.

b. The vent stack or drain stack required in subd. 1. shall be at least one-half the diameter of that portion of the horizontal drain, which is vented by the stack, but may not be less than 2" 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 horizontal drain, which is vented by the stack, but may not be less than 2" in diameter.

3. All fixture drains vented by the horizontal drain shall be at least 3" inches in diameter.

4. Fixture drains to be vented by the horizontal drain shall connect individually to the horizontal drain.

5. An individual vent or common vent shall be extended as high as possible under the sink enclosure and then returned vertically downward and connected to the horizontal drain. A cleanout shall be provided on the vent piping.

6. In lieu of connecting the vent to the horizontal drain which forms the combination drain and vent system, the vent may connect to a horizontal fixture drain vented by the combination drain and vent system. The pitch and developed length of the horizontal fixture drain shall not exceed the limits specified in Table 382.31-1.

7. Fixture drains to be vented by the horizontal drain ~~shall~~ may not connect to a horizontal drain downstream from the base fitting of a drain stack 2" inches or larger in diameter within the distance equal to 20 pipe diameters of the horizontal drain serving the stack.

Note: See ch. SPS 382 Appendix for further explanatory material.

(18m) AIR ADMTTANCE VALVES (AAV). The use of air admittance valves in lieu of traditional venting shall comply with all of the following:

(a) The AAV may only serve as a termination point for a branch vent, circuit vent, common vent, individual vent, wet vent, or combination drain and vent system. The AAV may serve a pumped-discharge type clothes washer standpipe when the fixture drain downstream of the point of vent is at least 3 inches in diameter.

(b) The AAV may not serve as a vent termination point for any of the following:

1. To relief positive pressures.

2. Serving chemical waste system.

3. Serving POWTS holding tank or POWTS treatment tank.

4. Serving a stack vent serving two or more branch intervals.

5. Serving a vent stack that is required in accordance with s. SPS 382.31 (4) (a).
6. Serving a sump.
7. Serving Bio Safety Lab (BSL) 3 or 4 laboratories.

(c) The size and developed length for a vent using an AAV shall conform with Table 382.31-6.

TABLE 382.31-6

Maximum DFU's	Maximum Developed Distance of Vent to Connection of AAV in Feet		
	Diameter in Inches		
	1-1/4[a]	1-1/2[c]	2
1	35	NL	NL
3	28	140	NL
6	NP[e]	100	200
20	NP	60	110

[Footnotes to table?]

(d) Testing. AAV's shall be tested. The AAV shall be tested prior to or after installation. The AAV shall be subjected to a pressure equal to 1 inch of water column. After observing for 1 minute, if the pressure falls one-half of an inch or less, it will be considered a passing AAV.

(e) Installation. The installation of the AAV shall conform with all of the following:

1. The AAV must be installed in the vertical position (plus or minus 15 degrees from plumb).
2. The vent system being served by the AAV may have horizontal offsets located less than 36 inches above the floor on which the fixtures are installed provided the vent does not connect to another vent.
3. The installation location of the AAV shall conform with all of the following:
   a. A minimum of 4 inches above the top of the horizontal pipe being served.
   b. No more than 20 inches below the flood rim of any fixture served.
   c. At least 6 inches above insulation materials.
   d. In an accessible area.
   e. Within a space that allows air to enter the product and has an opening equivalent to requirements in s. SPS 382.31 (14) to the atmosphere.
   f. With at least one vent connected to the building drain waste and vent system, and located downstream of AAV extending to the outside atmosphere.
   g. With a 3 inch or larger vent to the outside atmosphere connected to the building drain waste and vent system.
4. The AAV may not be located in any of the following areas:
   a. An enclosed stairwell.
   b. An area subject to positive pressure conditions for more than 12 continuous hours.
   c. An area utilized as supply or return air plenum.
   d. A pit, vault, or depression that is below the adjacent grade or floor level.
   e. An area that subjects the valve to grease or other materials that could cause fouling of the valve's seal.
4. The AAV may not be located within the same room or enclosure as any of the following:
   a. A Bio Safety Lab (BSL) 3 and 4 laboratory.
   b. A health care facility as defined is s. SPS 381.01 (116).
   c. A restaurant kitchen licensed by the state or local department of health.
   d. A residential bedroom.
   e. A daycare.
6. Branches that have fixtures served by the AAV shall be provided with a relief vent located between the most downstream fixture and the stack when connected to a stack that has four or more branch intervals above the branch connection.

(f) Notice to Owner: When an AAV is installed in a building, the contractor shall provide the owner with a copy of the manufacturer's written AAV description.

~~(18)~~ **(19)** PROHIBITED USES. A vent or vent system ~~shall~~ may not be used for purposes other than the venting of the plumbing system.

(a) *Boiler blowoff basin vents.* Vent piping from boiler blowoff basins ~~shall~~ may not be connected to a vent or vent system serving a sanitary drain system, storm drain system, or chemical waste system.

(b) *Chemical waste vents.* Vent piping for chemical waste systems ~~shall~~ may not be connected to a vent system serving a sanitary drain system or storm drain system.

(c) *Steam vents.* Vents serving steam operated sterilizers, cleansing or degreasing equipment, pressing machines, or any other apparatus which normally discharges steam into the vent ~~shall~~ may not be connected to a vent or a vent system serving a sanitary drain system, storm drain system, or chemical waste system.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; am. (11) (a), (17) (b) 3. b. and (c) 2. b., r. and recr. (11) (b), r. (13) (a) 2., cr. (17) (b) 3. c. and (c) 2. c., Register, May, 1988, No. 389, eff. 6-1-88; reprinted to correct (17) (c) 4., Register, February, 1991, No. 422; cr. (4) (b) 4. and (17) (a) l. f., r. and recr. (5) (c) l. c. and (17) (c) 4., am. (5) (c) 2. c., (10) (intro.), (b) 1., (11) (b), (17) (a) l. e. and (17) (b), Register, August, 1991, No. 428, eff. 9-1-91; am. (6) (c), (7) (b), (10) (intro.), (a), (b) 1., (e), (13) (a) 1. c., (c) (intro.), 1. and 4., r. (16) (h), Register, February, 1994, No. 458, eff. 3-1-94; CR 02-002: renum. (8) to be (8) (a) and am., cr. (8) (b), (14) (j) and (16) (h), am. (11) (a), (12) (intro.), (a), (13) (c) 1. (17) (a) 1. (intro.) to b., and Table 82.31-4, r. and recr. Table 82.31-5, Register April 2003 No. 568, eff. 5-1-03; CR 08-055: am. (4) (a), (10) (c), (13) (a) 1. e., (14) (g) 2., (17) (a) 1. e., (b) 1. and 3., r. and recr. (5) and (6), r. (17) (a) 1. f. Register February 2009 No. 638, eff. 3-1-09; correction in (17) (a) 1. (intro.) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 10-064: am. (5) (a) 2., (6) (c), (17) (a) 2., r. (14) (g) 2., renum. (14) (g) 3. and 4. to be (14) (g) 2. and 3. Register December 2010 No. 660, eff. 1-1-11; correction in (14) (g) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2010 No. 660; correction in (2), (5) (a) 2., (9) (a) 1., 2., (12) (d), (14) (a) (intro.), (b) 1., (c), (d), (e), (f), (g) 1., 2., 3., (i) 1. a., b., (j), (17) (a) 1. b., d., e., (b) 3. a., 6., (c) 2. a., 6. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.32 **Traps and direct fixture connections.**

(1) SCOPE. The provisions of this section set forth the requirements for the types and installation of traps and direct fixture connections.

(2) MATERIALS. All traps and fixture connections shall be of approved materials in accordance with ch. SPS 384.

(3) GENERAL. Each plumbing fixture, each compartment of a plumbing fixture and each floor drain shall be separately trapped by a water seal trap, except as provided in par. (a) or as otherwise permitted by this chapter. A fixture shall not be double trapped.

(a) *Trap exceptions.* The plumbing fixtures listed in subds. 1. to 3. shall not be required to be separately trapped:

1. Fixtures having integral traps;

2. Compartments of a combination plumbing fixture installed on one trap, provided the following apply:

a. No compartment is more than 6~~"~~ inches deeper than any other;

b. The distance between the compartments' waste outlets farthest apart does not exceed 30~~"; and~~ inches.

c. No compartment waste outlet is equipped with a food waste grinder.

3. Storm drains as provided in s. SPS 382.36 (12) (a).

Note: Residential exclusion see s. SPS 325.01 (4) (a).

(b) *Trap seals.* Each trap shall provide a liquid seal depth of not less than 2~~"~~inches and not more than 4~~"~~inches, except as otherwise specified in this chapter.

(c) *Loss of trap seal.* A trap seal primer valve may be installed on a trap subject to high rates of evaporation.

1. A trap seal primer valve or other means of trap seal protection acceptable to the department shall be provided for a trap subject to seal loss due to evaporation.

Note: Liquids acceptable to use for reducing trap seal evaporation include mineral oil, vegetable oil, propylene glycol and glycerin.

2. Trap seal primer valves shall conform to ASSE 1018.

Note: A list of referenced standards is contained in ch. SPS 381.

(d) *Design.* Traps shall be self-scouring and ~~shall~~ may not have interior partitions, except where such traps are integral with the fixture. Uniform diameter P-traps shall be considered self-scouring.

(e) *Size.* Traps shall be of diameters not less than those specified in Table 382.30-1 of s. SPS 382.30.

1. The minimum trap diameter for a trap serving a shower replacing a residential-type bathtub is 1.5 inches providing the following apply:

a. The shower is served by one control valve.

b. The shower head shall have a maximum flow rate of 2.5 gallons per minute (gpm).

(f) *Prohibited traps.* ~~The~~ Except as provided in sub. (e), the installation of the types of traps listed in subds. 1. to 6. shall be prohibited:

1. Bell traps~~;~~.

2. Drum traps, except where specifically approved by the department~~;~~.

3. S-traps ~~which~~ that are not integral parts of fixtures~~;~~.

4. Separate fixture traps ~~which~~ that depend on interior partitions for the trap seal~~;~~.

5. Traps ~~which~~ that depend upon moving parts to maintain the trap seal~~; and~~.

6. Traps ~~which~~ that in case of defect would allow the passage of sewer air.

(4) INSTALLATION. (a) *Setting of traps.* All traps shall be rigidly supported and set true with respect to the water level, ~~and so~~ shall be located as to protect the water seals~~,~~ and shall be protected from freezing and evaporation.

(b) *Distance from fixture drain outlets.* 1. 'Vertical distance.' ~~Except as provided in subd. 1. a. to c., the~~The vertical distance of a wall outlet fixture between the top of the fixture drain outlet and the horizontal center line of the trap outlet shall not exceed 15~~"~~ inches.

a. The vertical distance between the top of the strainer of a floor drain or the opening of a standpipe receptor and the horizontal center line of the trap outlet ~~shall~~ may not exceed 36~~"~~ inches.

b. The vertical distance between the top of the fixture drain outlet of a pedestal fixture or a cuspidor and the horizontal center line of the trap outlet shall not exceed 60~~"~~ inches.

c. The vertical distance between the water level in the bowl of a floor outlet water closet or floor outlet clinic sink and the center line of the horizontal portion of the fixture drain ~~shall~~ may not exceed 36~~"~~ inches.

d. The vertical distance from the inlet to the horizontal centerline of the fixture drain for a campsite receptor, exterior storm drain inlet, or a receptor for a sanitary dump station may exceed 3 feet so as to permit the trap to be installed below the predicted depth of frost.

e. The vertical distance of a floor outlet fixture between the top of the fixture drain outlet and the horizontal center line of the trap outlet may not exceed 18 inches.

2. 'Horizontal distance.' Except as provided in subd. 2. a. and b., the horizontal distance between the vertical centerline of a fixture drain outlet and the vertical centerline of the trap inlet ~~shall~~ may not exceed 15~~"~~ inches.

a. The horizontal distance for a pedestal drinking fountain ~~shall~~ may not exceed 24~~"~~ inches.

b. The horizontal distance for an exterior sanitary area drain or a residential garage floor drain discharging through an interior trap ~~shall~~ may not exceed 25 feet.

c. The minimum horizontal distance between the vertical centerline of the outlet from a floor-mounted water closet and a 3-inch double tee shall be 30 inches.

Note: See ch. SPS 382 Appendix for further explanatory material.

(5) DIRECT FIXTURE DRAIN CONNECTION. Except as provided in s. SPS 382.33, all plumbing fixtures and appliances discharging wastes shall connect directly to a drain system.

(a) *Floor drains.* 1. Floor drains shall be so located as to be accessible for cleaning purposes.

2. A floor drain receiving the wash from garbage cans shall be at least 3~~"~~ inches in diameter.

(b) *Kitchen sinks.* Horizontal drain piping serving ~~a kitchen sink trap shall~~ appliances with pumping action discharge may not connect to vertical drain piping by means of a double sanitary tee.

(c) *Water closets.* A water closet shall discharge through a drain pipe or fitting with a minimum diameter of 3~~"~~ inches.

1. A floor mounted wall outlet water closet shall connect to a 4~~-~~inch or 4 × 3~~-~~inch closet collar fitting or to a horizontal or vertical carrier type fitting.

2. A floor outlet water closet shall connect to a 4~~-~~inch or 4 × 3~~-~~inch closet collar fitting. ~~A 4 × 3 inch closet bend fitting may be installed where a 4 inch closet collar fitting is used~~.

3. A wall mounted wall outlet water closet shall connect to a horizontal or vertical carrier type fitting.

4. Two water closets discharging to a vertical drain from opposite sides by means of the same fitting shall be installed in accordance with subd. 4. a. and b.

a. Where the vertical drain is 3~~"~~inches in diameter, the fitting for floor outlet water closets shall be a 3~~-~~inch double wye pattern fitting.

b. Where the water closets are wall outlet types, the fitting shall be a double wye pattern fitting or a carrier-type fitting.

(d) *Blowout-type fixtures.* Blowout-type plumbing fixtures shall be installed in accordance with the approval of the department.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; am. (4) (a), cr. (5) (intro.) and (d), Register, May, 1988, No. 389, eff. 6-1-88; am. (4) (b) 1. b., Register, April, 2000, No. 532, eff. 7-1-00; CR 02-002: r. and recr. (3) (c) 1. and (4) (b) 2., am. (4) (b) 1. b., cr. (4) (b) 1. d., Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. (3) (intro.) Register January 2004 No. 577, eff. 2-1-04; CR 04-035: am. (3) (a) 3. Register November 2004 No. 587, eff. 12-1-04; CR 08-055: cr. (4) (b) 2. c. Register February 2009 No. 638, eff. 3-1-09; correction in (2), (3) (a) 3., (e), (5) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.33 **Indirect and local waste piping. (1)** SCOPE. (a) The provisions of this section set forth the requirements for the installation of indirect waste piping and local waste piping.

(b) Indirect waste piping and local waste piping draining the fixtures, appliances, and devices having a public health concern, including ~~but not limited to~~ those listed in Table 382.33-1, shall be considered as plumbing and shall comply with the provisions of this section.

(2) MATERIALS. Indirect waste piping more than 30~~"~~ inches in length and all local waste piping shall be of approved materials in accordance with ch. SPS 384.

(3) SIZE. Except as provided in pars. (a) and (b), indirect waste piping more than 30~~"~~ inches in length and all local waste piping shall be sized in accordance with s. SPS 382.30.

(a) Indirect or local waste piping not exceeding 20 feet in length for refrigerated food display cases may not be less than one inch in diameter.

(b) Indirect waste piping, attached to an appliance, appurtenance, or equipment through which pressurized waste is discharged, shall be sized in accordance with specifications of the manufacturer of the appliance, appurtenance, or equipment.

Table 382.33-1
Types of Fixtures, Appliances, and Devices of a Public Health Concern

Refrigerated food storage rooms and compartments
Refrigerated food display cases
Ice compartments and ice makers
Vending machines
Steam tables, kettles, and related equipment
Food preparation sinks
Potato peelers
Egg boilers
Boiler blowoff basin outlet drains
Coffee makers and urns
Food processing equipment
Baptismal founts
Clothes washers and extractors
Dishwashers
Stills
Sterilizers
Bar and soda fountains
Boiler blowoff basin outlet drains
Other devices, fixtures, and appliances as approved by the department

(4) INSTALLATION. Indirect waste piping and local waste piping shall be so installed as to permit access for flushing and cleaning.

(5) TRAPS. (a) *Indirect waste piping.* 1. Gravity flow indirect waste piping more than 30~~"~~ inches in length shall be provided with a trap in accordance with s. SPS 382.32 (4), except indirect waste piping draining a sterilizer ~~shall~~ may not be trapped.

2. All indirect waste piping draining a refrigerated food storage room, compartment, or display case shall be provided with a trap in accordance with s. SPS 382.32 (4).

(b) *Local waste piping.* Local waste piping handling sanitary wastes and more than 30~~"~~ inches in length shall be provided with a trap in accordance with s. SPS 382.32 (4).

~~**Note:** Residential exclusion see s. SPS 325.01 (3).~~ (DPD: Only repeal if SPS 325 repealed).

(6) MAXIMUM LENGTH. Indirect waste piping and local waste piping handling sanitary wastes ~~shall~~ may not exceed 30 feet in length horizontally nor 15 feet in length vertically.

Note: See ch. SPS 382 Appendix for further explanatory material.

(7) AIR-GAPS AND AIR-BREAKS. All indirect waste piping and all local waste piping shall discharge by means of an air-gap or air-break into a receptor.

(a) *Air-gap installation.* The installation of an air gap shall conform to any of the following requirements:

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~~ may not be less than 2 inches.

2. The installation of all air-gap fittings shall comply with ASME A112.1.3.

3. The installation of a residential dishwashing machine manufactured air gap shall comply with ASSE 1021.

(b) *Air–break installation.* The air-break between indirect waste piping or local waste piping and the receptor shall be accomplished by extending the indirect waste piping or local waste piping below the flood level rim of the receptor and terminating at an elevation above the trap outlet.

Note: See ch. SPS 382 Appendix for further explanatory material.

(8) RECEPTORS. A receptor receiving the discharge from indirect waste piping or local waste piping shall be of a shape and capacity as to prevent splashing or flooding. Receptors shall be installed in accordance with this subsection and shall be accessible.

(a) *Waste sinks and standpipes.* A waste sink or a standpipe serving as a receptor shall have its rim at least one inch above the floor.

(b) *Floor sinks.* A floor sink serving as a receptor shall be equipped with a removable metal basket over which the indirect waste piping or local waste piping is to discharge, or the floor sink shall be equipped with a dome strainer. Indirect waste piping or local waste piping ~~shall~~ may not discharge through a traffic grate~~,~~ but shall terminate over an ungrated portion of the floor sink.

(c) *Local waste piping.* Local waste piping may not receive discharge from another local waste pipe.

(d) *Other receptors.* A plumbing fixture may not be used as a receptor for indirect or local waste piping, except as provided in subds. 1. to ~~7~~8.

1. The indirect waste piping of a portable dishwasher or water treatment device serving one or ~~2~~ two outlets may discharge into a kitchen sink of a dwelling unit or to a branch tail piece serving a kitchen sink.

2. The indirect waste piping of ~~an~~ a residential-type automatic clothes washer or water treatment device may discharge into a laundry tray.

3. The indirect or local waste piping serving a cross connection control device or assembly, water treatment device, air conditioner, humidifier, or furnace condensate may discharge into a ~~branch~~ tailpiece serving a laundry tray.

4. The local waste piping serving a water heater temperature and pressure relief valve, water treatment device, cross connection control device or assembly, humidifier, sterilizer, or a furnace or air conditioner may discharge into the riser of a floor drain when installed in accordance with sub. (7) (b).

5. The indirect or local waste piping serving a water heater temperature and pressure relief valve, water treatment device, cross connection control device or assembly, or a furnace or air conditioner may discharge to a floor served by a floor drain so as not to create a health or safety hazard.

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~~ tailpiece of a trap serving a ~~laboratory~~ sink that is provided with a plaster trap and is installed within 3 feet of the mold grinder.

8. A water closet, clinical sink, or a urinal may receive the discharge from a mortuary or autopsy table.

Note: See ch. SPS 382 Appendix A-382.33 (8) (a) to (d) for further explanatory material.

(9) INDIRECT WASTE PIPING REQUIRED. Indirect waste shall discharge to an approved receptor. (a) *Boilers, pressure tanks, and relief valves.* Boilers, pressure tanks, relief valves, and similar equipment discharging to a drain system shall be by means of an air-gap.

1. Steam pipes ~~shall~~ may not connect or discharge to any part of a plumbing system.

2. a. Except as provided in subd. 2. b., wastewater more than 160°~~–~~F in temperature shall be discharged by means of indirect waste to the plumbing system.

b. Steam condensate blow down shall be cooled to 160°F in temperature prior to discharging to a plumbing system.

(b) *Clear water.* When discharging to a plumbing system, all clear water shall discharge by means of an air-gap.

(c) *Clothes washers.* 1. 'Residential types.' Residential-type clothes washers shall discharge into the sanitary drain system by means of an air-break.

a. A standpipe receptor may not extend more than 36 inches nor less than 18 inches above the centerline of the trap outlet.

b. A standpipe receptor shall terminate at least 26 inches but not more than 48 inches above the floor on which the clothes washer is located.

c. ~~a.~~ The maximum allowable number of washers ~~which~~ that may ~~be connected~~ discharge to ~~a~~the minimum sized trap shall be in accordance with Table 382.33-2.

~~d~~b. Washer wastes ~~shall~~ may not be discharged to gutters, troughs, local waste piping, indirect waste ~~manifold~~ manifolds, or other similar connections.

2. '~~Self-service laundries~~Laundries.' Pumped-discharge automatic clothes washing equipment, including residential-type clothes washers in launderettes, laundromats, and self-service laundry establishments shall have the wastes discharge to a drain system by means of standpipes. The standpipes shall be installed in accordance with subd. 1.

~~a. The maximum number of washers which may be connected to a trap shall be in accordance with Table 382.33-2.~~

~~b. Washer wastes shall not be discharged to gutters, troughs, local waste piping, indirect waste manifold or other similar connections.~~

3. 'Commercial-type.' Gravity discharge ~~type~~ clothes washing equipment shall discharge by means of an air-break or by other approved methods into a floor receptor, trench, or trough.

a. The receptor shall be sized to hold one full simultaneous discharge load from every machine draining into the receptor.

b. The size of the receptor drain shall be determined by the manufacturer's discharge flow rate and the frequency of discharge.

Note: See ch. SPS 382 Appendix for further explanatory material.

c. All wastes from the washers shall flow through ~~a Commercial laundry~~ an interceptor as specified in s. SPS 382.34.

Table 382.33-2
~~Washer Connections~~ Clothes Washer Discharge

Trap Diameter	Maximum Number of Washers
2 inches	1 machine
3 inches	3 machines
4 inches	4 machines

(d) *Dishwashing machines.* All dishwashing machines shall discharge to the sanitary drain system.

1. 'Residential type.' The indirect waste piping from a residential-type dishwashing machine ~~shall~~ may not exceed a developed length of 10 feet. The indirect waste piping from a residential-type dishwashing machine shall be installed in accordance with one of the following methods:

a. Where an air-gap or air-break is located below the countertop, the indirect waste piping from the dishwashing machine shall discharge to a standpipe. The standpipe shall be at least 1 ½ inches in diameter and shall extend at least 15 inches above the trap weir.

b. Where an air-gap or air-break is located above the countertop, the indirect waste piping from the dishwashing machine shall discharge to local waste piping. The local waste piping shall connect to the kitchen sink branch tailpiece above the trap inlet, the standpipe, or to the dishwashing machine connection of a food waste grinder. When the local waste piping discharges to a standpipe, the standpipe shall be at least 1~~–~~½ inches in diameter and shall extend at least 15 inches above the trap weir. Where a hose is used for local waste piping, the developed length shall not exceed 18 inches.

2. 'Commercial'. Commercial dishwashing machines shall discharge into a sanitary drain system by means of an air-gap or air-break into a trapped and vented receptor. The indirect waste piping may not be more than 30 inches in length.

(e) *Drips and drain outlets.* Appliances, devices, and apparatus not defined as plumbing fixtures which have drip or drain outlets, ~~which~~ that discharge to the plumbing system, shall discharge into an approved receptor by means of an approved air-gap or air-break.

~~(f) *Elevator drains.*~~

~~3. A sump may not be located in an elevator machine room.~~

~~4. A drain serving an elevator pit that discharges to a sump shall have a submerged inlet constructed to maintain a minimum 6" trap seal.~~

~~5. A sump located in an elevator pit may only receive storm or clear water waste from the elevator pit or the elevator machine room, or both.~~

~~**Note:** See ch. SPS 382 Appendix for further explanatory material.~~

(g) *Food ~~handling establishments~~ service.* ~~Plumbing~~ For appliances other than dwelling units, plumbing fixtures, devices, appliances, and appurtenances installed ~~in~~ for food ~~handling establishments engaged in~~ service including the storage, preparation, selling, serving, or processing of food intended for human consumption, shall be installed in accordance with this paragraph.

1. 'Bar ~~and soda fountain~~ sinks.' ~~Where a~~ A bar, ~~or~~ soda fountain, or handwashing sink ~~is so located that the trap for the sink cannot be vented as specified in s. SPS 382.31, the sink drain shall~~ may discharge to the sanitary drain system through indirect waste piping.

a. Where the indirect waste piping is not trapped, the wastes shall be discharged by means of an air-gap.

b. Where the indirect waste piping is trapped, the wastes shall be discharged by means of an air-gap or air-break.

2. 'Beer taps, coffee makers, glass fillers, and soda dispensers.' The drip pan from a beer tap, coffee maker, glass filler, soda dispenser, or similar equipment shall discharge to the sanitary drain system through indirect waste piping by means of an air-break or air-gap.

3. 'Novelty boxes, ice compartments, and ice cream dipper wells.' Novelty boxes, ice compartments, and ice cream dipper wells shall discharge to the sanitary drain system through indirect waste piping by means of an air-gap.

a. The indirect waste piping ~~shall~~ may not exceed 30" inches in length.

b. The indirect waste piping draining a novelty box or ice compartment may not discharge or connect to the indirect waste piping or local waste piping of any other fixture, appliance, or device other than a novelty box or ice compartment.

4. 'Refrigerated food storage rooms, compartments, and display cases.' Drains serving refrigerated food storage rooms, compartments, or display cases shall discharge to the sanitary drain system through indirect waste piping. The indirect waste piping shall drain by gravity to a receptor by means of an air-gap or air-break. Where an air-break is installed, the flood level rim of the receptor shall be at least 2" inches below the top of the fixture strainer or drain opening in the refrigerated room, compartment, or display case.

5. 'Enclosed food processing equipment.' Coffee urns, egg boilers, potato peelers, steam kettles, steam tables, vending machines, and similar types of enclosed food processing equipment shall be discharged to the sanitary drain system through indirect waste piping by means of an air-gap.

6. 'Food preparation.' Open culinary sink compartments for thawing or washing food shall discharge to the sanitary drain system through an independent connection by means of an air-gap. The fixture drain upstream of the air-gap ~~shall~~ may not exceed a length of 30" inches.

Note: See ch. SPS 382 Appendix for further explanatory material.

(h) *Sterilizers.* Appliances, devices, or apparatus, such as stills, sterilizers, and similar equipment requiring waste connections and used for sterile materials, shall discharge through indirect waste piping to the sanitary drain system by means of an air-gap.

Note: See s. SPS 382.50 regarding sterilizer wastes.

(i) *Cross connection control devices or assemblies.* Where a receptor is provided, the vent port discharge from cross connection control devices or assemblies shall discharge to the receptor by means of an air-gap.

(j) *Vacuum systems—central units.* Central vacuum units shall discharge by means of an air-gap or air break.

(k) *Swimming pools.* 1. The backwash and drain wastewater from a swimming pool, wading pool, or whirlpool shall discharge in accordance with Table 382.38-1.

2. The discharge from deck drains serving indoor pools shall be directed to the sanitary sewer via an air-gap.

3. The discharge from deck drains serving outdoor pools shall be directed to the storm sewer by way of an air-gap, air-break, or to grade. The distance from the top of the air-break to the pool deck shall be a minimum of 6 inches.

4. The requirements for sewer connections as specified in ch. SPS 390 applies to all public swimming pools.

(10) WATER TREATMENT DEVICES. (a) The waste discharge of a water treatment device to the drain system shall be protected in accordance with s. SPS 382.41 with respect to cross connection control.

(b) The indirect waste piping or tubing from a water treatment device shall be of a material conforming to one or more of the standards listed in Tables 384.30-8 or 384.30-11.

Note: For appliances, devices and equipment not included in this section or other sections contact the department for information and proposed installation review.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; r. and recr. Table 82.33-1 and (9) (g) 5., cr. (8) (c) 3., (9) (g) 6. and (k), Register, May, 1988, No. 389, eff. 6-1-88; r. and recr., (3), am. (9) (c) 1. a., (d) 2. and (g) 4., Register, August, 1991, No. 428, eff. 9-1-91; am. (8) (d) 1., 2. and (9) (g) 3. b., r. (9) (k), cr. (10), Register, February, 1994, No. 458, eff. 3-1-94; correction in (9) (i) 5., made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1994, No. 458; r. and recr. (9) (f), Register, April, 1998, No. 508, eff. 5-1-98; correction in (9) (i) 5. made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1998, No. 508; r. and recr. (9) (i), cr. Table 82.33-3, Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: am. (5) (a) 2., (7) (b), (9) (c) 1. b., (e), (g) 6., renum. (8) (a) 1., (9) (a) 2. and (10) to be (8) (a), (9) (a) 2. a. and (10) (a) and am. (9) (a) 2. a., r. (8) (a) 2., r. and recr. (8) (c), (d), (9) (b), (d) 1. and (i), cr. (9) (a) 2. b., (c) 1. c., and (10) (b) Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. (9) (c) 1. b., r. (9) (d) 3. and table 82.33-3, cr. (9) (k) Register January 2004 No. 577, eff. 2-1-04; CR 08-055: r. and recr. (7) (a), cr. (8) (d) 6. and 7., am. (9) (c) 1. a., b. and (f) 1., r. (9) (c) 1. c. Register February 2009 No. 638, eff. 3-1-09; correction in (8) (d) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register February 2009 No. 638; CR 10-064: am. Table 82.33-2 Register December 2010 No. 660, eff. 1-1-11; correction in (1) (b), (2), (3) (intro.), (5) (a) 1., 2., (b), (9) (c) 2. a., 3. c., (f) 1., (g) 1., (k) 1., 4., (10) (a), (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.34 ~~Wastewater~~ Water treatment and holding devices. (1) SCOPE. The provisions of this section set forth the requirements for design and installation of plumbing ~~wastewater~~ water treatment and holding devices, appurtenances, and systems, including ~~but not limited to~~ interceptors, catch basins, decontamination tanks, and dilution and neutralizing basins.

(2) MATERIALS. All piping, devices, and appliances for wastewater treatment and holding devices, appurtenances, and systems shall be of approved materials in accordance with ch. SPS 384.

(3) GENERAL. Any deleterious waste material ~~which~~ that is discharged into a plumbing system shall be directed to a wastewater treatment or holding device. The wastewater treatment or holding device shall be capable of separating, diluting, or neutralizing the deleterious waste material to a degree that the wastewater is no longer deleterious. Wastewater treatment or holding devices that retain any waste materials shall

be designed and installed to facilitate periodic removal or treatment, or both.

~~(a) *Treatment for reuse.* 1. Except as limited in subd. 2., graywater, storm water, clear water, blackwater and other wastewaters as approved by the department may be reused in conformance with s. SPS 382.70.~~

2. Except as provided in subd. 3., wastewater discharged from water closets or urinals ~~shall~~ may not be reused for drinking water.

3. All treatment works permitted by the department of natural resources, or a POWTS ~~which~~ that includes an in situ soil dispersal or treatment component may treat wastewater discharged from water closets or urinals for reuse.

(b) *Deleterious waste materials.* For the purpose of this subsection, deleterious waste materials include any waste material, other than that from dwelling units, ~~which~~ that may do any of the following:

1. Congeal, coagulate, or accumulate in drains and sewers, thereby~~,~~ creating stoppages or retarding the discharge flow~~;~~,

2. Retard or interfere with municipal sewage treatment processes~~;~~,

3. Pass through a treatment process and pollute the watercourse receiving the treatment effluent~~;~~,

4. Create explosive, flammable, noxious, toxic, or other hazardous mixtures of materials~~; or~~,

5. Damage, destroy, or deteriorate sewers or piping materials or structures.

Note: See ch. ATCP 93 as to flammable, combustible, and hazardous liquids.

(c) *Private systems.* The special or industrial wastes from any plumbing system shall be treated, held, or dispersed in compliance with the rules of the state agency having jurisdiction. The treatment, holding, or dispersal system shall be installed so as not to endanger any water supply ~~which~~ that is or may be used or ~~which~~ that may create a nuisance, unsanitary conditions, or water pollution.

(d) *Velocity control.* Interceptors, catch basins, and other similar devices shall be designed, sized, and installed so that flow rates shall be developed and maintained in a manner that solid and floating materials of a harmful, hazardous, or deleterious nature will be collected in the interceptor for disposal.

(e) *Maintenance.* All devices installed for the purpose of intercepting, separating, collecting, holding, or treating harmful, hazardous, or deleterious materials in liquid or liquid-borne wastes shall be operated and cleaned of intercepted or collected materials or of any residual from treatment at such intervals ~~which~~ that may be required to prevent their passage through the interceptor. Grease interceptors shall be maintained on a cycle not to exceed 90 days or per manufacturer's instructions.

(f) *Service reassembly.* Any fixed orifice, vent, or trap of an interceptor, catch basin, or other similar device shall remain intact and ~~shall~~ may not be removed or tampered with except for cleaning purposes. After service, all parts of the interceptor, collector, or treatment device, such as baffles, weirs, orifice plates, channels, vents, traps, tops, and fastening bolts or screws shall be replaced in proper working position.

(g) *Location.* 1. Wastewater holding devices, interceptors, catch basins, and other similar devices shall be accessible for service, maintenance, repair, and inspection.

a. No wastewater holding device, interceptor, catch basin, or similar device may be surrounded or covered as to render it inaccessible for service or inspection.

b. No wastewater holding device, interceptor, catch basin, or similar device may have its top located more than 6 feet above the surrounding floor.

c. Enough space shall be provided to enable the removal of any interior parts of the wastewater holding device, interceptor, catch basin, or similar device.

d. At least 18 inches of clear space shall be provided above the top of the wastewater holding device, interceptor, catch basin, or similar device.

2. An exterior wastewater holding device, interceptor, catch basin, or similar device shall not be located within 5 feet of a building or any portion of a building or swimming pool; 10 feet of water service; 2 feet of a lot line, and 10 feet of a clearwater cistern.

3. An exterior wastewater holding device, interceptor, catch basin, or similar device shall not be located within 10 feet of the high-water mark of a lake, stream, pond, or flowage.

Note: The department of natural resources under chs. NR 811 and 812 may require additional setbacks. See ch. SPS 382 Appendix for further explanatory material.

4. Anchoring system components. An exterior subsurface treatment tank holding component, or reservoir to be installed in an area subject to saturated conditions, shall be installed so as to prevent flotation of the tank or component.

(h) *Disposition of retained materials.* Deleterious waste materials retained by a wastewater holding device, interceptor, catch basin, or similar device ~~shall~~ may not be introduced into any drain, sewer, or natural body of water without approval of the state agency having jurisdiction.

(4) GARAGE FLOOR AREA WASTEWATER. (a) *Garages for public buildings and facilities.* 1. Where a drain will be installed to receive the wastewater from floor areas of public buildings and facilities on which self-propelled land, air, or water vehicles can be driven, the wastewater shall discharge using one of the following methods:

a. In areas where vehicles will be serviced, the wastewater shall discharge through a garage catch basin or oil interceptor connected to a municipal sewer or holding tank approved to receive industrial wastewater.

b. In areas where vehicles will be driven or stored, the wastewater shall discharge through a floor drain equipped with a solid bottom sediment bucket, garage catch basin, or oil interceptor.

2. Garage catch basins design shall conform to all of the following:

a. The holding area of the catch basin shall be watertight.

b. The catch basin shall have a minimum inside diameter of 36 inches.

c. The minimum depth of the basin shall be 24 inches measured from the lowest portion of the trap on the outlet of the basin.

d. The outlet of the basin shall be at least 4 inches in diameter and trapped with a water seal of at least 6 inches and constructed on the interior or exterior of the basin. Where an external trap is provided, the trap shall be within 36 inches of the basin.

e. Except as provided in subd. 5., the water line in the basin shall be at least 2 inches below all horizontal drains discharging into the basin. Where an external trap is provided, the measurement point on the horizontal drain shall be upstream of the trap.

f. The basin shall be provided with a cover at least 23 inches square or 23 inches in diameter.

g. Gravity drains from fixtures serving garage floor areas located on different floors from the basin may discharge into the basin if the drain stack carrying the wastewater is located at a distance equal to at least 20 times the inside diameter of the horizontal piping upstream of the basin.

h. Catch basins with solid covers shall be vented in accordance with sub. (8) (c).

3. Drains with traps may connect to the garage catch basin under all of the following conditions:

a. The trap shall be a minimum of 3"inches in diameter.

b. Except as provided in subd. 3. c., the developed length from all trap outlets to the basin ~~shall~~ may not exceed the distance as specified in Table 382.31-1.

c. Where the maximum distance exceeds that as specified in Table 382.31-1, the trap shall be vented in accordance with s. SPS 382.31 (3) and the connection to the basin shall form a 6-inch trap seal. The trap seal may be constructed on either the interior or exterior of the basin, but within 36"inches of the basin.

4. Drains without traps may discharge into a garage catch basin under all of the following conditions:

a. The fixture drain shall have a minimum 4-inch inside diameter.

b. The fixture drain shall be piped with a 6-inch water seal constructed either on the interior or exterior of the basin.

c. An exterior trap shall be constructed within 36"inches of the basin.

d. The developed length of the fixture drain ~~shall~~ may not exceed the distance equal to 24 times the diameter of the fixture drain.

e. Fixture drains shall individually discharge into a garage catch basin.

5. Pressurized drains from garage floor areas discharging to a garage catch basin shall conform to all of the following conditions:

a. The pressurized drain piping shall terminate inside the basin with a 6-inch submerged inlet. The termination shall be at least 12"inches above the floor of the basin.

b. The pressurized equipment, devices and piping shall be designed and installed to produce a maximum velocity of 2 feet per second at the point of connection to the basin.

Note: Plans for garage floor discharge-holding tanks may require plan approval by the department of natural resources.

(b) *Garages for one- and 2-family dwellings.* 1. Floor drains serving garages for one- and 2-family dwellings shall be provided with a removable solid bottom sediment basket.

Note: See ch. SPS 382 Appendix for further explanatory material.

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 catch basins serving garages for one- and 2-family dwellings shall be 18 inches.

(c) *Grates for garage catch basins, floor drains and trenches.* A garage catch basin, floor drain, and trench drain shall be provided with an approved, removable cast iron or steel grate of a thickness and strength for the anticipated loads. The grate shall have an available inlet area equal to at least the outlet drain for the catch basin, floor drain or trench drain.

Note: Residential exclusion see s. SPS 325.01 (4) (c).

1. A garage catch basin, floor drain, and trench drain shall be provided with an approved, removable grate of sufficient strength for the anticipated loads. The grate shall have an available inlet area equal to at least the outlet drain for the catch basin, floor drain or trench drain. [same as (c)?]

2. A trap may be omitted for a catch basin, floor drain serving a garage for a one− and two−family dwellings that discharges to the ground surface.

(5) ~~GREASE AND OIL~~FATS, OILS, AND GREASE (FOG) 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 grease and oil treatment in accordance with this subsection.

Note: See SPS 381.03 (93m) for definition of FOG.

(b) *General.* 1. 'Public sewers.' All new, altered, or remodeled plumbing systems which discharge to public sewers shall be provided with one or more 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. 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, a sanitizing compartment of a sink or a rinse compartment of a sink, may bypass the interceptor or interceptors.

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

d. The 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.~~ e. 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 private onsite wastewater treatment component tank or tanks which conform to par. (c). The required capacity of a grease interceptor shall be added to the required septic tank capacity as specified in ch. SPS 383.

~~c.~~f. 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 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 grease.

(c) *Exterior grease interceptors.* ~~Exterior~~ New exterior grease ~~interceptors~~ interceptor installations shall receive the entire greasy waste discharge from kitchens or food processing areas. All exterior interceptors shall be designed and constructed in accordance with this paragraph, so as to constitute an individual structure.

1. 'Design.' a. The liquid depth of the interceptor shall not be less than 42" inches nor more than an average of 72" inches.

b. A rectangular interceptor tank shall have a minimum width of 36" inches and a minimum length of 72" inches. The longest dimension of the tank shall be parallel to the direction of waste flow.

c. A horizontal-cylindrical interceptor tank shall have a minimum inside diameter of 52" inches and a minimum length

of 72" inches. The longest dimension of the tank shall be parallel to the direction of waste flow.

d. Vertical-cylindrical interceptor tanks shall have a minimum inside diameter of 72" inches.

e. Each prefabricated interceptor tank shall be clearly marked to indicate liquid capacity and the name and address or registered trademark of the manufacturer. The markings shall be impressed into or embossed onto the outside wall of the tank immediately above the outlet opening. Each site-constructed concrete tank shall be clearly marked at the outlet opening to indicate the liquid capacity. The marking shall be impressed into or embossed onto the outside wall of the tank immediately above the outlet opening.

f. The inlet and outlet openings of interceptor tanks or tank compartments shall be provided with, open-end sanitary tee fittings or baffles, so designed and constructed as to distribute the flow and retain the grease in the tank or tank compartments. The sanitary tee fittings or baffles shall extend at least 6" inches above the liquid level. At least 2" inches of clear space shall be provided above the top of the sanitary tee fittings or baffles. The sanitary tee fitting or baffle at the inlet opening shall extend below the liquid level of the tank a distance equal to 1/3 one-third of the total liquid depth. The sanitary tee fitting or baffle at the outlet opening shall extend below the liquid level of the tank a distance equal to 2/3 two-thirds of the total liquid depth. The waterline in the interceptor shall be at least 2" inches below the horizontal drain discharging to the interceptor.

g. An exterior grease interceptor shall have at least two compartments. Each compartment of an interceptor tank shall be provided with at least one manhole opening located over either the inlet or outlet opening. Additional manhole openings shall be provided such that no interior compartment wall of a tank is more than 4 feet from the edge of the manhole opening. The distance between manhole openings serving the same compartment shall not exceed 8 feet. Manhole openings shall be not less than 23" inches in the least dimension. Manholes shall terminate at or above ground surface and be of approved materials. Steel tanks shall have a minimum 2"-inch collar for the manhole extensions permanently welded to the tank. The manhole extension on fiberglass tanks shall be of the same material as the tank and an integral part of the tank. The collar shall have a minimum height of 2" inches.

h. Manhole risers for interceptor tanks shall be provided with a substantial, fitted, watertight cover of concrete, steel, cast iron, or other approved material. Manhole covers shall terminate at or above grade and shall have an approved locking device.

i. A minimum 4 × 6-inch permanent label shall be affixed to the manhole cover, identifying the interceptor tank with the words GREASE INTERCEPTOR. Where the tank acts as the septic tank and grease interceptor the label shall identify it as such. The wording used on the warning label shall be approved by the department, as part of the materials approval for the tank under ch. SPS 384.

j. An inlet or outlet opening which does not have a manhole opening as specified in subd. 1. g. shall be provided with an airtight inspection opening located over the inlet or outlet. The inspection opening shall be at least 4" inches in diameter. The inspection opening shall terminate at or above grade.

Note: See ch. SPS 382 Appendix for further explanatory material.

2. 'Capacity and sizing.' The minimum liquid capacity of a grease interceptor shall be determined in accordance with the provisions of this subdivision, except no grease interceptor may have a capacity of less than 1000 gallons if the interceptor is to discharge to a private onsite wastewater treatment system or less than 750 gallons if the interceptor is to discharge to a municipal sewer system and treatment facility.

a. The minimum capacity of a grease interceptor serving a restaurant with seating shall be equal to C, where

$$C=S\times H\times A$$

where, S = Number of seats, with each drive-in car service space counting as 3 three seats and each drive-up service window counting as 60 seats.

H = Hours per day that meals are served, at least 6 six hours but not more than 12 hours.

A = Appliance factor:

0.75 for a kitchen with no dishwashing machine and no food waste grinder.

1.0 for a kitchen with either a dishwashing machine or a food waste grinder.

1.25 for a kitchen with both a dishwashing machine and a food waste grinder.

b. The minimum capacity of a grease interceptor serving a dining hall, hospital, nursing home, school kitchen, church kitchen, or a kitchen for carryout or delivery service shall be equal to C, where:

$$C=\frac{M\times G\times H}{2\times P}$$

where, M = Meals served per day.

G = 3 Three gallons per meal served.

H = Hours per day that meals are served, at least 6 six hours but not more than 12 hours.

P = Meal periods per day; 1, 2 or 3.

c. The minimum capacity of a grease interceptor as determined in subd. 2. a. or b. may be halved for establishments with all paper service, but may not be less than 1000 gallons if the interceptor is to discharge to a private sewage system or less than 750 gallons if the interceptor is to discharge to a municipal sewer system and treatment facility.

3. 'Installation.' a. Grease interceptor tanks may not be located within 5 feet of a building or any portion of the building or swimming pool; 10 feet of a water service; 2 feet of a lot line; 10 feet of a cistern or 10 feet of a reservoir or high--water mark of a lake, stream, pond or flowage.

Note: The department of natural resources under chs. NR 811 and 812 may require additional setbacks. See ch. SPS 382 Appendix for further explanatory material.

b. Where a grease interceptor tank is installed in groundwater, the tank shall be adequately anchored.

c. Grease interceptor tanks shall be installed on a bedding of at least 3"inches in depth. The bedding material shall be sand, gravel, granite, limerock, or other noncorrosive materials of a size that all will pass through a 3/4"inch sieve.

d. The backfill material for steel and fiberglass grease interceptor tanks shall be as specified in subd. 3. c. for bedding and shall be tamped into place. The backfill material for concrete grease interceptor tanks shall be soil material, of a size that will pass through a 4--inch screen and shall be tamped into place.

e. All joints on concrete risers and manhole covers for a grease interceptor shall be tongue and groove or shiplap type and sealed watertight using neat cement, mortar, or bituminous compound. All joints on steel risers for a grease interceptor shall be welded or flanged and bolted and be watertight. All steel manhole extensions from a grease interceptor shall be bituminous coated inside and outside. All methods of attaching fiberglass risers for a grease interceptor shall be watertight and approved by the department.

Note: See ch. SPS 382 Appendix A-382.30 (11) (d) for material reprinted from s. NR 812.08. Section NR 812.08 may have additional setback requirements to wells.

(d) *Interior grease interceptors.* 1. 'Flow rating.' An interior grease interceptor shall be capable of accommodating a flow of at least 15 gallons per minute, but not less than the manufacturer's specifications.

2. 'Flow rate related to connected capacity.' Three-fourths of the total holding capacity in gallons of all fixtures and devices discharging to an interior grease interceptor, shall not exceed the value of the maximum flow rate which the interceptor can accommodate.

3. 'Grease holding capacity as related to flow rate.' The grease holding capacity in pounds shall not be less than double the value of the maximum flow rate which the interceptor can accommodate.

4. 'Flow controls.' Where required by the manufacturer, devices which control the rate of flow through an interior grease intercept shall be installed.

a. The flow control devices shall be accessible for inspection, service, and cleaning.

b. Flow controls shall be installed in the drain branch leading to each fixture and shall be so rated that the combined flow from all combinations of discharge will not develop either sufficient static or velocity head so the established flow rate of the interceptor can be exceeded.

Note: See ch. SPS 382 Appendix for further explanatory material.

5. 'Flow control vents.' Orifice type flow controls for an interior grease interceptor shall be vented in accordance with s. SPS 382.31.

6. 'Prohibited locations and types.' No water-cooled grease interceptor may be installed. No grease interceptor may be located where the surrounding temperatures, under operating conditions, are less than 40º F.

7. A maximum of 12 inches of horizontal inlet pipe may be submerged.

8. For calculating greasy waste for a wok, the following formula may be used:

$$\frac{\text{Diameter} \times .7854 \times \text{Depth} \times .65 \times .75}{231}$$

(e) *Prohibited treatment.* The introduction of grease or fat emulsifiers into a grease interceptor shall be prohibited.

(6) AUTOMATIC CAR WASHES. The wastes of floor drains and drain inlets of automatic car washes shall discharge through an approved car wash interceptor.

(a) *Design.* Except as provided in subds. 1. and 2. and par. (b), car wash interceptors shall be constructed and installed in accordance with sub. (4) (a) 2.

1. The interceptor's outlet shall be submerged to form a trap with a water seal of at least 15" inches.

2. The bottom of the trap's water seal shall be at least 30" inches above the bottom of the interceptor.

(b) *Capacity.* The minimum liquid capacity of the interceptor shall be based on the maximum flow rate of water through the interceptor in gallons per minute.

1. Between the waterline and the bottom of the trap seal of the outlet, the interceptor shall have a capacity value equal to at least ~~5~~ five times the maximum flow rate.

2. Below the bottom of the trap seal of the outlet, the interceptor shall have a capacity value equal to at least 15 times the maximum flow rate.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Hand-held car washing wands.* The wastes of floor drains and drain inlets serving ~~2~~ two or more hand-held car washing wands shall discharge through an approved car wash interceptor. The wastes of one hand-held car washing wand may discharge to a garage catch basin.

(7) COMMERCIAL LAUNDRIES. Wastes from gravity dump-type clothes washing equipment shall be discharged through an approved laundry interceptor in accordance with this subsection.

(a) *Screening apparatus.* A laundry interceptor shall be equipped with a wire basket or other device which will prevent the passage of solids, 1/2" inch or larger in diameter, string, buttons, and other detrimental materials into the drain system.

(b) *Trench type interceptors.* A floor receptor, trench, or trough as specified in s. SPS 382.33 (9) (c) 3., may serve as a laundry interceptor, if no oils or quantities of sand are discharged into it.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *In-line interceptor.* 1. In-line interceptors shall have a minimum inside diameter or horizontal dimension of 24" inches.

2. An in-line interceptor shall be provided with an air-tight cover.

3. An in-line interceptor shall be provided with a vent.

a. The vent shall extend from above the flow line to a vent terminal in accordance with s. SPS 382.31 (16) or shall be connected to the venting system serving the sanitary drain system.

b. The diameter of the vent shall be at least one-half of the diameter of the interceptor's outlet, but not less than 2" inches.

4. The outlet for an in-line interceptor shall be at least 4" inches in diameter. The outlet shall be submerged to form a trap with a water seal of at least 12" inches. The bottom of the trap's water seal shall be at least 12" inches above the bottom of the interceptor.

5. The waterline in an in-line interceptor shall be at least 2" inches below the bottom of the inlet opening for the interceptor.

(8) OIL AND FLAMMABLE LIQUIDS. Oily and flammable wastewater that discharges to a building sewer shall be intercepted or treated by a means acceptable to the department.

(a) *Site-constructed interceptors.* Site-constructed interceptors shall be designed in accordance with the requirements in sub. (4) (a) 2.

(b) *Prefabricated oil interceptors and separators.* Prefabricated oil interceptors and separators shall be manufactured with adequate capacity for the anticipated load.

(c) *Venting.* Oil and flammable interceptors and separators shall be so designed to prevent the accumulation of explosive gases.

1. A covered interceptor or separator shall be provided with an individual vent of at least 3 inches in diameter. The vent shall extend from the top of the interceptor or separator or as high as possible, from the side of the interceptor or separator to a point at least 12 feet above grade.

2. The drain pipe to the interceptor or separator shall be provided with a fresh air inlet connected within 2 feet of the inlet of the interceptor or separator. The fresh air inlet shall terminate at least one foot above grade, but not less than 6 feet below the terminating elevation of the vent serving the interceptor or separator. The fresh air inlet shall be at least 3 inches in diameter.

Note: See ch. SPS 382 Appendix for further explanatory material.

(9) BOTTLING ESTABLISHMENTS. Wastes containing glass of bottling establishments shall be discharged through an interceptor.

(10) DAIRY PRODUCT PROCESSING PLANTS. Dairy wastes from dairy product processing plants shall be discharged through an interceptor.

(11) MEAT PROCESSING PLANTS AND SLAUGHTERHOUSES. The wastes from meat processing areas, slaughtering rooms, and meat dressing rooms shall be discharged through an approved interceptor to prevent the discharge of feathers, entrails, blood, and other materials.

(12) SAND INTERCEPTORS. Sand interceptors and other similar interceptors for heavy solids shall be so designed and located as to be accessible for cleaning. The outlet for the interceptor shall be submerged to form a trap with a water seal of at least 12~~"~~ inches.

(13) PLASTER AND HEAVY SOLIDS TRAP TYPE INTERCEPTORS. Plaster sinks shall be provided with plaster and heavy solids trap type interceptors.

(a) The interceptor shall be installed as the fixture trap.

(b) The drain piping between the sink and the interceptor ~~shall~~ may not exceed a length of 36~~"~~ inches.

Note: See ch. SPS 382 Appendix for further explanatory material.

(14) CHEMICAL WASTE PIPING SYSTEMS. All chemical wastes having a pH level of less than 5.5 or more than 10.0 shall discharge to a holding tank for proper disposal or to a drain system in accordance with this subsection.

(a) *Chemical dilution and neutralizing basins.* 1. All chemical wastes discharging into a drain system shall be diluted, neutralized, or treated to a pH level of 5.5 to 10.0 by passing through an approved dilution or neutralizing basin before discharging to a building sewer.

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 382.34.

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.

3. Where a sufficient supply of diluting water cannot be provided to a dilution or neutralizing basin, the basin shall be filled with marble or limestone chips of not less than one inch nor more than 3~~"~~ inches in diameter to the level of the basin's outlet.

4. Either the inlet or outlet of a dilution or neutralizing basin shall be submerged to form a trap with a water seal of at least 4~~"~~ inches.

Table 382.34
Minimum Capacities for Dilution and Neutralizing Basins

Maximum Number of Sinks	Minimum Retention Capacity in Gallons
1	5
4	15
8	30
16	55
25	100
40	150
60	200
75	250
100	350
150	500

(b) *Vents.* Vents for chemical waste systems shall be sized and installed in accordance with all of the following:

1. Dilution and neutralizing basins with submerged inlets shall have a sanitary vent connected to the basin and a chemical waste vent connected to the inlet pipe. The pitch and the developed length of the drain between the submerged basin inlet and the chemical waste vent shall be in accordance with Table 382.31-1.

2. Dilution and neutralizing basins with submerged outlets shall have a chemical waste vent connected to the basin and a sanitary vent connected to the outlet pipe. The pitch and the developed length of the drain between the submerged basin outlet and the sanitary vent shall be in accordance with Table 382.31-1.

Note: See ch. SPS 382 Appendix for further explanatory material.

3. The vents for a chemical waste basin shall be sized based on the number of drainage fixture units discharging into the basin and installed in accordance with s. SPS 382.31.

(15) SPECIAL WASTEWATER OR MIXED WASTEWATER TREATMENT OR CONTAINMENT DEVICES. Mixed wastewater treatment and containment devices, decontamination tanks or other special wastewater treatment devices shall discharge to a dispersal or treatment system in accordance with this section or as approved by the department.

Note: A sanitary permit may be required. See ch. SPS 383 for requirements relating to containment tank installation with no valved discharge.

(a) *Installation.* 1. Exterior containment devices or treatment systems for mixed wastewater, decontamination tanks, and other special wastewater treatment devices ~~shall~~ may not be located within any of the following:

a. Within 5 feet of a building or any portion of the building or swimming pool~~;~~.

b. Within 10 feet of a water service~~.~~ ~~;~~

c. Within 2 feet of a lot line~~;~~.

d. Within 10 feet of a clearwater cistern~~.~~ ~~or~~

e. Within 10 feet of the high~~-~~water mark of a lake, stream, pond, or flowage.

Note: The department of natural resources under chs. NR 811 and 812 may require additional setbacks. See ch. SPS 382 Appendix for further explanatory material.

2. ~~Exterior containment~~ Containment devices or treatment systems for mixed wastewater, decontamination tanks, or other special wastewater treatment devices shall be constructed in accordance with s. SPS 384.25 or as approved by the department.

(b) *Vents.* Vents for mixed wastewater, decontamination tanks, and other special wastewater treatment systems shall be sized and installed in accordance with s. SPS 382.31.

(c) *Alarm system.* Containment devices or treatment systems for mixed wastewater, decontamination tanks, and other special wastewater treatment devices shall be equipped with an alarm.

(d) *Sampling provision.* Containment devices or treatment systems for mixed wastewater, decontamination tanks, and other

special wastewater treatment devices shall be equipped to allow the collection of a representative sample.

1. Where a containment tank has an outlet that is connected to a drain system, the outlet shall include a means to contain the wastewater from entering the drain system until proven to be safe for discharge.

(e) *Pump requirements.* 1. A pump or discharge line ~~serving~~ shall serve a containment tank for servicing purposes and shall comply with all of the following:

a. A pipe serving as the discharge line shall be of an acceptable type in accordance with ch. SPS 384.

b. A discharge line shall terminate with a service port consisting of a quick disconnect fitting with a removable plug.

c. The service port of a discharge line shall terminate at least 2 feet above final grade.

d. The service port of a discharge line shall be identified as such with a permanent sign with lettering at least 1/2 inch in height.

e. The service port of a discharge line shall be secured to a permanent support that is capable of withstanding the loads and forces placed on the port.

f. A discharge line shall be at least 3 inches in diameter.

2. Where a lift station is employed for servicing a containment tank, the pump discharge line shall conform with subd. 1., except as provided in subd. 2. a. and b.

a. A discharge line from the lift station shall be at least 2 inches in diameter.

b. The lift station pump shall be activated by means of a keyed-switch at the service port.

(f) *Sizing.* The volume of the mixed wastewater treatment or containment device shall be based on anticipated use.

(16) WATER REUSE SYSTEMS. (a) *Treatment for reuse.* 1. Except as limited in subd. 2., graywater, storm water, clear water, blackwater, and other wastewaters as approved by the department may be reused in conformance with s. SPS 382.70.

2. Except as provided in subd. 3., wastewater discharged from water closets or urinals may not be reused for drinking water.

3. All treatment works permitted by the department of natural resources, or a POWTS which includes an in situ soil dispersal or treatment component may treat wastewater discharged from water closets or urinals for reuse.

(b) [*Need title.*] Water reuse treatment shall produce a water quality conforming to s. SPS 382.70.

1. Periodic maintenance shall be performed by qualified individuals.

a. Records shall be kept on dates of cleaning, replacement of components or parts, and when the system was shut down and reason for shut down.

b. The department shall be provided access to the water treatment system and records upon request.

(c) *Materials.*1. Water distribution material shall comply with ss. SPS 384.30(4)(e) and (5).

2. Drain and vent piping shall comply with s. SPS 384.30(2).

3. Treatment and holding tanks shall comply with s. SPS 384.25.

4. Water treatment components shall have department approval or conform to an accepted standard.

5. Components shall be properly labeled as to the manufacturer and model number.

(d) *Installations.* (a) 1. Water reuse systems may not supply water to a potable water supply system.

2. A potable water supply connected to a reuse water system shall be protected by a high hazard cross connection control device, assembly or method.

3. A backwater valve shall be installed where the discharge from a reuse component is connected to a sewer.

Note: For water reuse, refer to the appropriate requirements in ss. SPS 382.30, 382.36, 382.40, 382.41, 382.70, and this section.

(17) WATER TREATMENT. (a) *Water softeners.* 1. Ion exchange water softeners used primarily for water hardness reduction, that during regeneration discharge a brine solution, shall be of a demand-initiated regeneration type equipped with a water meter or a sensor unless a wastewater treatment system downstream of the water softener specifically documents the reduction of chlorides. (Not created. Renumbered from 382.40 (8) (j))

2. Water softeners sizing criteria shall be based on s. SPS 382.40 (6) and the manufacturer's specifications.

3. A bypass shall be provided to serve a water softener.

4. Water softeners shall meet the requirements of ch. SPS 384.

(b) *Reverse osmosis.* 1. Reverse osmosis water treatment systems shall be equipped with an automatic shutoff when the storage system is at capacity.

2. The connection of the drain shall be as specified in s. SPS 382.33.

3. Point of use systems supply connections shall conform to s. SPS 382.40(7)(h).

4. A bypass is prohibited on a reverse osmosis system used for patient care.

(c) *Disinfection.* 1. Chlorine, Chloramine. Continuous. The maximum residual disinfection level goals (MRDLGs) shall [?] in accordance with ss. SPS 382.22, NR809.561, or NR809.80.

a. The maximum residual disinfectant concentration may not exceed 4.0 mg/L.

b. The system shall be designed and installed to achieve the minimum inactivation rate ("CT" value).

c. The maximum contaminant level of byproducts must not exceed 0.080 Trihalomethanes (TTHM) and 0.60 Haloacetic Acids (HAA5).

2. Each potable water system using chlorine disinfection shall be automatically and continuously disinfected by means of disinfectant and feeding equipment.

3. Disinfectant and filter aid feeding shall be conducted as specified in the following methods:

a. Liquid chemicals shall be fed into water circulation piping by means of a positive displacement feeder either at full strength or diluted with potable water.

b. If a chemical that forms a residue is used, a two-tank system shall be used. One tank shall be used for mixing the solution and settling the precipitate. The clear liquid shall be decanted or siphoned into the second tank for distribution.

4. Feeders shall comply with all of the following:

a. All disinfectant feeders shall be installed according to the manufacturer's directions and used only with the disinfectant recommended by the manufacturer.

b. Feeders shall be automatic, easily adjustable, capable of providing the required chemical residuals, equipped with flow control valves upstream and downstream from the feeder, easily disassembled for cleaning and maintenance, durable, and capable of accurate feeding.

c. Feeders shall be properly vented and incorporate anti-siphon safeguards to prevent disinfectant feeding in the event of the failure of recirculation equipment.

d. Feeder pumps shall be electrically connected to the recirculation pump control circuit and have a separate disconnect switch.

e. Feeders systems such as pump, tanks, piping, or tubing materials, shall be suitable for use in a potable water supply and shall be third party certified or approved by the department.

f. Feeder systems shall be located to disinfect the entire hot water system per s. SPS 382.50.

5. Disinfectant shall comply with the following:

a. The disinfectant must comply with NSF/ANSI 60.

b. The disinfectant has an effective residual that can be measured easily and accurately by an approved field test procedure.

c. The disinfectant is compatible for use with other chemicals normally used in the water treatment or is clearly identified as having a use limitation.

d. The disinfectant does not impart toxic properties to the water when used according to the manufacturer's directions.

e. The disinfectant does not create an undue safety hazard when handled, stored, or used according to the manufacturer's directions.

6. All chemicals used in the operation and bulk storage tanks containing the chemicals shall be conspicuously labeled with all of the following information:

a. The name of the product.

b. The manufacturer's name and address.

c. The active ingredients.

e. The directions for use.

f. The hazardous ingredient warning.

g. The U.S. environmental protection agency registration number.

7. UV water treatment devices shall conform to Class A criteria under ANSI/NSF 55.

a. The capacity of the UV system shall comply with sizing criteria listed in s. SPS 382.40.

b. The water system downstream of the UV disinfection system shall be disinfected prior and immediately before activation.

c. Multiple parallel UV treatment systems may be installed to provide disinfection of the water systems. Single component failure can be expected. If a single UV treatment system is installed, a bypass may be installed.

d. This device must be installed with a 254 nm wavelength narrow band UV monitor. The monitor shall energize or deenergize the solenoid to stop the flow of water at a minimum UV dosage of 40,000 microwatt-seconds per square centimeter (40 millijoules) at a wavelength of 254 nm.

e. This device shall be installed with automatic fixed flow rate control that prevent flow above the manufacturer's maximum rated flow over the operating pressure range as specified by the manufacturer.

f. A solenoid valve shall be installed on this device.

g. The water supply shall meet the manufacturer's specifications.

(d) *Water quality monitoring.* 1. Chlorine, chloramine. Per ss. SPS 382.22 and NR809.565, a daily sample shall be taken at the nearest and the furthest point of water use from the injection location and tested for free chlorine residual.

a. A potable water disinfection system that has a properly functioning electronic monitoring device installed to control disinfectant residual shall be manually tested at least once a day for disinfectant residual and pH with an approved test kit or managed by a continuous monitoring system in compliance with a water management plan approved by the department.

b. Quarterly testing for disinfection by-products (DBP) shall be performed.

c. A test kit of a type approved by the department shall be maintained for testing the water pH, the disinfectant residual, and the DBP.

d. Water samples should be taken during the day for accurate disinfection levels. A record shall be kept of the daily water quality test data. The data shall include the location of the sample, date and time the sample was taken, and result of the sample.

d. The identification of the person taking the sample.

2. Ultraviolet (UV). Total coliform monitoring will be used to evaluate UV treatment effectiveness. The department, on a case specific basis, may require other parameters. The water quality monitoring shall comply with all of the following:

a. A water quality test shall be taken at startup, two weeks after startup, once annually, and after disinfection and flushing per s. SPS 382.40(8)(i).

b. A separate sample should be taken upstream and downstream of the device.

c. A record shall be kept on the water quality test results.

3. Water system owners should routinely monitor effectiveness of the water treatment system.

(e) *Additives.* 1. The introduction of chemical additives to the potable water distribution systems of restaurants, schools, and health care and related facilities shall be monitored by the water operator-in-charge.

2. The operator-in-charge shall make an observation of the disinfection component operation and the disinfection/chemical residual in the storage tank and record the data on a weekly basis.

(f) *Records.* 1. A record shall be kept on dates of cleaning, disinfection procedures, replacement of components or parts, when the device was shut down, and the reason for the shutdown.

2. Representatives of the department and the department of health services shall be provided access to the water treatment system and records upon request.

(g) *Implode protection.* [check title] A vacuum relief valve shall be installed in each water treatment appliance installed more than 20 feet above any faucet or outlet served by the appliance when measured from the bottom of the tank.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; am. (4) (a) 2. b., (5) (b) 2. intro., c. and (c) 4. b., Register, August, 1991, No. 428, eff. 9-1-91; am. (4) (a) 2. c. and g., 3. a., (5) (b) 1. f. and j., 3. a., (c) 1., (8) (a) 2. c., r. and recr. (5) (a) 1., r. (5) (b) 3. e. and (c) (intro.), renum. (5) (b) 3. f. to be (5) (b) 3. e., Register, February, 1994, No. 458, eff. 3-1-94; am. (5) (a) 2. (intro.), 3. and (b) 2. (intro.), Register, April, 2000, No. 532, eff. 7-1-00; am. (4) (b) 2., Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: r. and recr. (1), (2), (4) (a), (8) (a) and (b), am. (3) (intro.), (6) (a) (intro.) and (14) (b) (intro.), renum. (3) (a) to (f) to be (3) (b) to (g), cr. (3) (a) and (14) (b) 3., r. (3) (g), Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. (4) (a) 2. b. and (5) (b) 1. g. Register January 2004 No. 577, eff. 2-1-04; CR 08-055: am. (3) (a) 1., r. and recr. (4) (b) 2. and (14) (a) 2., renum. (5) (intro.) to (d) to be (5) (a) to (e) and am. (5) (a) and (b), cr. (5) (c) 7. Register February 2009 No. 638, eff. 3-1-08; CR 10-064: am. (title), (1), (2), (3) (intro.), (a), (c), (e), (g), (h), (4) (a) 2. f., (5) (c) 3. a., r. (6) (d), cr. (15) Register December 2010 No. 660, eff. 1-1-11; correction in (15) (e) 2. (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2010 No. 660; correction in (2), (3) (a) 1., (4) (a) 3. b., c., (5) (b) 2. b., (c) 1. i., (d) 5., (7) (b), (c) 3. a., (14) (a) 2. a., (b) 1., 2., 3., (15) (a) 2., (b), (e) 1. a. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.35 **Cleanouts. (1)** SCOPE. The provisions of this section set forth the requirements for the installation of cleanouts and manholes for all drain piping.

(2) MATERIALS. Cleanouts shall be constructed of approved materials in accordance with ch. SPS 384.

(3) WHERE REQUIRED. (a) *Horizontal drains.* ~~All~~ Except as permitted under s. SPS 382.36 (14)(d)2., 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 ch. SPS 382 Appendix for further explanatory material.

(b) *Sanitary building sewers.* 1. Sanitary building sewers 6" inches or less in diameter shall be provided with cleanouts or manholes ~~such that~~ in accordance with the following:

a. Cleanouts are located not more than 100 feet apart~~;~~.

b. Manholes are located not more than 400 feet apart~~;~~.

c. The distance from a cleanout to a manhole located upstream is not more than 200 feet~~; or~~.

d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.

2. Sanitary building sewers 8" inches or larger in diameter shall be provided with manholes at any of the following:

a. ~~Every~~At every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet~~;~~.

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

c. ~~Intervals~~At intervals of not more than 400 feet.

(c) *Storm building sewers.* 1. Storm building sewers 10" inches or less in diameter shall be provided with cleanouts or manholes ~~such~~ that conform with the following:

a. Cleanouts are located not more than 100 feet apart~~;~~.

b. Manholes are located not more than 400 feet apart~~;~~.

c. The distance from a cleanout to a manhole located upstream is not more than 200 feet~~; or~~.

d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.

2. Storm building sewers 12" inches or larger in diameter shall be provided with manholes or storm drain inlets with an inside diameter of at least 36" inches at any of the following:

a. ~~Every~~ At horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet~~;~~.

b. ~~Every~~ At every change in pipe diameter where both connections are 12 inches or larger~~; and~~.

c. ~~Intervals~~ At intervals of not more than 400 feet.

(d) *Private interceptor main sewers.* 1. Private interceptor main sewers 5" inches or less in diameter shall be provided with an exterior cleanout or manhole upstream of the point of the creation of the private interceptor main sewer and ~~such that~~ conform with all of the following:

a. Cleanouts ~~are~~may not be located ~~not~~ more than 100 feet apart~~;~~

b. Manholes ~~are~~ may not be located ~~not~~ more than 400 feet apart~~;~~

c. The distance from a cleanout to a manhole located upstream ~~is~~ may not be more than 200 feet~~; or~~.

d. The distance from a manhole to a cleanout located upstream ~~is~~ may not be more than 300 feet.

2. Private interceptor main sewers 6" inches or larger in diameter shall be provided with a manhole at all of the following:

a. ~~The~~ At the most upstream point of the private interceptor main sewer~~.~~;

b. ~~Every~~ At every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet~~.~~,

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

d. ~~Intervals~~ At intervals of not more than 400 feet.

(e) *Junction of building drain and building sewer.* A cleanout shall be provided near the junction of a building drain and a building sewer.

1. The cleanout shall be located within 5 feet of where the building drain and the building sewer connect. The cleanout may be located either inside or outside the building.

2. A cleanout in a drain stack may serve as the cleanout at the junction of the building drain and building sewer, if the stack is within 5 feet of where the building drain and building sewer connect.

(f) *Stacks.* Where a cleanout is provided in a drain stack, the cleanout shall be located ~~28 to 60 inches~~ above the lowest floor penetrated by the stack.

(g) *Branches.* 1. Except as provided in subd. 2., cleanouts shall be provided in connection with batteries of fixtures at such points that all parts of the branch drain may be accessible for cleaning or removal of stoppages. For the purposes of this requirement, removable fixture traps may serve as cleanout openings.

2. A cleanout ~~shall~~ may not be required for a branch drain when the fixtures on the branch include one floor outlet fixture and any fixtures discharging into an accompanying wet vent.

(h) *Greasy wastes.* Drain pipes carrying greasy wastes shall be provided with cleanouts located not more than 40 feet apart and at all changes in direction of more than 45°.

(i) *Double sanitary tees.* A cleanout shall be provided immediately above or below a double sanitary tee drain fitting which is installed in a vertical drain pipe of less than 3" inches in diameter, unless a stack cleanout is provided in accordance with par. (f).

(j) *Traps and fixture drains.* 1. All traps shall be constructed or installed so that stoppages may be removed from the traps and the horizontal portions of fixture drains.

2. If a trap is not accessible for removal or does not contain a removable dip, a cleanout or a removable inlet shall be installed to enable cleaning of the trap passageway and the horizontal portions of the fixture drain.

(k) *Conductors.* Where a cleanout is provided in a conductor, the cleanout shall be located 28 to 60" inches above the lowest floor penetrated by the conductor.

(L) *Sampling manholes.* Municipalities or sanitary sewage districts by ordinance or rule may require the installation of sampling manholes for periodic sewage monitoring.

Note: The installation of sampling manholes may be needed for the monitoring of industrial wastes under chs. NR 200 to 299. See ch. SPS 382 Appendix for further explanatory material.

(m) *Catch basins and interceptors.* The fixture drain from all interceptors designed in accordance with s. SPS 382.34 (4) (a) 2. shall be provided with an accessible cleanout located outside of the basin and not more than 15 inches from the weir of the trap.

(4) DIRECTION OF FLOW. Every cleanout shall be installed so as to open in the direction of the waste flow or at a right angle thereto.

(5) ACCESSIBILITY. Cleanout plugs ~~shall~~ may not be covered with cement, plaster, or any other similar permanent finishing material.

(a) *Underground piping.* Cleanouts installed in underground drain piping shall be extended vertically to or above the finish grade.

1. All interior and exterior cleanouts where the vertical distance between the horizontal drain pipe being served and the top of the cleanout opening exceeds 18 inches in length, shall connect to the drain piping through a fitting as specified in Table 382.30–4.

2. A cleanout located outside of a building shall be provided with a frost sleeve.

a. The frost sleeve shall be of a material approved for building sewers in accordance with s. SPS 384.30 (2) (c).

b. Where a cleanout is located in an area subject to vehicular traffic the top of the frost sleeve shall terminate in a concrete pad at least 4" inches thick and extending at least 9" inches from the sleeve on all sides, sloping away from the sleeve.

c. The bottom of the frost sleeve shall terminate 6" to 12" inches above the top of the drain piping or at least 6" inches below the predicted frost depth in accordance with s. SPS 382.30 Table 382.30-6.

d. The frost sleeve shall have a removable watertight top of sufficient thickness and strength to sustain the weight of anticipated traffic.

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) *Concealed piping.* Cleanout access for drain piping located in concealed spaces shall be provided by either extending the cleanout to at least the surface of a wall or floor or by providing access panels of a sufficient size to permit removal of the cleanout plug and proper cleaning of the pipe.

(6) CLEANOUT SIZE. (a) Cleanouts and cleanout extensions shall be sized in accordance with Table 382.35 except as provided in (6) (b).

(b) The replacement or repair of a non-public 6-inch sanitary sewer may be served by an existing 4-inch extension within the building.

Table 382.35
Cleanout Sizes

Diameter of Pipe Served by Cleanout (inches)	Minimum Diameter of Cleanout Extension (inches)	Minimum Diameter of Cleanout Opening (inches)
1 1/4	1 1/4	1 1/4
1 1/2	1 1/2	1 1/4
2	1 1/2	1 1/2
3	3	2 1/2
4	4	3 1/2
5	5	4
6	6	5
8 and larger	6	6

(7) PROHIBITED USE OF CLEANOUT OPENINGS. Cleanout openings ~~shall~~ may not be used for the installation of fixtures or floor drains, except where another cleanout of equal access and capacity is provided.

(8) MANHOLES. (a) *Diameter.* The minimum diameter of manholes shall be 42" inches. A manhole shall have a minimum access opening of 24" inches.

(b) *Materials.* Manholes shall be constructed of approved materials in accordance with ch. SPS 384 and in accordance with the design provisions of s. NR 110.13.

Note: The provisions of s. NR 110.13 regarding the manhole's flow channel, watertightness, and drop pipe indicate the following specifications:

—The flow channel through manholes shall be made to conform to the shape and slope of the sewer.

—Solid watertight manhole covers are to be used wherever the manhole tops may be flooded by street runoff or high water. Where groundwater conditions are unfavorable, manholes of brick or block shall be waterproofed on the exterior with plastic coatings supplemented by a bituminous waterproof coating or other approved coatings. Inlet and outlet pipes are to be joined to the manhole with a gasketed flexible watertight connection or any watertight connection arrangement that allows differential settlement of the pipe and manhole wall to take place.

—An outside drop pipe is to be provided for a sewer entering a manhole where the invert elevation of the entering sewer is 2 feet or more above the spring line of the outgoing sewer. The entire drop connection shall be encased in the concrete. Inside drop connection may be approved on a case-by-case basis.

Note: See ch. SPS 382 Appendix for further explanatory material.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; am. (3) (i), r. and recr. (3) (j), Register, May, 1988, No. 389, eff. 6-1-88; am. (5) (a) 2. a., Register, August, 1991, No. 428, eff. 9-1-91; r. and recr. (3) (j) and (5) (a) 2. c., Register, February, 1994, No. 458, eff. 3-1-94; CR 02-002: am. (3) (a) and (d) 1. (intro.), renum. (3) (g) to be (3) (g) 1. and am., cr. (3) (g) 2. and (m), r. and recr. (5) (a) 1. Register April 2003 No. 568, eff. 5-1-03; CR 08-055: r. and recr. (3) (a), am. (3) (b) 2. a., b., (c) 2. a., b., (d) 2. b., c., (5) (a) 1. and Table 82.35 Register February 2009 No. 638, eff. 3-1-09; correction in (2), (3) (m), (5) (a) 1., 2. a., c., (6), (8) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.36 **Stormwater and clearwater plumbing systems. (1)** SCOPE. The provisions of this section set forth the requirements for the design, installation, and maintenance of piping, conveyance, venting, detention, and treatment of stormwater and clearwater in plumbing systems.

Note: Refer to ch. NR 151 for stormwater management requirements.

(2) MATERIALS. All stormwater and clearwater plumbing systems shall be constructed of approved materials in accordance with s. SPS 384.30 (3).

(3) DESIGN OF STORMWATER PLUMBING SYSTEMS. (a) Plumbing systems upstream of detention shall be designed, at a minimum, based on the 10-year, 24-hour storm event.

(b) Plumbing detention systems and plumbing systems located downstream of detention shall be designed based on anticipated flows and volumes.

(c) Stormwater and clearwater infiltration systems shall comply with s. SPS 382.365.

Note: For a listing of best management practices (BMPs) refer to ch. SPS 382 Appendix A-382.36 (3)-1.

Note: Where local discharge requirements are more stringent, stormwater plumbing systems may provide detention and treatment to comply with the local stormwater management plan.

(d) 1. Each compartment of a detention tank used for the reduction of total suspended solids shall be provided with a manhole located over at least one inlet and at least one outlet. For compartments with multiple inlets, a manhole or a cleanout shall be provided shall be provided at additional inlets and outlets.

2. The distance between manhole openings serving the same compartment shall not exceed 50 feet.

3. A manhole opening shall be not less than 23 inches in the least dimension.

4. A manhole shall terminate at or above ground surface and be of approved materials. Steel tanks shall have a minimum inch collar for the manhole extensions permanently welded to the tank. The manhole extension on fiberglass tanks shall be of the same material as the tank and an integral part of the tank. The collar shall have a minimum height of 2 inches.

5. Manhole risers shall be provided with a substantial, fitted, watertight cover of concrete, steel, cast iron, or other approved material.

6. Manhole covers shall terminate at or above grade and shall have an approved locking device.

7. Tanks shall conform to provisions of s. SPS 384.25.

(4) DISCHARGE, DISPERSAL, CLEARWATER REUSE OR STORMWATER USE. (a) *Discharge points.* The discharge points for stormwater and clearwater shall be as specified in Table 382.38-1.

(b) *Segregation of wastewater.* 1. Except as provided in subd. 2., stormwater or clearwater piping may not connect to a sanitary drain system.

2. Where a combined sanitary-storm sewer system is available, stormwater, clearwater, and sanitary wastewater may be combined in the building sewer.

3. Stormwater gravity drains ~~shall~~ may not be combined with clearwater drains prior to discharging to the storm building drain except where approved by the department.

4. Exterior subsoil drain connections to the storm sewer shall be above the top of the storm sewer or by use of a backwater valve.

Note: See also Table SPS 382.38-1 which limits clearwater discharges to sanitary sewer at 50 gpd.

Note: For the use of stormwater or reuse of clearwater, refer to the appropriate requirements in ss. SPS 382.30, 382.34, 382.40, 382.41, 382.70 and this section.

Note: For further explanatory material regarding the rational method, other methods and runoff co-efficients, see ch. SPS 382 Appendix A-382.36 (4).

(5) INPUT CALCULATIONS. (a) *Peak flow.* The peak flow of stormwater influent to a plumbing system shall be calculated using any of the following methods:

1. 'Area method.' For sizing of conveyance piping, when calculating stormwater peak flow based on the tributary area, the area in square feet shall be divided by the following applicable divisors:

a. For roofs the divisor is 26 square feet/gpm.

b. For paved or graveled ground surfaces the divisor is 32.5 square feet/gpm.

c. For lawns, parks and similar land surfaces the divisor is 104 square feet/gpm.

Note: For example, 10,000 square feet of roof area/26 square feet/gpm = 385 gpm or 0.85 cubic feet/second.

2. 'Rational method.' For calculating peak flow, the intensity shall be determined using the time of concentration for the tributary area.

Note: For the equation procedure for runoff coefficients for use with the rational method, refer to ch. SPS 382 Appendix A-382.36 (5)-1.

3. 'Engineering analysis method.' An engineering analysis, acceptable to the department, shall be based on the peak flow calculated in accordance with sub. (3) (a).

Note: A model that calculates peak flow such as SWMM, TR-20, TR-55, P8 or an equivalent methodology may be used.

(b) *Volume.* The volume of stormwater influent to a plumbing system shall be based on an engineering design acceptable to the department and a minimum of a two-year, 24-hour storm event and designed so that no property damage occurs at 100-year, 24-hour storm event with a Type II distribution.

Note: For runoff coefficients and use of other methods or models, refer to ch. SPS 382 Appendix A-382.36 (5)-2 and A-382.36 (5)-3.

Note: The intensity of rainfall varies considerably during a storm as well as geographic regions. To represent various regions of the United States, the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) developed four synthetic 24-hour rainfall distribution types from available National Weather Service (NWS) duration-frequency data (Hershfield 1961; Frederick et al., 1977) or local storm data. Type IA is the least intense and type II is the most intense short duration rainfall. Types I and IA represent the Pacific maritime climate with wet winters and dry summers. Type III represents Gulf of Mexico and Atlantic coastal areas where tropical storms bring large 24-hour rainfall amounts. Type II represents the rest of the country, including Wisconsin. For more information, see the USDA-NRCS webpage: http://www.nrcs.usda.gov/.

(c) *Additional inputs to stormwater systems.* Additional inputs to stormwater systems shall be estimated based on anticipated flows and volumes.

(6) CONVEYANCE AND DETENTION SYSTEMS. (a) *Design.* The design of stormwater and clearwater conveyance systems shall conform to all of the following:

1. Horizontal stormwater conveyance piping shall be sized using either of the following:

a. An engineering analysis, based on full flow capacity, acceptable to the department.

b. Tables 382.36-1 to 382.36-5 based on pipe type, diameter, and pitch.

2. a. A vertical conductor for stormwater may not be smaller than the largest horizontal branch discharging into the conductor.

b. Vertical conductors shall be sized in accordance with Tables 382.36-1 and 382.36-3 or by an engineering analysis acceptable to the department.

Note: For the use of Baird's equation, refer to ch. SPS 382 Appendix A-382.36 (6)-1.

3. Clearwater conveyance systems shall be sized in accordance with s. SPS 382.30 (3) and (4).

4. Underground, gravity-flow storm building sewers shall have a minimum 3-inch inside diameter.

Note: A culvert is considered plumbing only if a component of a designed storm water management system is within a property.

(b) *Velocity in stormwater conveyance system piping.* The pitch of stormwater conveyance system piping shall be designed to create a minimum velocity of one foot per second when flowing full.

(c) *Fittings and connections.* 1. Except as provided in subd. 2., fittings and connections for stormwater and clearwater conveyance systems shall comply with s. SPS 382.30 (8) and (9).

2. The minimum radius for the first 90° –degree fitting located downstream of a roof drain shall comply with the horizontal to vertical requirements in Table 382.30-4.

(d) *Stack offsets.* Stack offsets for piping of a clearwater conveyance system piping shall comply with s. SPS 382.30 (6).

(e) *Pitch of clearwater gravity conveyance system piping.* 1. The minimum pitch of gravity conveyance system piping having a 2-inch inside diameter or less shall be 1/8 inch per foot.

2. The minimum pitch of clearwater gravity conveyance system piping having at least a 3-inch inside diameter or more shall be 1/16 inch per foot.

(f) *Branch connections near base of stack.* Branch drains from interior clearwater inlets may not connect downstream from the base fitting or fittings of a drain stack within a distance equal to 20 pipe diameters of the building drain.

(g) *Detention systems.* 1. The storage volume of a dry detention system shall be designed and installed with a drain time of 72 hours after a storm event.

2. Paved surfaces or parking lots serving as detention areas shall be limited to a design depth of 6 inches, unless otherwise limited by local ordinance.

3. By design, ground surface ponding shall drain within 24 hours after a storm event.

Table 382.36-1
Maximum Capacity of Stormwater Conveyance Piping for PVC, ASTM D1785, D2665, F891 and ABS, ASTM D1527, D2661, F628

Nominal Pipe Size (in inches)	Maximum Capacities in gallons per minute (gpm)					
	Pitch of Piping Per Foot					
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)	Vertical
3	30	40	60	80	110	89
4	60	80	120	160	230	183
5	110	150	210	300	420	334
6	170	240	340	480	690	545
8	360	510	710	1,010	1,430	1,133
10	660	930	1,310	1,850	2,620	2,079
12	1,050	1,480	2,090	2,960	4,180	3,316
14	1,350	1,900	2,690	3,810	5,390	4,271
16	1,920	2,720	3,840	5,440	7,690	6,097
18	2,630	3,720	5,270	7,440	10,520	8,348
20	3,520	4,970	7,030	9,956	14,060	11,155
24	5,750	8,140	11,490	16,260	22,990	18,244

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36-2
Maximum Capacity of Stormwater Horizontal Conveyance Piping for PVC, ASTM D3034

Nominal Pipe Size (in inches)	Maximum Capacities in gallons per minute (gpm)				
	Pitch of Piping Per Foot				
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)
4	60	80	110	160	220
6	160	230	320	450	640
8	350	490	700	990	1,400
10	630	900	1,270	1,790	2,540
12	1,010	1,430	2,020	2,850	4,040
15	1,730	2,450	3,460	4,900	6,920

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36-3
Maximum Capacity of Stormwater Conveyance Piping for Cast Iron, ASTM A74 and ASTM A888

Nominal Pipe Size (in inches)	Maximum Capacities in Gallons Per Minute (gpm)					
	Pitch of Piping Per Foot					
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)	Vertical
3	20	30	40	60	80	80
4	50	60	90	130	180	173
5	80	120	170	230	330	315
6	140	190	270	380	540	516
8	290	420	590	830	1,170	1,118
10	540	770	1,090	1,540	2,170	2,068
12	870	1,230	1,740	2,490	3,490	3,318
15	1,630	2,310	3,270	4,620	6,530	6,217

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36-4
Maximum Capacity of Stormwater Horizontal Conveyance Piping for Concrete, ASTM C76 and ASTM C14

Nominal Pipe Size (in inches)	Maximum Capacities in gallons per minute (gpm)				
	Pitch of Piping Per Foot				
	1/32 inch (0.26% slope)	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)
4	40	60	90	120	170
6	130	180	260	360	510
8	280	390	550	780	1,110
10	500	710	1,000	1,420	2,010
12	820	1,150	1,630	2,310	3,260
15	1,480	2,090	2,960	4,180	5,910
18	2,400	3,400	4,810	6,800	9,620
21	3,630	5,130	7,250	10,260	14,500
24	5,180	7,320	10,350	14,640	20,710
27	7,090	10,020	14,170	20,050	28,350
30	9,390	13,270	18,770	26,550	37,550
33	12,100	17,120	24,210	34,230	48,410
36	15,260	21,590	30,530	43,170	61,060
39	18,900	26,720	37,790	53,440	75,580
42	23,020	32,560	46,050	65,120	92,100
48	32,870	46,490	65,740	92,980	131,490
54	45,000	63,640	90,010	127,290	180,010
60	59,600	84,290	119,200	168,580	238,410

Note: To convert to cubic feet per second (cfs) divide gpm by 448.8.

Table 382.36-5
Maximum Capacity Of Stormwater Horizontal Conveyance Piping For Elliptical Reinforced Concrete Pipe

Pipe Diameters in inches (circular pipe equivalent)	Maximum Capacities in gallons per minute (gpm)			
	Pitch of Piping Per Foot			
	1/16 inch (0.52% slope)	1/8 inch (1.04% slope)	¼ inch (2.08% slope)	½ inch (4.16% slope)
14 X 23 (18)	3,300	4,675	6,700	9,500
19 X 30 (24)	7,200	10,060	14,700	21,000
24 X 38 (30)	13,250	18,740	26,500	37,475
29 X 45 (36)	21,545	30,475	43,095	60,940
34 X 53 (42)	32,500	45,965	65,000	91,925
38 X 60 (48)	46,405	65,625	92,800	131,245
43 X 68 (54)	63,525	89,840	127,050	179,800
48 X 76 (60)	84,135	118,985	168,270	237,965

(7) OTHER DESIGN REQUIREMENTS. (a) *Subsoil drains.* 1. A subsoil drain discharging to a plumbing system shall discharge into an area drain, manhole or storm sewer, trapped receptor, or a sump with a pump.

2. Where a ~~foundation~~ subsoil drain is subject to backwater, the drain shall be protected by a backwater valve or a sump with a pump.

(b) *Backwater valve.* All backwater valves shall be accessible for maintenance.

(c) *Sewer location.* 1. No storm building sewer or private interceptor main storm sewer may pass through or under a building to serve another building, unless one of the following conditions is met:

a. The storm building sewer or private interceptor main storm sewer serves farm buildings or farm houses, or both, that are located on one property.

b. Where a storm building sewer or private interceptor main storm sewer serves buildings that are located on one property, a document that indicates the piping and distribution arrangement

for the property and buildings is recorded with the register of deeds no later than 90 days after installation.

2. The location of storm building drains and building sewers shall comply with ss. SPS 382.30 (11) (d) and 382.40 (8) (b) 7.

(d) *Installation requirements.* 1. The connection of a stormwater leader discharging to a storm building sewer shall be made above the finished grade.

Note: For more information regarding joints and connections, refer to s. SPS 384.40.

1m. If indirect connection and at finished grade, a removable strainer shall protect the inlet. The capacity of strainer shall be provided in accordance with s. SPS 382.36 (9) (b).

2. The elevation of a storm building drain shall comply with s. SPS 382.30 (11) (b) 1.

3. Interior inlets and drains subject to backflow or backwater shall be protected with a check valve or backwater valve.

4. Storm building drains and building sewers shall be installed to comply with s. SPS 382.30 (11) (e).

5. Storm building sewer connections to public sewers shall be in accordance with s. SPS 382.30 (11) (f).

6. Cleanouts for conveyance system piping shall be installed in accordance with s. SPS 382.35.

7. Storm building sewers that receive clearwater and that may be subject to freezing shall be installed in accordance with s. SPS 382.30 (11) (c) 2.

8. Storm building drains, clearwater building drains, and building storm sewers and appurtenances shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, or as otherwise permitted by the department of natural resources.

9. All underground stormwater storage tanks for water reuse shall be separated from sanitary sewers by a minimum of 8 feet.

10. a. A means to locate buried non-metallic storm building sewers and private interceptor main sewers that discharge to municipal mains shall be provided in accordance with the options under s. SPS 382.30 (11) (h), except as provided in subd. 10. b.

b. Tracer wire insulation color for non-metallic storm pipe shall be brown.

(8) SUMPS AND PUMPS. (a) *Sumps.* 1. 'General.' All storm building subdrains shall discharge into a sump, the contents of which shall be automatically lifted and discharged, dispersed, or used in accordance with sub. (4).

2. 'Construction and installation'. a. Except as provided in subd. 2. c. and d. and sub. (14) (b), an interior sump shall have a rim extending at least one inch above the floor immediately adjacent to the sump.

b. A sump shall have a removable cover of sufficient strength for anticipated loads.

c. Where a sump is installed in an exterior meter pit ~~or elevator pit~~, the rim may be level with the floor.

d. When a sump is provided with an airtight, solid cover.

3. 'Location'. All sumps installed for the purpose of receiving clearwater, groundwater, or stormwater shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, or as otherwise permitted by the department of natural resources.

Note: See ch. SPS 382 Appendix A-382.30 (11) (d) for material reprinted from s. NR 812.08.

4. 'Size'. a. Except as permitted under subd. 4. b. ~~or c.~~, the size of each sump shall be no smaller than 16 inches in diameter at the top, 14 inches in diameter at the bottom, and 22 inches in depth, but may not be smaller than the manufacturer's requirements to ensure sufficient pump run time.

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

~~c. 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.~~

5. 'Solid covered sumps'. A storm or clearwater sump with a solid cover shall be vented. The vent shall terminate a minimum of one inch above finished floor and sized as per SPS Table 382.31-4. In lieu of a separate vent, a sealed sump may incorporate a radon vent connected to the subsoil drain or sump cover.

(b) *Pumps.* 1. 'Size.' The pump shall be of a capacity appropriate for the anticipated use.

2. 'Discharge piping.' a. Where a pump discharges into a storm drain system, a check valve shall be installed.

b. The minimum diameter discharge piping shall be based on the design flow rate of the pump and a minimum velocity of one foot/second.

3. 'Title'. Clearwater wastewater may not discharge into a stormwater sump, except for one- and 2-family dwellings.

(9) INLET REQUIREMENTS. (a) *Interior clearwater drain inlets.* Interior clearwater drain inlets shall terminate at least one inch above the finished floor.

(b) *Exterior stormwater inlets.* 1. 'Construction.' a. All exterior stormwater inlets shall be constructed of material in accordance with s. SPS 384.30.

Note: For additional information on approved materials, refer to s. SPS 384.30 (3) (f).

b. All exterior stormwater inlets subject to vehicular traffic shall be set on a suitable base capable of sustaining the anticipated load.

2. 'Design'. All exterior stormwater inlets shall be designed for the anticipated flow.

Note: For manhole requirements, refer to s. SPS 382.35 (3).

3. '~~Inlet grates~~ Grates'. a. General. All inlets shall be provided with a well-fitted, removable grate of a thickness and strength to sustain the anticipated loads.

Note: Sections SPS 362.1101 to 362.1110 specify that for floor or ground surface inlets when placed within an identifiable accessible route, openings in the floor or ground surface shall be of a size that does not permit the passage of a ½-inch sphere. Also, it states that grates having elongated openings be placed so that the longest dimension is perpendicular to the dominant direction of travel.

b. Floor or ground surface inlets. Openings in the floor or ground surface shall be of a size that prohibits the entrapment of wheeled vehicles, wheelchairs, or pedestrians within the grate openings.

c. Grates on horizontal pipes. Grates shall be provided on horizontal inlets greater than 6 inches in diameter. The grates shall be placed so that the rods or bars are not more than 3 inches downstream of the inlet. Rods or bars shall be spaced so that the openings do not permit the passage of a 6-inch sphere.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Subsurface areas of 50 square feet or less.* Other than stairwells, all subsurface areas not exceeding 50 square feet and exposed to the weather, shall comply with one of the following:

1. Drain to foundation drains through a minimum 2-inch diameter pipe or a through a continuous layer of washed stone aggregate.

2. Drain to the storm building drain, storm subdrain or storm sewer through a minimum 3-inch diameter pipe.

(d) *Subsurface areas of more than 50 square feet and stairwells.* An area drain shall be provided in subsurface areas greater than 50 square feet and in all stairwells exposed to the weather. The area drain shall comply with all of the following:

1. Drain to the storm building drain, storm subdrain, or storm sewer.

2. The fixture drain shall have a minimum 3-inch inside diameter and may not discharge into a subsoil or foundation drain.

(10) ROOF DRAINS. (a) *General roofs.* Roof drains shall be equipped with strainers extending not less than 4 inches above the surface of the roof immediately adjacent to the roof drain. Strainers shall have an available inlet area above the roof of not less than 1.5 times the area of the conductor to which the drain connects.

(b) *Flat decks.* Roof drain strainers used on sun decks, open parking decks, and similar areas shall be of the flat surface type, shall be level with the deck and shall have an available inlet area of not less than 2 times the area of the conductor to which the drain connects.

(c) *Controlled flow roof drains.* When controlled flow roof drains are installed, the system shall be sized and installed in accordance with the requirements in this section.

1. The detention area shall drain down with 24 hours after the rainfall event.

2. The drains may not be connected to secondary roof drain systems or clearwater waste systems.

3. The system shall discharge in accordance with Table 382.38-1.

4. Controlled flow roof drains shall utilize the same drain as specified in the engineered system.

5. Secondary roof drain systems serving controlled flow roof drain systems shall be sized for the 100-year, 24-hour storm event, including all cascading loads from higher elevation overflows.

6. Roof structures served by controlled flow roof drain systems shall be engineered in accordance with IBC section 1611.3.

(d) *Siphonic roof drains.* When siphonic roof drain systems are installed, the system shall be sized and installed in accordance with the requirements in this section.

1. The detention area shall drain down within 24 hours after the rainfall event.

2. Siphonic roof drain systems may not be connected to conventional roof drain systems, secondary roof drain systems, controlled flow roof drainage, or clearwater waste systems.

3. The system shall discharge in accordance with Table 382.38-1.

4. Siphonic roof drain systems shall be engineered based on the required rainfall rate per s. SPS 382.36 (5) and utilizing a minimum 10-year, 24-hour rain event.

5. Siphonic roof drain systems shall utilize the same drain as the engineered system.

6. Secondary roof drain systems serving siphonic roof drain systems shall be sized for the 100-year, 24-hour storm event, including all cascading loads from higher elevation overflows.

7. Roof structures served by siphonic roof drain systems shall be engineered in accordance with IBC section 1611.3.

8. A siphon break shall be provided downstream of a siphonic roof drain system.

Note: See appendix for further explanatory material.

(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

(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 382.38–1.

(d) *Rain fall rate.* Secondary roof drain systems shall be sized for the 100-year, 24-hour storm event, including all cascading loads from higher elevation overflows.

(e) *Overflow drains.* Secondary overflow drains and overflow standpipes rim elevations may not exceed 5 inches in height above the adjacent roof elevation served by the primary roof drains.

(12) TRAPS AND VENTS. (a) *Traps.* 1. Traps are required for interior drain inlets receiving clearwater.

2. Except for exterior loading dock drains, traps are required for exterior drain inlets located within 10 feet of an air inlet, door, or openable window.

3. More than one drain inlet may discharge to the same trap.

4. A ~~foundation~~ subsoil drain that discharges by gravity to a storm sewer shall be trapped. The trap shall be provided with cleanouts.

(b) *Vents.* 1. A trap receiving clearwater shall be vented in accordance with s. SPS 382.31. Vent piping for a clearwater drain system may not be connected to a vent system serving a sanitary drain system or chemical waste system.

2. a. Vents serving a solid covered sump shall terminate a minimum of one inch above finished floor or in accordance with s. SPS 382.31 (16) except for subd. par (d) 2. c. In lieu of a separate vent, a sealed sump may incorporate a radon vent connected to the subsoil drain or sump cover.

b. Sump vents shall be sized as per Table 382.31-4.

(13) OPERATION AND MAINTENANCE. (a) *Plan.* An operation and maintenance plan shall be implemented for all stormwater plumbing systems for drainage areas of one or more acres that are installed on or after December 1, 2004.

(b) *Plan information.* An operation and maintenance plan as required in par. (a) shall include at least all of the following information, applicable to the system:

1c. Pre-construction runoff volume.

1g. Post-construction runoff.

1n. Infiltration volume.

1r. Detention volume.

1w. Accumulated solids or byproduct removal requirements.

2. Identification of safety hazards.

3. Cleaning and inspection schedule.

4. Inspection and maintenance checklist, including at least the following items:

a. Filters.

b. Disinfection units.

c. Sedimentation chambers.

d. Detention devices.

e. Infiltration systems.

5. Start up and shutdown procedures.

6. Vector control requirements.

7. A contingency plan in the event of system failure.

(c) *Plan location.* The operation and maintenance plan shall remain onsite and be available for inspection when requested by the department.

(d) *Record of maintenance.* When requested the owner shall make available for inspection all maintenance records to the department or agent for the life of the system.

(14) ~~ELEVATOR HOISTWAY DRAINS.~~ ELEVATORS. (a) *Discharge.* 1. ~~All drains~~ Drains serving elevator ~~pits~~ hoistways shall discharge ~~to the storm drain system~~ as specified in ~~s. SPS 382.36 (4)~~ Table 382.38-1. [renumbered from 382.33 (9) (f) 1., and amended.]

2. Drains serving elevator ~~pits shall~~ hoistways may not connect directly with the storm drain system by means of gravity flow piping. [renumbered from 382.33 (9) (f) 2., and amended.]

~~4.~~ 3. A drain serving an elevator pit that discharges to a sump shall have a submerged inlet constructed to maintain a minimum 6~~2~~ inch trap seal. [renumbered from 382.33 (9) (f) 4., amended.]

(b) *Sumps* ~~3~~ 1. A sump may not be ~~located~~ installed in an elevator machine room. [renumbered from 382.33 (9) (f) 3., and amended]

~~5~~2. A sump located in an elevator ~~pit~~ hoistway may only receive storm or clear water waste from the elevator ~~pit~~ hoistway or the elevator machine room, or both. [renumbered from 382.33 (9) (f) 5., and amended]

Note: See ch. SPS 382 Appendix for further explanatory material.

4. A sump shall have a removable cover of sufficient strength for anticipated loads.

(c) *Size.* Where required, the aggregate capacity for drainage from the hoistway shall be at least one of the following:

1. 30 gpm in a hoistway with one elevator.

2. 50 gpm in a hoistway with two or three elevators.

3. 80 gpm in a hoistway with four elevators.

(d) *Floor drains serving elevator door areas.* When installed, emergency floor drains intended solely to minimize the infiltration of water into an elevator hoistway, shall utilize the conditions of this par.

1. In lieu of individual traps, a single trap may serve multiple floor drains on a single floor.
2. Where multiple floor drains are served by one trap, an untrapped floor drain may serve the cleanout requirements under s. SPS 382.35(3)(a).
3. Discharge shall be as specified in Table 382.38-1.
4. Drain piping serving a single floor, or any portion thereof, shall be sized to accommodate the anticipated design discharge of the fire sprinkler heads that present the potential of introducing water into the elevator hoistway.
5. Where multiple floor levels are served by a single stack, it is permissible to size any portion of that stack to accommodate the anticipated design discharge of the fire sprinkler heads serving a minimum of two floors.
6. A drain stack in connection with only floor drains serving elevator door areas may utilize a combination drain and vent system under s. SPS 382.31(17)(a)3.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; r. and recr. (3) (a) and (b) 1., (c) 1. and (11) (a) 4., cr. (3) (c) 3., Register, May, 1988, No. 389, eff. 6-1-88; renum. (13) (a) and (b) to be (b) and (c) and am. (b) 1., cr. (3) (b) 3. and (13) (a), r. (3) (c) 3. and (13) (intro.), Register, August, 1991, No. 428, eff. 9-1-91; reprinted to correct error in (5) (e) 2., Register, October, 1991, No. 430**;** am. (3) (b) 1., (c) 1. a., (13) (b) 1. and (c), cr. (11) (a) 5., Register, February, 1994, No. 458, eff. 3-1-94; r. and recr. (11) (a) 2. and 5., Register, April, 1998, No. 508, eff. 5-1-98; renum. and am. (3) (b) 3. a. to be (3) (b) 3. and (3) (b) 3. b. to be (3) (b) 4., Register, April, 2000, No. 532, eff. 7-1-00; am. (3) (b) 3., (4) (a), (5) (a) and (6) (a), cr. (3) (b) 5. and Table 82.36-4a, Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: r. and recr. (3), (11) (a) 3., (13) (a) 2., (15) (a) and (b), am. (5) (e) (intro.), (10), (12), (14) and Table 82.36-4 Register April 2003 No. 568, eff. 5-1-03; CR 04-035: r. and recr. Register November 2004 No. 587, eff. 12-1-04; CR 07-069: cr. (7) (d) 10. Register February 2008 No. 626, eff. 3-1-08; CR 08-055: am. (4) (b) 3. and (8) (a) 4., r. and recr. (11) Register February 2009 No. 638, eff. 3-1-09; correction in (2), (3) (c), (4) (a), (6) (a) 1. b., 2. b., 3., (c) 1., 2., (d), (7) (c) 2., (d) 2., 4., 5., 6., 7., 10. a., (9) (b), (11), (c), (12) (b) 1., 2. b. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.365 **Stormwater and clearwater subsurface infiltration plumbing systems.** **(1)** SCOPE. The provisions of this section set forth the requirements for the design, installation, and maintenance of stormwater and clearwater subsurface infiltration plumbing systems serving building sites.

Note: The department of natural resources has registration requirements for class V injection wells. See ch. SPS 382 Appendix for further explanatory material.

(2) SITE AND SOIL EVALUATION. (a) *Site evaluation.* A site evaluation shall be conducted in accordance with the methods and standards as provided in s. SPS 385.40 (3) (a).

(b) *Soil evaluation.* 1. A soil evaluation shall be conducted in accordance with the methods and standards as provided in s. SPS 385.30 (1) (c).

2. Individuals qualified to conduct soil evaluation under this subsection shall be an individual that maintains either a registration as provided in s. SPS 305.33 or a license as provided in ch. GHSS 4.

(3) INFILTRATION SYSTEM DESIGN. (a) *Influent quality.* For stormwater and clearwater ~~infiltration~~ plumbing systems, the influent quality shall comply with the requirements in Table 382.70-1 for subsurface ~~infiltration and~~ irrigation.

1. Prior to infiltrating, pretreatment shall be performed for parking lot and new road construction.

(b) *In situ soil requirements.* 1. Except as provided in subd. 2., the minimum depth of suitable in situ soil for infiltration systems shall be as specified in Table 382.365-1 to separate the system from the highest groundwater elevation or bedrock. When groundwater mounding calculations affect the depth to seasonal groundwater, the depth of suitable soil shall be measured to the calculated elevation of mounded groundwater.

2. For roof runoff or where treatment has afforded an equivalent level of water quality, the depth of in situ soil shall be no less than one foot of materials finer than coarse sand.

Note: See ch. SPS 382 Appendix for representative water quality levels.

3. The installation of a stormwater infiltration system where engineered soil is incorporated in lieu of in situ soil shall comply with the following stipulations:

a. The engineered soil composition shall be engineered to meet the specifications listed in the Wisconsin Conservation Practice Standard 1004: Bioretention for Infiltration.

b. The engineered filtering layer shall be located above any limiting factor identified within the soil report.

c. The engineered soil may not be less than 24 inches in depth, or 18 inches in depth with supporting documentation.

Table 382.365-1
Depth of Suitable Soils by USDA Soil Texture and Percent Fines of the Infiltrative Surface

Soil Texture	Minimum 5 ft. of Suitable Soil Separation –and ≥10% but <20% Fines [a]		Minimum 3 ft. of Suitable Soil Separation –and ≥20% Fines [a]	
	Texture Suitability	Maximum Rock Fragment Content [b]	Texture Suitability	Maximum Rock Fragment Content [b]
Sands				
COS	NP [c]	--	NP	--
S	NP [c]	--	NP [c]	--
FS	NP [c]	--	NP [c]	--
VFS	X	NP [c] > 60%	X	NP [c] > 20%
Loamy sands				
LCOS	X	NP [c] > 0%	NP [c]	--
LS	X	NP [c] > 0%	NP [c]	--
LFS	X	NP [c] > 0%	NP [c]	--
LVFS	X	NP [c] > 82%	X	NP [c] > 63%
Sandy loams				
COSL	X	NP [c] > 56%	X	NP [c] > 13%
SL	X	NP [c] > 56%	X	NP [c] > 13%
FSL	X	NP [c] > 56%	X	NP [c] > 13%
VFSL	X	NP [c] > 74%	X	NP [c] > 47%
Loam (L)	X	NP [c] > 79%	X	NP [c] > 58%
Silt Loam (SIL)	X	NP [c] > 84%	X	NP [c] > 68%
Silt (SI)	X	NP [c] > 88%	X	NP [c] > 75%
Clay Loams				
SCL	X	NP [c] > 71%	X	NP [c] > 43%
SICL	X	NP [c] > 88%	X	NP [c] > 75%
CL	X	NP [c] > 81%	X	NP [c] > 63%
Clays				
SC	X	NP [c] > 78%	X	NP [c] > 56%
SIC	X	NP [c] > 88%	X	NP [c] > 75%
C	X	NP [c] > 82%	X	NP [c] > 63%

NP = Not permitted.

X = Suitable for use under the specified conditions.

[a] Fines are mineral particles passing a 200 mesh sieve (less than 0.075mm). Content is measured by weight.

[b] Rock fragments are unattached pieces of rock 2 mm in diameter or larger. Content is measured by volume.

[c] Permitted only where laboratory analysis provides evidence of percent fines required.

USDA Soil Texture Abbreviations:

COS = Coarse Sand
S = Sand
LCOS = Loamy Coarse Sand
LS = Loamy Sand
LFS = Loamy Fine Sand
LVFS = Loamy Very Fine Sand
COSL = Coarse Sandy Loam
SL = Sandy Loam
FSL = Fine Sandy Loam
VFSL = Very Fine Sandy Loam
L = Loam
SIL = Silt Loam
SI = Silt
SCL = Sandy Clay Loam
SICL = Silty Clay Loam
CL = Clay Loam
SC = Sandy Clay
SIC = Silty Clay
C = Clay

(c) *Hydraulic application rates.* The maximum hydraulic application rate for stormwater and clearwater subsurface infiltration plumbing systems shall be in accordance with one of the following methods.

1. The maximum hydraulic application rate shall be determined by soil analysis in accordance with sub. (2) (b) and Table 382.365-2.

2. The maximum hydraulic application rate shall be determined by field measurement using a nationally-accepted method and the correction factor as determined using Table

382.365-3. To determine the maximum hydraulic application rate, the measured infiltration rate at the infiltrative surface shall be divided by the correction factor as listed in Table 382.365-3.

Table 382.365-2
Design Infiltration Rates ~~For~~ for Soil Textures Receiving Stormwater

Soil Texture [a]	Design Infiltration Rate Without Measurement inches/hour [b]
Coarse sand or coarser	3.60
Loamy coarse sand	3.60
Sand	3.60
Loamy sand	1.63
Sandy loam	0.50
Loam	0.24
Silt loam	0.13
Sandy clay loam	0.11
Clay loam	0.03
Silty clay loam	0.04 [c]
Sandy clay	0.04
Silty clay	0.07
Clay	0.07

[a] Use sandy loam design infiltration rates for fine sand, loamy fine sand, very fine sand, and loamy fine sand soil textures.

[b] Infiltration rates represent the lowest value for each textural class presented; based on Rawls et al., 1998 [Use of Soil Texture, Bulk Density and Slope of Water Retention Curve to Predict Saturated Hydraulic Conductivity, ASAE, Vol. 41(2), pp. 983-988].

[c] Infiltration rate is an average, based on Rawls et al., 1982 (Estimation of Soil Water Properties, Transactions of the American Society of Agricultural Engineers Vol. 25, No. 5 pp. 1316 –1320 and 1328) and Clapp & Hornberger, 1978 (Empirical equations for some hydraulic properties. Water Resources Research 14:601-604).

Table 382.365-3
Total Correction Factors Divided ~~Into~~ into Measured Infiltration Rates

Ratio of Design Infiltration Rates [a]	Correction Factor
1	2.5
1.1 to 4.0	3.5
4.1 to 8.0	4.5
8.1 to 16.0	6.5
16.1 or greater	8.5

[a] Ratio is determined by dividing the design infiltration rate from Table 382.365-2 for the textural classification at the bottom of the infiltration device by the design infiltration rate from Table 382.365-3 for the textural classification of the least permeable soil horizon. The least permeable soil horizon used for the ratio should be within five feet of the bottom of the device or to the depth of the limiting layer.

(d) *Groundwater mounding.* Groundwater mounding consideration shall be included in the design of any stormwater and clearwater subsurface infiltration plumbing system that has a width that exceeds 15 feet and a depth to the estimated highest groundwater elevation.

Note: An acceptable model is provided by the USGS, webpage: http://water.usgs.gov/ogw/techniques.html.

(e) *Drain down time.* 1. Stormwater and clearwater subsurface infiltration plumbing systems shall be designed to drain within 72 hours after a storm event.

2. By design, ground surface ponding shall drain within 24 hours after a storm event.

(f) *Setbacks.* 1. Stormwater and clearwater subsurface infiltration plumbing systems shall be located as provided in Table 382.365-4, except for irrigation systems.

Table 382.365-4
Horizontal Setback Parameters by Physical Feature

Physical Feature	Setback Parameters in feet
Building	10
Holding tank, stormwater collection tank	10
POWTS dispersal component	5
POWTS holding or treatment component	10
Property line	5
Swimming pool, in ground	15

2. All stormwater and clearwater subsurface infiltration plumbing systems shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812 or as otherwise approved by the department of natural resources.

Note: See ch. SPS 382 Appendix A-382.30 (11) (d) for material reprinted from ss. NR 811.12 (5) (d) and 812.08. Section NR 811.12 (5) (d) or 812.08 may have additional setback requirements.

(4) INSTALLATION. (a) *Orientation.* Except for subsurface irrigation systems, all of the following shall apply:

1. The longest dimension of a stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil shall be oriented along the surface contour of the site location, unless otherwise approved by the department.

2. The infiltrative surface of a stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil and located below the surface of the original grade shall be level.

(b) *Other requirements.* 1. A stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil may not be installed if the soil is frozen at the infiltrative surface.

2. Snow cover shall be removed before excavating or installing a stormwater or clearwater system component consisting in part of in situ soil.

3. For a stormwater or clearwater subsurface infiltration plumbing system consisting in part of in situ soil, the soil moisture content shall be evaluated immediately prior to installation of the component. If the soil evaluation at the infiltrative surface results in the sample capable of being rolled into a ¼ –inch wire, the installation may not proceed.

Note: To accomplish a field test for soil wetness, a soil sample the size of one's palm may be rolled to form at least a ¼-inch wire.

4. All vessels and pipes of a stormwater or clearwater subsurface infiltration plumbing system shall be bedded in accordance with a product approval under s. SPS 384.10 or a plan approval under s. SPS 382.20.

(5) OPERATION AND MAINTENANCE. (a) *General.* Operation and maintenance shall be performed in accordance with the operation and maintenance plan submitted with the stormwater and clearwater subsurface infiltration plumbing system design and s. SPS 382.36 (13), where applicable.

(b) *Prohibited substance.* 1. Except as provided in subd. 2., no substance shall be discharged into a stormwater or clearwater subsurface infiltration plumbing system that results in exceeding the enforcement standards and preventive action limits specified in ch. NR 140 Tables 1 and 2 at a point of standards application, pursuant to s. 160.21 (2), Stats.

Note: For groundwater standard limits on various substances, refer to ch. NR 140 Table 1.

2. Pursuant to s. 160.19 (2) (a), Stats., the department has determined that it is not technically or economically feasible to require that a stormwater or clearwater subsurface infiltration plumbing system treat wastewater to comply with the preventive action limit for chloride specified in ch. NR 140 Table 2, as existed on June 1, 1998.

Note: Section 160.19 (2) (a), Stats., reads: "Each regulatory agency shall promulgate rules which define design and management practice criteria for facilities, activities and practices affecting groundwater which are designed, to the extent technically and economically feasible, to minimize the level of substances in groundwater and to maintain compliance by these facilities, activities and practices with preventive action limits, unless compliance with the preventive action limits is not technically and economically feasible."

3. Pursuant to s. 160.21 (2), Stats., the point of standards application relative to the performance of stormwater and clearwater subsurface infiltration plumbing systems is any of the following:

a. Any point of present groundwater use for potable water supply.

b. Any point beyond the boundary of the property on which the facility, practice, or activity is located.

(c) *Deleterious substance.* Substances deleterious to a stormwater or clearwater subsurface infiltration plumbing system shall be intercepted, diluted, or treated in accordance with s. SPS 382.34 prior to the substance discharging into a stormwater or clearwater infiltration system.

History: CR 04-035: cr. Register November 2004 No. 587, eff. 12-1-04; correction in (2) (a), (b) 1., 2., (3) (a), (b) 1., (c) 1., 2., (f) 1., (4) (b) 4., (5) (a), (c), Table 382.365-3 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.37 **Sanitation facilities and campgrounds.**

(1) COMPOSTING SYSTEMS. (a) Composting systems which employ water or other liquids as a transport medium for wastes shall conform with this subsection.

Note: Composting systems where water or other liquids are not employed as a transport medium are addressed under ch. SPS 391.

(b) The materials, design, construction, and performance of a composting system which employs water or other liquids as a transport medium for wastes shall conform to NSF Standard 41.

(c) All composting systems shall be listed by a testing agency acceptable to the department.

Note: For a listing of agencies acceptable to the department, see ch. SPS 382 Appendix A-384.11.

(d) 1. Components for the storage or treatment of wastes shall be continuously ventilated.

2. Ventilation ducts or vents for the composting system shall conform to s. SPS 382.31 (16).

(e) 1. The disposal of the end product from a composting system shall be in accordance with 40 CFR Part 503, Standards for the Use or Disposal of Sewage Sludge.

Note: EPA materials relating to EPA 503, including, "Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule", are available from the Office of Water Resource, US EPA, 401 M Street SW, Washington D.C. 20460.

2. The disposal of any liquid from a composting system shall be either to a publicly owned treatment works or a POWTS conforming to ch. SPS 383.

(f) The connection of potable water supplies to a composting system shall be protected in accordance with s. SPS 382.41.

(g) The drainage systems for the composting system shall conform to the applicable requirements of ss. SPS 382.30 to 382.36 and the manufacturer's specifications.

(2) SANITARY DUMP STATIONS. (a) Sanitary dump stations which are used to receive domestic wastes and domestic wastewater from the holding tanks of travel trailers, recreational vehicles or other similar mobile vehicles, and transfer containers shall conform with this subsection.

Note: See ch. SPS 382 Appendix A-382.37 (2) for further explanatory material.

(b) The drain receptor for a sanitary dump station shall be at least 4~~"~~ inches in diameter.

(c) 1. The drain receptor shall be provided with a self-closing cover.

2. The cover for the drain receptor shall be operable without touching the cover with one's hands.

(d) The drain receptor shall be surrounded by an impervious pad at least 6 feet in diameter. The pad shall ~~be~~ conform with all of the following:

1. ~~Pitched~~ The pad shall be pitched toward the drain receptor with a minimum slope of ¼~~"~~inch per foot~~; and~~.

2. ~~Of~~ The pad shall be of sufficient strength to sustain anticipated loads.

(e) The drain receptor shall be trapped in accordance with s. SPS 382.32.

(f) The drain receptor for a sanitary dump station that is installed within an enclosed structure shall be vented in accordance with s. SPS 382.31.

(g) A permanent supply of water shall be provided to wash down the drain receptor and pad. The water supply shall ~~be~~ conform with all of the following:

1. ~~Provided~~ The water supply shall be provided with cross connection control in accordance with s. SPS 382.41~~; and~~.

2. ~~Labeled~~ The water supply shall be labeled indicating that the supply is not for drinking purposes.

(h) 1. Aboveground drains shall be constructed of approved materials in accordance with s. SPS 384.30 (2) (a).

2. Aboveground water supply piping shall be constructed of approved materials in accordance with s. SPS 384.30 (4) (e).

(3) CAMPGROUNDS. (a) *Drain systems.* Sewers serving campgrounds shall comply with the provisions in s. SPS 382.30 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 pipe.

2. One campsite receptor shall be designed to serve no more than 4 recreational vehicles.

3. Where ~~2~~ two or more 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~~ may 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.

8. A camping unit may discharge wastewater into a transfer tank.

a. The connection to the transfer tank shall be made water tight.

b. The transfer tank shall be provided with a minimum 2-inch vent that is screened or turned downward.

(b) *Water supply systems.* Water supply systems serving campgrounds shall comply with the provisions in s. SPS 382.40 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. SPS 382.41. Wye connectors are prohibited.

3. A campsite water supply riser shall terminate no less than 18 inches above finished grade.

Note: See ch. SPS 382 Appendix for further explanatory material.

History: Cr. Register, April, 2000, No. 532, eff. 7-1-00; CR 02-002: cr. (2) (h) and (3) Register April 2003 No. 568, eff. 5-1-03; CR 08-055: am. (3) (b) 3. Register February 2009 No. 638, eff. 3-1-09; correction in (1) (d) 2., (e) 2., (f), (g), (2) (e), (f), (g) 1., (h) 1., 2., (3) (a) (intro.), (b) (intro.), 2. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.38 **Discharge points.** **(1)** PURPOSE. The purpose of this section is to establish allowable discharge points for wastewater discharging from plumbing systems.

4. The water connection to a camping unit may be plumbed direct if the fixtures comply with provisions of chs. SPS 382 and 384.

a. A camping unit may discharge into a transfer tank.

b. The transfer tank shall be provided with a minimum 2-inch vent that is screened or turned downward.

5. An indirect water connection may be made to a camping unit with approved cross connection control.

(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 plumbing systems shall be discharged as specified in Table 382.38-1.

(b) Wastewater from uses other than those listed in Table 382.38-1, shall be discharged as specified by the department on a site-specific basis.

Table 382.38 – 1
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]
1. Cross connection control device or assembly [see s. SPS 382.33 (9) (i)]	X	X		X[b, c,e]	X	
2. Domestic wastewater	X	X			X	
3. Condensate from high efficiency furnace or water heater	X	X			X	
4. Drinking fountain	X	X	X	X[b]	X	X
4m. Elevator door area drains	X	X	X	X	X	X
5. Elevator pit drain [see s. SPS 382.33 (9) (f)]			X	X[b]	X	X
6. Enclosed public parking levels	X	X		X[b]	X	X
7. Industrial wastewater[h]	X[f]	X			X	
8. Municipal well pump house floor drain and sink	X	X		X[b]	X	X
9. One- and 2-family garage floor area [see s. SPS 382.34 (4) (b)]	X	X		X[b]	X	
9m. Open public parking levels			X	X[b]	X	X
10. Residential living unit air conditioner condensate	X	X[g]	X[c]	X[b]	X	X
11. Storm water, groundwater, fire sprinkler test discharge and clear water	X	X[g]	X[c]	X[b]	X	X
12. Secondary roof drain systems				X[j]		
13. Swimming pool or wading pool — diatomaceous earth filter backwash	X	X			X	
14. Swimming pool or wading pool — drain wastewater	X	X[b]	X[b,c]	X[b,c]	X[b]	X
15. Swimming pool or wading pool — sand filter backwash	X	X[b]	X[b,c]	X[b,c]	X[b]	X
16. Water heater temperature and pressure relief valve [see s. SPS 382.40 (5)]	X	X	X	X[b]	X	X
17. Wastewater from water treatment device	X	X	X[c]	X[b,c]	X	X
18. Whirlpool backwash drain and wastewater	X	X	X[c]	X[b,c]	X	

19. Discharges not specifically listed above	Contact the department

[a] Allowed when the POWTS is designed to include designated wastewater.

[b] Unless prohibited by local municipality and when no nuisance is created.

[c] A discharge permit may be required by the department of natural resources.

[e] Allowed for exterior installation and when no sanitary sewer is in the building.

[f] Refer to the department of natural resources for discharge regulations.

[g] Fifty gallons per day.

[h] The department of natural resources may require WPDES permits for industrial discharges and may allow other options.

[i] Subsurface dispersal must comply with s. SPS 382.365.

[j] Discharge separate from the primary system and where observable.

History: CR 02-002: cr. Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. Table 82.38-1 line 15 Register January 2004 No. 577, eff. 2-1-04; CR 04-035: am. Table 82.38-1 Register November 2004 No. 587, eff. 12-1-04; CR 08-055: am. Table 82.38-1 Register February 2009 No. 638, eff. 3-1-09; correction in (3) (a), (b), Table 382.38-1 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter IV — Water Supply Systems

SPS 382.40 **Water supply systems. (1)** SCOPE. The provisions of this section set forth the requirements for the design and installation of water supply systems.

Note: Chapter NR 811 governs the design and construction of community water systems or waterworks.

(2) MATERIALS. All water supply systems shall be constructed of approved materials in accordance with ch. SPS 384.

(3) GENERAL. (a) *Water quality.* 1. Every outlet providing water shall be provided with water of the quality as specified under s. SPS 382.70 (3) for the intended use.

2. Nonpotable water may be supplied to water treatment devices or systems designed to treat water for compliance with Table 382.70-1.

(b) *Hot water required.* Except as provided in subds. 1. and 2., hot water shall be provided to all plumbing fixtures, appliances, and equipment used for personal washing, culinary purposes, ~~or~~ laundering, or a sink used for building maintenance in a public building.

1. Tempered water. a. Tempered water or hot water shall be provided to lavatories, wash fountains, and shower heads ~~which~~ that are not located in dwelling units or living units.

b. Tempered water supplied to serve multiple lavatories, wash fountains, and shower heads shall be provided by means of temperature-actuated mixing valves that comply with ASSE 1017.

2. Lavatories located in park shelters and bath houses ~~which~~ that are not open during the period from November 15 to March 15 and ~~which~~ are not places of employment, ~~shall~~ may not be required to be provided with hot water.

3. Lavatories located in waysides ~~which~~ that are not places of employment ~~shall~~ may not be required to be provided with hot water.

Note: The exception of providing hot water under subds. 1. to 3. does not supersede the requirements of other state agencies for providing hot water.

(c) *Protection.* 1. Pursuant to s. NR 811.07, unless approved in writing by the department of natural resources, the interconnection of ~~2~~ two or more water supply systems~~,~~; one system served by a public supply source and the other system served by another supply source, is prohibited, ~~unless approved in writing by the department of natural resources~~.

2. A water supply system shall be designed and installed in accordance with s. SPS 382.41 and maintained to prevent nonpotable liquids, solids, or gases from being introduced into the potable water supply system through cross connections.

3. a. Except as provided in subd. 3. b., when a connection between ~~2~~ two water supply systems exists~~,~~; one system having a higher degree of hazard than the other system as specified in s. SPS 382.41, the water supply system with a lower degree of hazard shall be protected as specified in s. SPS 382.41.

b. When a water treatment device is provided to lower the concentration of a health-related contaminant, cross connection control ~~shall~~ may not be required to protect the water supply system downstream of the treatment device from the upstream contaminated source.

4. The water supply system shall be protected from thermal expansion when a closed system is created.

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

a. Aboveground piping supplying water other than potable shall be labeled by tags or colored bands according to Table 382.40–1a.

Note: When identifying potable water piping or valves with tags or bands, label according to Table 382.40–1a.

b. Valves supplying other than potable water shall be identified by tags according to Table 382.40–1a.

c. The tags or colored bands shall be placed at intervals of not more than 25 feet. Where piping passes through a wall, floor, or roof, the piping shall be so identified on each side of the wall and within each compartment.

d. The colored bands shall be at least 3 inches wide and shall bear text identifying the water or the specific use.

e. Tags used to identify water outlets, valves and piping shall be of metal or plastic in the shape specified in Table 382.40–1a.

f. The lettering on the triangular and circular tags shall be at least a 1/2 inch in height.

g. A hose bibb intended to discharge water that does not meet drinking water quality as specified in s. SPS 382.70, shall be labeled as nonpotable or so identified for the specific use or uses, and shall be equipped with a removable handle.

2. Piping downstream of cross connection control assemblies as listed in Table 382.22–1 shall be labeled with bands or tags as specified in subd. 1. a. to f.

3. Where a building or a structure is served by ~~2~~ two distribution systems~~,~~; one system supplied by a public water supply and the other system supplied by a private well, each water distribution system shall be identified to indicate the supply source.

4. The installation of each reduced pressure principle backflow preventer, reduced principle 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.

a. The method to display the department assigned identification number shall be a weather-resistant tag, securely attached to the cross connection control assembly.

b. The tag shall contain at least the following information.

Wisconsin Department of Safety and Professional Services
Identification/Object Number _____
Cross Connection Control Assembly
Do Not Remove This Tag

c. The department assigned identification number shall be printed in the blank area with a permanent, waterproof marker, or similar indelible method.

Note: To obtain a Department-assigned identification number for a cross connection control assembly, contact the Department's Division of Industry Services at P.O. Box 7162, Madison, WI 53707-7162; ~~or at telephone~~ (608) 266-2112 ~~or (877) 617-1565 or 711 (Telecommunications Relay); or at fax (608) 267-9723;~~ or ~~at the Division's Web site at http://dsps.wi.gov/programs/industry-services.~~ dsps.wi.gov.

(e) *Multipurpose piping system.* ~~1. Except as provided in subd. 2., a~~ 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. SPS 384.30, Table 384.30–9. (repeal)~~

~~**Note:** See s. SPS 321.095 of the Dwelling Code and s. SPS 362.0903 (10) of the Commercial Building Code as to fire protection provisions for multipurpose piping systems.~~ [moved after 6.]

~~2.~~ 1. Fire department connections are prohibited in a multipurpose piping system.

2. Materials for multipurpose piping systems shall be acceptable under NFPA 13D or ss. SPS 384.30 (4) (e) and (5).

3. A partial or single sprinkler per NFPA 13D may be installed in a dwelling unit that is not required to be sprinkled.

4. Limited purposed or limited area sprinklers may be installed in areas that are not required to be sprinkled.

5. Five gallons per minute shall be added onto the multipurpose calculations for each dwelling connected to a common water supply system.

6. A flow test shall be performed at the controlling sprinkler before the system is put into operation.

[Need exceptions here?]

(4) CONTROL VALVES. (a) *Private water mains.* Private water mains shall be provided with control valves as specified in this subsection.

1. 'Corporation cocks.' a. If a private water main 2-inches" or less in diameter connects to a public water main, a corporation cock shall be installed at the connection to the public water main.

b. If a private water main 2-1/2" inches or larger in diameter connects to a public water main, a corporation cock shall be installed not more than 8 feet from the connection to the public water main.

2. 'Curb stops.' a. Except as provided in subd. 2. b., if a private water main connects to public water main, a curb stop shall be installed in the private water main between the corporation cock and the property line.

b. If a private water main 2-1/2" inches or larger in diameter connects to a public water main, one control valve may serve as the corporation cock and the curb stop. The control valve shall be located not more than 8 feet from the connection to the public water main and shall be accessible for operation.

Note: See ch. SPS 382 Appendix A-382.40 (4) for further explanatory material.

(b) *Water services.* Water services shall be provided with control valves as specified in this subsection.

1. 'Corporation cocks.' a. If a water service 2" inches or less in diameter connects to a public water main, a corporation cock shall be installed at the connection to the public water main.

b. If a water service 2-1/2" inches or larger in diameter connects to a public water main, a corporation cock shall be installed not more than 8 feet from the connection to the public water main.

2. 'Curb stops.' a. Except for water services serving farm buildings and farm houses, a curb stop shall be installed in each water service ~~which~~ that connects to a private water main. The curb stop shall be located outside the building served by the water service.

b. Except as provided in subd. 2. c., a curb stop shall be installed in each water service ~~which~~ that connects to a public water main. The curb stop shall be located between the corporation cock and the property line.

c. If a water service 2-1/2" inches or larger in diameter connects to a public water main, one control valve may serve as the corporation cock and the curb stop. The control valve shall be located not more than 8 feet from the connection to a public water main and shall be accessible for operation.

3. 'Building control valves.' If a water service serves a building, a building control valve shall be provided in the water service as specified in this subsection.

a. If the water service connects to a public water supply or to a private water supply ~~which~~ that has an external pressure tank, the building control valve shall be installed inside the building and located within 3 feet of developed length from the point where the water service first enters the building. If a water meter is provided, the building control valve shall be located upstream of the water meter.

b. If a private water supply includes an internal pressure tank, the building control valve shall be installed inside the building and located within 3 feet of developed length downstream from the internal pressure tank.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Water distribution systems.* 1. Control valves shall be installed in water distribution systems serving public buildings as specified in this subdivision.

a. If a water meter is provided, a control valve shall be installed within 3 feet of developed length downstream from the outlet of the water meter. If bypass piping is provided around a water meter, a control valve shall be installed in the bypass piping.

Note: See sub. (8) (d) 3. for the requirements relating to the bypassing of water meters.

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. When the valve is an internal part of the water treatment device, the device shall be removable for service.

c. If a hot water circulation system is provided, a control valve shall be installed on both the inlet and outlet piping to the circulation pump. If a hot water circulation system has ~~2~~ two or more return pipe lines, a balancing control valve shall be installed in each return piping line.

d. The water distribution system for buildings with more than ~~4~~ four dwelling units or living units shall be provided with control valves in such numbers and at such locations so that the water supplied to all the units within the building can be isolated into groups of ~~4 of~~ four or less units.

Note: See sub. (8) (g) for the valve requirements for water temperature control.

2. Control valves shall be installed in water distribution systems serving one- and 2-family dwellings as specified in this subdivision.

a. If a water meter is provided, a control valve shall be installed within 3 feet of developed length downstream from the outlet of the water meter. If bypass piping is provided around a water meter, a control valve shall be installed in the bypass piping.

Note: See sub. (8) (d) 3. for the requirements relating to the bypassing of water meters.

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 water closet, exterior hose bibb, plumbing appliance, and piece of equipment. When the valve is an internal part of the water treatment device, the device shall be removable for service.

c. If a hot water circulation system is provided, a control valve shall be installed on both the inlet and outlet piping to the circulation pump. If a hot water circulation system has ~~2~~ two or more return pipe lines, a balancing control valve shall be installed in each return piping line.

(5) HOT WATER SUPPLY SYSTEMS. (a) *General.* 1. Water heating systems shall be sized to provide sufficient hot water to supply peak demand.

~~**Note:** Residential exclusion see s. SPS 325.01 (2).~~

2. The minimum flow rate of a tankless type water heater may be obtained by multiplying 0.65 by the calculated hot water

gallons per minute demand, as determined by Tables 382.40-1b and 382.40-3, provided the heater will achieve a water temperature of 110°F at the terminal fitting or faucet.

a. The sizing method in subd. 2. may not be used for sizing a water heater serving a high-flow fixture, a hose bibb, a hydrant, or a fixture that is required to have a supply line with a diameter larger than one-half inch.

b. For the purposes of this subsection, "high-flow fixture" means a fixture with a flow rate of more than 4 gallons per minute, at 80 pounds per square inch, and a water velocity not exceeding 8 feet per second.

(b) *Temperature maintenance.* If the developed length of hot water distribution piping from the source of the hot water supply to a plumbing fixture or appliance exceeds 100 feet, a circulation system or self-regulating electric heating cable shall be provided to maintain the temperature of the hot water within the distribution piping.

1. If a circulation system is used to maintain the temperature, no uncirculated hot water distribution piping may exceed 25 feet in developed length.

a. A hot water circulation system connection shall be made downstream of the control valve serving the water heating device.

2. If a self-regulating electric heating cable is used to maintain the temperature, the cable shall extend to within 25 feet of each fixture or the appliance.

3. Water distribution piping conveying circulated water or served by a self-regulating electric heating cable shall be insulated to limit the heat loss at the external surface of the pipe insulation to a maximum of 25 BTUs per hour per square foot for aboveground piping and 35 BTUs per hour per square foot for underground piping. The maximum heat loss shall be determined at a temperature differential, T, equal to the maximum water temperature minus a design ambient temperature no higher than 65°F.

4. Water distribution piping served by self-regulating electric heating cable shall be identified as being electrically traced in accordance with ch. SPS 316.

5. The installation of self-regulating electric heating cable may be subcontracted by a plumber to another trade.

Note: See A-382.40 (5) for pipe insulation requirements.

(c) *Water heaters.* All water heaters and safety devices shall be designed and constructed in accordance with s. SPS 384.20 (5) (p).

Note: Water heaters are to be installed in accordance with the requirements specified in chs. SPS 361 to 366 and chs. SPS 320 to 325 with respect to energy efficiency, enclosures and venting.

(d) *Safety devices.* Water heaters shall be equipped with safety devices as specified in this paragraph.

1. All pressurized storage-type water heaters and unfired hot water storage tanks shall be equipped with one or more combination temperature and pressure relief valves. The temperature steam rating of a combination temperature and pressure relief valve or valves shall equal or exceed the energy input rating in BTU per hour of the water heater. No shut off valve or other restricting device may be installed between the water heater or storage tank and the combination temperature and pressure relief valve.

Note: The temperature steam rating of a combination temperature and pressure relief valve is commonly referred to as the AGA temperature steam rating.

2. All pressurized non-storage type water heaters shall be provided with a pressure relief valve installed at the hot water outlet with no shut off valve between the heater and the relief valve.

3. Temperature and pressure relief valves shall be installed so that the sensing element of the valve extends into the heater or tank and monitors the temperature in the top 6~~"~~ inches of the heater or tank.

4. A vacuum relief valve shall be installed in each water heater and hot water storage tank which, when measured from the bottom of the heater or tank, is located more than 20 feet above any faucet or outlet served by the heater or tank.

5. Every relief valve which is designed to discharge water or steam shall be connected to a discharge pipe.

a. The discharge pipe and fittings shall be made of a material acceptable for water distribution piping in accordance with s. SPS 384.30 (4) (e) 1.

b. The discharge pipe and fittings shall have a diameter not less than the diameter of the relief valve outlet.

c. The discharge pipe may not be trapped.

d. No valve may be installed in the discharge pipe.

e. The discharge pipe shall be installed to drain by gravity flow to a floor served by a floor drain or to a receptor in accordance with s. SPS 382.33 (8). The outlet of the discharge pipe shall terminate within 6~~"~~ inches over the floor or receptor, but not less than a distance equal to twice the diameter of the outlet pipe. The outlet of the discharge pipe may not be threaded.

f. The discharge pipe for a water heater shall terminate within the same room or enclosure ~~within which~~ where the water heater or hot water storage tank is located.

(e) *Controls.* 1. All hot water supply systems shall be equipped with automatic temperature controls capable of adjustments from the lowest to the highest acceptable temperature settings for the intended use.

2. A separate means shall be provided to terminate the energy supplied to each water heater and each hot water circulation system.

(6) LOAD FACTORS FOR WATER SUPPLY SYSTEMS. (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 Tables 382.40-1b and 382.40-2 for the corresponding fixture and use. Water supply fixture units may be converted to gallons per minute in accordance with Table 382.40-3 or 382.40-3e.

(b) *Continuous flow devices.* The load factor for equipment ~~which~~ that demands a continuous flow of water shall be computed on the basis of anticipated flow rate in terms of gallons per minute.

Note: See s. SPS 321.095 of the Dwelling Code and s. SPS 362.0903 (10) of the Commercial Building Code as to fire protection provisions for multipurpose piping systems.

Table 382.40-1a
Distribution and Service

Supply	Tag and Band Color	Tag Shape	Tag Size	Tag Legend[a]
Potable	Green	Round	3″ diameter	Safe Water
Nonpotable	Yellow	Triangle	4″ sides	Nonpotable Water or Not Safe for Drinking
Reuse (Nonpotable)	Purple	Triangle	4″ sides	Nonpotable Water or Not Safe for Drinking or Specific Use[b]
Device Specific[c]	Gray	Triangle	4″ sides	Specific Use[b]

[a] All nonpotable water outlets shall be identified at the point of use for each outlet with the following legends or as otherwise approved by the department.
[b] Tag should reflect the intended use.
[c] Serving an individual or similar plumbing fixtures or appliances.

Table 382.40-1b
Water Supply Fixture Units for Nonpublic Use Fixtures

Type of Fixture[a]	Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
Automatic Clothes Washer	1.0	1.0	1.5
Bar Sink	0.5	0.5	1.0
Bathtub, with or without Shower Head	1.5	1.5	2.0
Bidet	1.0	1.0	1.5
Dishwashing Machine	1.0		1.0
Glass Filler		0.5	0.5
Hose Bibb:			
1/2″ diameter		3.0	3.0
3/4″ diameter		4.0	4.0
Kitchen Sink	1.0	1.0	1.5
Laundry Tray, 1 or 2 Compartment	1.0	1.0	1.5
Lavatory	0.5	0.5	1.0
Manufactured Home	--	15	15
Shower, Per Head	1.0	1.0	1.5
Water Closet, Flushometer Type		6.0	6.0
Water Closet, Gravity Type Flush Tank		2.0	2.0
Bathroom Groups:			
Bathtub, Lavatory and Water Closet-FM[b]	2.0	7.5	8.0
Bathtub, Lavatory and Water Closet-FT[c]	2.0	3.5	4.0
Shower Stall, Lavatory and Water Closet-FM	1.5	7.0	7.5
Shower Stall, Lavatory and Water Closet-FT	1.5	3.0	3.5

[a] For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.
[b] FM means flushometer type.
[c] FT means flush tank type.

Table 382.40-2
Water Supply Fixture Units for Public Use Fixtures

Type of Fixture[a]	Water Supply Fixture Units (wsfu)		
	Hot	Cold	Total
Automatic Clothes Washer, Individual	2.0	2.0	3.0
Commercial-type			
Automatic Clothes Washer, Large Capacity Commercial-type	b	b	b
Automatic Clothes Washer, Residential-type	1	1	1.5
Autopsy Table	2.0	2.0	3.0
Bathtub, With or Without Shower Head	2.0	2.0	3.0
Coffeemaker		0.5	0.5
Dishwasher, Commercial	b	b	b
Drink Dispenser		0.5	0.5
Drinking Fountain		0.25	0.25
Glass Filler		0.5	0.5
Health Care Fixtures:			
Clinic sink	2.0	7.0	7.0
Exam/treatment sink	0.5	0.5	1.0
Sitz bath	1.5	1.5	2.0
Surgeon washup	1.5	1.5	2.0
Hose Bibb:			
1/2″ diameter		3.0	3.0
3/4″ diameter		4.0	4.0
Icemaker		0.5	0.5
Lavatory	0.5	0.5	1.0
Shower, Per Head	2.0	2.0	3.0
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
Service sink	2.0	2.0	3.0
Urinal:			
Syphon Jet		4.0	4.0
Washdown		2.0	2.0
Wall Hydrant, Hot and Cold Mix:			
1/2″ diameter	2.0	2.0	3.0
3/4″ diameter	3.0	3.0	4.0
Wash Fountain:			
Semicircular	1.5	1.5	2.0
Circular	2.0	2.0	3.0
Water Closet:			
Flushometer		6.5	6.5
Gravity Type Flush Tank		3.0	3.0

[a] For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.

[b] Load factors in gallons per minute, gpm, based on manufacturer's requirements.

Table 382.40-3
Conversion of Water Supply Fixture Units to Gallons Per Minute

Water Supply Fixture Units	Gallons per Minute	
	Predominately Flushometer Type Water Closets or Syphon Jet Urinals	Predominately Flush Tank Type Water Closets or Washdown Urinals
1	—	1
2	—	2
3	—	3
4	10	4
5	15	4.5
6	18	5
7	21	6
8	24	6.5
9	26	7
10	27	8
20	35	14
30	40	20
40	46	24
50	51	28
60	54	32
70	58	35
80	62	38
90	65	41
100	68	42
120	73	48
140	78	53
160	83	57
180	87	61
200	92	65
250	101	75
300	110	85
400	126	105
500	142	125
600	157	143
700	170	161
800	183	178
900	197	195
1000	208	208
1250	240	240
1500	267	267
1750	294	294
2000	321	321
2250	348	348
2500	375	375
2750	402	402
3000	432	432
4000	525	525
5000	593	593

Note: Values not specified in the table may be calculated by interpolation.

Table 382.40–3e
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 382.70–1 shall use Table 382.40–3 for conversion.
[b] Table shall not be used for converting hose bibb, high flow fixture or hydrant wsfu.

(7) SIZING OF WATER SUPPLY PIPING. The sizing of the water supply system shall be based on the empirical method and limitations outlined in this subsection or on a detailed engineering analysis acceptable to the department.

(a) *Methodology.* The determination of minimum pipe sizes shall ~~take into~~ account for the pressure losses which occur throughout the entire water supply system and the flow velocities within the water distribution system. Calculations for sizing a water distribution system shall include all of the following:

1. The load factor in water supply fixture units or gallons per minute on the piping~~;~~.

2. The minimum pressure available from the water main or pressure tank~~;~~.

3. The pressure loss due to the differences in elevation from all of the following:

a. Water main or pressure tank to the building control valve~~; and~~.

b. Building control valve to the controlling plumbing fixture~~;~~.

4. The pressure losses due to flow through water heaters, water treatment devices, water meters, and backflow preventers~~;~~.

5. The minimum flow pressure needed at the controlling plumbing fixture~~; and~~.

6. The pressure losses due to flow friction through piping, fittings, valves, and other plumbing appurtenances. This pressure loss may be calculated in terms of equivalent lengths of piping. The equivalent length of piping to a controlling plumbing fixture, including fittings, valves, and other appurtenances, may be obtained by multiplying the developed length by 1.5.

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) *Private water mains and water services.* Private water mains and water services shall be designed to supply water to the water distribution systems to maintain the minimum flow pressures specified in par. (d)~~,~~ but ~~shall~~ may not be less than 3/4~~"~~ inch in diameter.

Note: See ch. SPS 382 Appendix for further explanatory material.

(c) *Maximum loading.* The calculated load on any portion of the water distribution system may not exceed the limits specified in Tables 382.40-4 to 382.40-9.

(d) *Pressure.* 1. Except as provided in subd. 1. a. to ~~e~~ d., water supply systems shall be designed to provide at least 8 psig of flow pressure at the outlets of all fixture supplies.

a. The flow pressure at the outlets of the fixture supplies serving siphonic type urinals, washdown type urinals and washdown type water closets, 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, manufactured homes, and thermostatic mixing valves shall be at least 20 psig.

c. The flow pressure at the outlets of the fixture supplies serving blowout type urinals and blowout type water closets shall be at least 25 psig.

d. Minimum pressure required by the manufacturer for fixture, appliance, or equipment to operate. [sentence structure]

2. a. Except as provided in subd. 3., if the water pressure available from a water main or private water supply exceeds 80 psig, a pressure reducing valve and strainer, ~~if a~~ providing the strainer is not a component of the valve, shall be installed in the water distribution system.

b. A pressure reducing valve required under subd. 2. a. shall be installed upstream from all plumbing fixtures and plumbing appliances and downstream from the water meter of ~~an~~ a utility, if a meter is provided.

3. A pressure reducing valve ~~shall~~ may not be required to be installed in a water distribution system which supplies water directly to a water pressure booster pump.

4. If the pressure or water supply volume available from the water main or private water supply is inadequate by calculation to provide the minimum pressures specified in subd. 1., a hydropneumatic pressure booster system or a water pressure booster pump ~~shall~~ may be installed to increase the supply of water.

a. Each water pressure booster pump shall be provided with an automatic ~~low pressure~~ low-pressure cut-off switch. The cut-off switch shall be located on the inlet side of the pump and shall be set to terminate the energy supplied to the pump when a positive pressure of less than 10 psig occurs. Pressure gauges shall be installed on the influent and effluent piping.

b. A vacuum relief valve not less than one-half inch in diameter shall be installed in each water pressure tank, if the bottom of the pressure tank is more than 20 feet above any water supply outlet served by the pressure tank.

(e) *Maximum velocity.* A water distribution system shall be designed so that the flow velocity does not exceed 8 feet per second, except for combination sprinkler distribution piping as designed in par. (3) (e).

(f) *Minimum sizes.* 1. Water distribution piping 1/2~~"~~ inch in diameter serving ~~2~~ two or more plumbing fixtures may not have a load of more than ~~2~~ two water supply fixture units.

2. Water distribution piping 1/2~~"~~ inch in diameter serving a shower which is not individually pressure balanced or individually thermostatically blended may not serve any additional fixtures.

(g) *Minimum sizes for fixture supplies.* Except as provided in subds. 1. to 3., the fixture supplies serving all plumbing fixtures, appliances and pieces of equipment shall be at least 1/2~~"~~inch in diameter.

1. Fixture supplies serving syphon jet type urinals shall be at least 3/4~~"~~ inch in diameter.

2. Fixture supplies serving flushometer type water closets shall be at least one inch in diameter.

3. Fixture supplies serving emergency eye wash or shower outlets shall be not less than recommended by the manufacturer.

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

b. A fixture supply connector located downstream of a water cooler, water treatment device or water heater ~~which~~ that individually serves a faucet or outlet may not exceed more than 10 feet in developed length.

c. A fixture supply connector located upstream of a water treatment device serving no more than ~~2~~ two fixtures or outlets may not exceed 10 feet in developed length.

2. Fixture supply connectors may not extend more than 10 feet in developed length upstream of a plumbing appliance.

(8) INSTALLATION. (a) *Frost protection.* 1. Adequate measures shall be taken to protect all portions of the water supply system from freezing. All private water mains and water services shall be installed below the predicted depths of frost specified in s. SPS 382.30 (11) (c) 2. d., Figure 382.30-1, and Table 382.30-6, unless other protective measures from freezing are taken.

2. A hose bibb or a hydrant that penetrates an exterior wall of a heated structure shall be a frost proof and self-draining type.

Note: See s. SPS 382.41 (4) (m) relative to cross connection control devices.

(b) *Location.* 1. Exterior water supply piping may not be located in, under, or above sanitary sewer manholes, or POWTS treatment, holding, or dispersal components.

2. If a private water main or a water service crosses a sanitary sewer, the water piping within 5 feet of the point of crossing shall be installed in accordance with any of the following requirements:

a. The water piping shall be installed at least 12 inches above the top of the sewer.

b. The water piping shall be installed at least 18 inches below the bottom of the sewer.

c. The water or sewer piping shall be installed within a waterproof sleeve made of materials as specified for sanitary building sewers in s. SPS 384.30 (2).

3. Except as permitted in subds. 4 and 5., private water mains and water services shall be installed at least 5 feet horizontally from any sanitary sewer.

Note: The Department of Natural Resources has limitations for the separation of water mains and sanitary sewers.

4. Private water mains and water services may be installed less than 5 feet horizontally from a pressurized sanitary sewer if all of the following conditions are met:

a. The bottom of the water piping is installed at least 18 inches above the pressurized sewer.

b. The water piping is installed at least 3 feet horizontally from the pressurized sewer.

5. Private water mains and water services may be installed less than 5 feet horizontally from a non-pressurized sanitary sewer if any of the following conditions are met:

a. The bottom of the water piping is installed at least 12 inches above the sewer.

b. The sewer is constructed of materials listed in Table 384.30-2.

c. The water service is 2 inches or less in diameter and is located more than 24 inches from the sewer.

6. The portion of a private water main or water service within 5 feet of developed length from the point where the water service first enters the building may be less than 12 inches above the sewer and within 24 inches of the sewer.

7. No private water main or water service may be installed within 6 inches of a storm sewer.

Note: See ch. SPS 382 Appendix A-382.30 (11) (d) for setback distance from yard hydrant to well.

Note: See ch. SPS 383 Table 383.43–1 for setback distances to POWTS components.

9. No underground water supply storage tank shall be installed within 8 feet of a storage vessel containing a substance of a higher hazard than that contained in the water supply storage tank.

10. Private water mains shall be provided with provisions for effective flushing of the system at a minimum of 10 feet per second until clear.

Note: See ch. SPS 382 Appendix for further explanatory material.

(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.

(d) *Water distribution piping.* 1. Water distribution piping shall be supported in accordance with s. SPS 382.60.

2. Provisions shall be made to evacuate all water out of the water distribution system.

3. a. Except where parallel water meters are installed, water distribution piping shall be provided to bypass a water meter 1½~~"~~ inches or larger.

b. The minimum diameter of water distribution piping serving as a meter bypass ~~shall~~ may be one nominal pipe size smaller than the ~~meter~~ required diameter of the distribution piping.

4. Except as provided in subds. 5. and 6., a bypass shall be provided to serve a water treatment device. The bypass piping may be an internal part of the water treatment device.

5. A bypass shall not be required when a water treatment device serves no more than ~~2~~ two 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. SPS 382.70 (3).

7. The main water distribution piping one nominal pipe size over code minimum shall provide for effective flushing of the system at 8 feet per second.

(e) *Valves.* 1. All control valves installed in a water service, except a valve serving only as a corporation cock, shall be accessible.

2. Stop- and waste-type control valves may not be installed underground except in the following situations:

a. Fire hydrants intended for fire fighting.

b. Two-inch and larger diameter hydrants serving municipal wastewater treatment plants.

c. Emergency fixtures.

3. All control valves and fixture stop valves installed in a water distribution system shall be accessible. Control valves for

the individual plumbing fixtures and appliances within dwelling units shall be accessible from within the dwelling unit.

(f) *Water hammer arrestors.* All plumbing fixtures, appliances, and appurtenances with 3/8" inch or larger inlet openings and with solenoid actuated quick closing valves shall be provided with water hammer arrestors. Water hammer arrestors shall be installed in the fixture supplies serving the fixtures, appliances, or appurtenances. Water hammer arrestors shall be accessible.

(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 combination thermostatic-pressure balanced mixing valve may not be bypassed.

(h) *Fittings and connections.* The drilling and tapping of water supply piping shall be prohibited except for:

1. Corporation cocks for a water service or a private water main; and

2. Self-tapping valves ~~which~~ that serve individual plumbing appliances.

(i) *Flushing and disinfection of potable water supply systems.* 1. a. Before a newly constructed water supply system is to be put into use, the piping of the system shall be ~~filled~~flushed with water and disinfected. ~~allowed to stand for at least 24 hours. After 24 hours each~~ Each water outlet shall be flushed beginning with the outlet closest to the building control valve and then each successive outlet in the system. The flushing at each water outlet shall continue for at least one minute and until the water appears clear and with no trace of disinfectant at the outlet.

b. Each portion of a water supply system ~~which~~ that is altered or repaired shall be flushed for at least one minute and until the water appears clear.

2. New private water mains and extensions to private water mains shall be disinfected prior to use in accordance with AWWA C651 or the following method:

a. The pipe system shall be flushed with clean water until no dirty water appears at the points of outlet.

b. The system or part thereof shall be filled with a solution of water and chlorine containing at least 50 parts per million of chlorine and the system or part thereof shall be valved off and allowed to stand for 24 hours or the system or part thereof shall be filled with a solution of water and chlorine containing at least 200 parts per million of chlorine and allowed to stand for 3 hours.

c. Following the allowed standing time, the system shall be flushed with clean potable water.

d. The procedures shall be repeated if it is shown by a bacteriological examination that contamination still exists in the system.

3. The department may require a water quality analysis to be done for a new or repaired water supply system. The analysis shall be performed in accordance with acceptable nationally recognized laboratory practices. If the water supply system has been disinfected, water samples for the analysis may not be taken sooner than 24 hours after disinfection.

Note: See s. SPS 384.30 (1) regarding the bending of pipe and protection from puncture.

4. New or repaired combination water services or combination private water mains shall be flushed and disinfected prior to use in accordance with NFPA 24.

5. Dead ends within the water distribution systems may not exceed 10 pipe diameters.

[moved/renumbered j. to 382.34 (17)] ~~(j) *Water softeners.* Ion exchange water softeners used primarily for water hardness reduction that, during regeneration, discharge a brine solution shall be of a demand initiated regeneration type equipped with a water meter or a sensor unless a wastewater treatment system downstream of the water softener specifically documents the reduction of chlorides.~~

(jm) *Water tanks.* Water tanks for public, potable use shall meet the criteria set forth in this section.

1. Pneumatic pressure tanks shall conform to all of the following:

a. Tanks shall conform to ch. SPS 384.

b. Tanks shall be served by a pressure relief valve.

c. Tanks shall be able to be isolated for maintenance, repair, or replacement, and equipped with a drain valve by means of a control valve.

d. Water calculations incorporating the size of a pneumatic pressure tank may use a five-minute peak flow in gallons per minute for the water supply system. The system shall be designed to minimize stagnation.

e. Tanks shall be stamped or labeled showing the manufacturer's name, model number, the tank volume, year manufactured, and the allowable working pressure.

2. Storage tanks shall conform to s. SPS 384.25.

3. Storage tanks shall be constructed and maintained to protect the water supply in accordance with the following requirements:

a. All water storage tanks and structures shall be watertight that exclude water, rain, snow, birds, animals, insects, and dust.

b. Exterior translucent tanks shall be covered.

4. Potable water may not be stored in a tank or compartment adjacent to nonpotable water when the two compartments are separated by a single wall.

5. Locks shall be provided on access manholes, inspection covers, fill pipe, fences, ladder cage bottoms, and any other measures deemed necessary to prevent trespassing, vandalism, and sabotage.

6. Piping used to drain a storage tank or structure shall discharge to the ground surface through an air gap. The drain may discharge over a drainage inlet receptor, splash pad, or rip rap.

7. Tanks or reservoir shall be provided with overflow piping and shall be brought down to within 6 to 12 inches above graded-normal surfaces. The pipe shall open downward over a drainage inlet, splash pad, or rip rap. Interior tanks within the building structure shall provide overflow piping discharging to an approved clearwater receptor, or as approved by the department.

a. The overflow outlet pipe shall be provided with a 4-mesh non-corrodible screen.

b. The overflow outlet pipe shall be of approved water distribution as per Table 384.30-8.

c. The overflow outlet pipe shall be sized and of sufficient diameter to permit discharge flow in excess of the maximum fill rate of the inlet pipe flow.

d. Overflow piping shall be visible at the discharge location.

e. Storage tanks or reservoirs with more than one compartment and each compartment can be isolated from the rest of the tanks or reservoirs shall be provided with its own overflow pipe.

8. Inlet piping and outlet piping from a tank or storage structure shall be sized in accordance with s. SPS 382.40 (7). Piping shall be of approved materials in accordance with Table 384.30-8 for locations within the building and above floor and in

accordance with Table 384.30-7 for locations below grade and outside of the building foundation parameters.

9. Water tanks or structures shall have convenient access for cleaning and maintenance.

a. Manhole openings shall be fitted with a solid watertight cover that overlaps the framed opening and extends down around the opening frame a minimum of two inches. A water tight gasket shall be attached to the bottom side of the manhole cover.

b. Manhole covers for buried tanks or structures shall be no less than 24 inches above a sloped finished grade.

c. Inspection covers shall be water tight and secured to prevent unauthorized access.

d. Interior paints or coatings shall conform to NSF/ANSI Standard 61.

10. Bypass piping shall be provided allowing the tank or reservoir to be taken out of service for maintenance and inspection purposes when directly connected to a well or municipal water supply.

11. Storage tanks shall be vented to the atmosphere. The overflow pipe may not be considered a vent.

a. Vents shall be constructed of water distribution materials as per Table 384.30-8 or as approved by the department.

b. Vents shall terminate above the top of the tank in a U-bend or vent cap with the opening or 24 to 36 inches above grade and covered with a 24-mesh stainless steel screen at a location that is secured.

c. Minimum vent size shall allow an air flow consistent with water inflow and outflow rates. Minimum size shall be two inches.

12. Exterior tanks may not be located within a flood plain or floodway or within two feet above the regional flood elevation.

a. Grading the surrounding area shall be such that surface water will not stand within the 50 feet of the storage tank.

b. Storage tanks shall be located in an area that is accessible year-round.

c. Contamination sources such as sewers, drains, fuel storage tanks, or standing water shall be kept a minimum of 50 feet from the tank or as approved by the department.

d. The top roof or an exterior tank may not be less than 2 feet above the normal ground surface.

13. Atmospheric pressure tanks shall have a means for maintaining pressure within the building water distribution system. A hydro-pneumatic tank, pump facilities, or other reliable methods shall be provided to maintain system pressure.

a. Manual valves shall be installed in the water distribution system to isolate tank and pump equipment from the water distribution system.

b. Valves designated for operation or the storage tank shall be visibly recognized as being open or closed. Solenoid valves shall have a control system panel that will have indicators showing visual valve open or closed status.

c. Drain valves shall be provided for maintenance purposes for access to the storage tank.

d. High water fill valve or float valve shall maintain the storage tank levels to the minimum water storage required for use. A bypass to the fill valve shall be provided.

e. Tank water levels shall be observable by means of a sight level indicator.

f. A pressure gauge shall be installed downstream of the storage tank and booster pumps.

g. A thermometer or sensors shall be installed on the storage tank for water temperature monitoring purposes.

14. The influent water supply to the storage tank shall be from an approved source and controlled to maintain the minimum and maximum water levels.

a. The influent water supply shall terminate a minimum of 6 inches above the high-water level.

b. The influent water supply piping shall be provided with a control valve.

15. Pumps shall be installed according to the manufacturer specifications and s. SPS 382.40 (7) (d) 4. Pump piping shall have required check valves, pressure gauge, isolation valves, and sampling faucet installed on the system.

16. Continuous water treatment is required for all storage tanks through a constant water flow through the potable water storage tank. All of the water tank volume shall be turned over every 24 hours.

17. All piping and control valves serving the storage tank water system shall be labeled in accordance with Table 382.40-1a for specific use. Labels shall be grey, triangular with 4-inch sides, and labeled as "Potable Water, Storage Tank".

18. The interior and exterior of water storage facilities shall be regularly inspected and maintained in accordance with NR 810.14.

a. Inspections of storage facilities 10,000 gallons or greater shall be performed by a professional tank inspection firm or by a registered professional engineer.

b. Maintenance shall include removal of sedimentation and biofilm, and repairs as necessary to maintain good working condition.

c. All storage facilities shall be inspected a minimum of every five years, unless otherwise approved by the department.

d. Inspections of vent and overflow screens and hatches shall be conducted once per year.

19. A record shall be kept on dates of cleaning, relining, and replacement of components or parts. Department representatives shall be provided access to the water storage system and records upon request.

(k) *Locating requirements.* 1. A means to locate buried non-metallic water services and private water mains connected to municipal supply systems shall be provided in accordance with the options under s. SPS 382.30 (11) (h), except as provided in subds. 2. and 3.

2. Tracer wire insulation color for non-metallic, potable water pipe shall be blue.

3. Tracer wire insulation color for non-metallic, non-potable water pipe shall be purple.

History: 1-2-56; r. and recr. Register, November, 1972, No. 203, eff. 12-1-72; r. and recr. Register, February, 1979, No. 278, eff. 3-1-79; renum. from H 62.13, Register, July, 1983, No. 331, eff. 8-1-83; renum. from ILHR 82.13 and r. and recr. (2) (b) and (4) (d) 1., am. (4) (c) 3. and (6) (a) (intro.), cr. (6) (b), Register, February, 1985, No. 350, eff. 3-1-85; r. and recr. Register, May, 1988, No. 389, eff. 6-1-88; am. (5) (d) 5. a., r. and recr. (7) (h) 1. and (8) (c), renum. (8) (c) 2. to 6. to be (8) (b) 4. to 8. and am. (8) (b) 4. c., Register, August, 1991, No. 428, eff. 9-1-91; am. (8) (b) 1. and 2., Register, April, 1992, No. 436, eff. 5-1-92; renum. (3) (c) and (8) (a) to be (3) (c) 2. and (8) (a) 1. and am. (8) (a) 1., cr. (3) (c) 1., (e), (8) (a) 2. and Table 82.40-9, am. (7) (c), r. (3) (b) 1. b. and c., Register, February, 1994, No. 458, eff. 3-1-94; r. (5) (b) 3., renum. (5) (b) 4., 5. to be (5) (b) 3., 4., Register, December, 1996, No. 480, eff. 4-1-96; correction in (5) (b) 3., made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1996, No. 490; r. and recr. (5) (b), Register, February, 1997, No. 494, eff. 4-1-97; reprinted to restore dropped copy, Register, April, 1997, No. 496; am. (3) (e) and (8) (b) 1. and 2., r. (8) (b) 3. and cr. (3) (f) and (8) (j), Register, April, 2000, No. 532, eff. 7-1-00; except (3) (f) eff. 5-1-00; cr. (3) (d) 3., am. (8) (g) and (i) 2., Register, December, 2000, No. 540, eff. 1-1-01; except (3) (d) 3., eff. 9-1-01; CR 02-002: r. and recr. (3) (a), (d) 1. (intro.) to b., (7) (h), (8) (c) and Tables 82.40-4 to 11, cr. (3) (a) 2., (c) 3. and (d) 1. h., am. (3) (b) 1., (4) (c) 1. b. and 2. b., (7) (d)

1. a. and b., (8) (d) 4., (g), and Tables 82.40-1 and 2, r. (3) (e), renum. (3) (f) and (8) (b) 4. to 8. to be (3) (e) and (8) (b) 3. to 7., Register April 2003 No. 568, eff. 5-1-03; CR 02-129: am. (4) (c) 1. b. Register January 2004 No. 577, eff. 2-1-04, correction in (8) (b) 5. made under s. 13.93 (2m) b. 7., Stats., Register January 2004 No. 577; CR 04-035: r. (3) (e) 2. c., r. and recr. Table 82.40-9, cr. (8) (i) 4. Register November 2004 No. 587, eff. 12-1-04; CR 06-120: r. and recr. (3) (e) 2. b., cr. (3) (e) 2. c. Register February 2008 No. 626, eff. 3-1-08; CR 07-069: cr. (8) (k) Register February 2008 No. 626, eff. 3-1-08; CR 07-100: am. (8) (b) 2. Register September 2008 No. 633, eff. 10-1-08; CR 08-055: am. (3) (b) 1. b., (d) 3. (intro.), (5) (c), (6) (a), (7) (d) 1. b., (8) (b) 2., (j), Tables 82.40-1 and 82.40-2, r. and recr. (3) (e), (8) (e) 2., cr. (8) (b) 8., (d) 3. b. and Table 82.40-3e, renum. (8) (d) 3. to be (8) (d) 3. a. Register February 2009 No. 638, eff. 3-1-09; CR 10-064: am. (3) (a) (title), (c) 1., (5) (a), (6) (a), (8) (b) 3. to 6.,Table 82.40-8 (title) and Table 82.40-10 (title), r. and recr. (3) (d) 1., renum. (3) (d) 2., 3. and Table 82.40-1 to be (3) (d) 3., 4. and Table 82.40-1b, cr. (3) (d) 2., (8) (b) 9., Table 82.40-1a, r. (9) Register December 2010 No. 660, eff. 1-1-11; CR 10-103: r. (3) (e) 2. b. to 2. d., renum. (3) (e) 2. a. to (3) (e) 2., Register August 2011 No. 668, eff. 9-1-11; correction in (2), (3) (a) 1., 2., (c) 2., 3. a., (d) 1. a., b., e., g., 2., 4. b., (5) (b) 4., (c), (d) 5. a., e., (6) (a), (7) (c), (8) (a) 1., (b) 3. c., 5. b., (d) 1., 6., (k) 1., Table 382.40-3e made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672; CR 11-031: r. (8) (b) 2., 8., renum. (8) (b) 3., 4. to (8) (b) 2., 3., am. (8) (b) 3., cr. (8) (b) 4., am. (8) (b) 5. (intro.), 7. Register June 2013 No. 690, eff. 7-1-13; CR 13-046: am. (6) (a) Register December 2013 No. 696, eff. 1-1-14.

SAFETY AND PROFESSIONAL SERVICES

SPS 382.40

Table 382.40-4

MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING-TYPE K, ASTM B88; (C=150)

ssure s Due riction bs. per ft. of ngth)	Pipe Diameter (in inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WS	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	
.5	0.5	-	0.5	1.5	-	1.5	3.5	-	3.5	6.5	-	8.0	10.5	4.0	14.0	22.0	7.0	35.0	39.0	28.0	83.0	62.0	80.0	185	132	437		
1	1.0	-	1.0	2.5	-	2.5	5.0	-	6.0	9.5	-	12.5	15.5	5.0	22.5	32.0	16.0	60.0	57.0	67.0	160	91.0	196	330	192	864		
2	1.0	-	1.0	3.5	-	3.5	7.5	-	9.5	14.0	4.5	20.0	22.0	7.0	35.0	47.0	42.0	116	83.0	160	290	132	437	538	279	1611		
3	1.5	-	1.5	4.5	-	5.0	9.5	-	12.5	17.5	5.5	25.5	28.0	11.0	50.0	58.0	70.0	165	103	261	390	165	661	723	291	1725		
4	2.0	-	2.0	5.0	-	6.0	11.5	4.0	15.5	20.5	6.5	31.0	32.0	16.0	60.0	68.0	100	215	116	338	455	165	665	726	NP			
5	2.0	-	2.0	6.0	-	7.0	13.0	4.5	18.0	23.0	7.5	37.0	36.0	22.0	73.0	75.0	128	250	NP			NP						
6	2.5	-	2.5	6.5	-	8.0	14.0	4.5	20.0	25.0	8.5	42.0	40.0	30.0	86.0	NP												
7	2.5	-	2.5	7.0	-	9.0	15.5	5.0	22.5	28.0	11.0	50.0	42.0	34.0	103													
8	3.0	-	3.0	7.5	-	9.5	16.5	5.5	24.0	30.0	13.5	55.0	NP															
9	3.0	-	3.0	8.0	-	10.0	17.5	5.5	25.5	NP																		
10	3.5	-	3.5	8.5	-	10.5	18.5	6.0	27.5																			
11	3.5	-	3.5	9.0	-	11.5	19.0	6.0	28.5																			
12	3.5	-	3.5	9.5	-	12.5	NP																					
13	4.0	-	4.0	10.0	4.0	13.0																						
14	4.0	-	4.0	10.5	4.0	14.0																						
15	4.0	-	4.0	10.5	4.0	14.5																						
16	4.5	-	5.0	NP																								
17	4.5	-	5.0																									
18	4.5	-	5.0																									
19	5.0	-	6.0																									
	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.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 382.40-5
MAXIMUM ALLOWABLE LOAD FOR COPPER TUBING-TYPE L, ASTM B88; (C=150)

Pressure Loss Due to Friction (lbs. per sq. ft. of Length)	Pipe Diameter (in inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WS	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	
0.5	0.5	-	0.5	2.0	-	2.0	4.0	-	4.0	7.0	-	9.0	11.0	4.0	15.0	23.0	7.5	37.0	40.0	30.0	86.0	65.0	90.0	200	136	462		
1	1.0	-	1.0	2.5	-	2.5	5.5	-	6.5	10.0	4.0	13.0	16.0	5.0	23.0	33.0	17.5	63.0	59.0	72.0	170	94.0	211	345	198	909		
2	1.5	-	1.5	4.0	-	4.0	8.5	-	10.5	14.5	4.5	20.5	23.0	7.5	37.0	48.0	44.0	120	86.0	175	305	137	468	566	288	1694		
3	2.0	-	2.0	5.0	-	6.0	10.5	4.0	14.0	18.5	6.0	27.5	29.0	12.5	52.0	60.0	75.0	175	107	283	410	169	698	752	298	1792		
4	2.0	-	2.0	6.0	-	7.0	12.0	4.0	16.5	21.5	7.0	33.0	34.0	18.5	66.0	70.0	108	225	119	356	469	NP			NP			
5	2.5	-	2.5	6.5	-	8.0	14.0	4.5	20.0	24.0	8.0	40.0	38.0	26.0	80.0	77.0	136	260	NP									
6	2.5	-	2.5	7.5	-	9.5	15.5	5.0	22.5	26.0	9.0	45.0	42.0	33.0	100	NP												
7	3.0	-	3.0	8.0	-	10.0	16.5	5.5	24.0	29.0	12.5	52.0	44.0	37.0	107													
8	3.0	-	3.0	8.5	-	10.5	18.0	6.0	26.5	31.0	15.0	58.0	NP															
9	3.5	-	3.5	9.5	-	12.5	19.0	6.0	28.0	NP																		
10	3.5	-	3.5	10.0	4.0	13.0	20.0	6.5	30.0																			
11	4.0	-	4.0	10.5	4.0	14.0	20.5	6.5	31.0																			
12	4.0	-	4.0	11.0	4.0	15.0	NP																					
13	4.0	-	4.0	11.5	4.0	15.5																						
14	4.5	-	5.0	12.0	4.0	16.5																						
15	4.5	-	5.0	NP																								
16	5.0	-	6.0																									
17	5.0	-	6.0																									
18	5.0	-	6.0																									
19	5.0	-	6.0																									
20	5.5	-	6.5																									
	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.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 382.40-6

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

ssure s Due riction bs. per ft. of ngth)	Pipe Diameter (in inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WS	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	
.5	0.5	-	0.5	2.0	-	2.0	4.0	-	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	
1	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	61.0	77.0	180	97.0	227	360	202	945	
2	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	88.0	184	315	141	493	588	294	1750	
3	2.0	-	2.0	5.5	-	6.5	11.5	4.0	15.5	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	
4	2.5	-	2.5	6.5	-	8.0	13.0	4.5	18.0	22.0	7.0	35.0	35.0	20.0	70.0	73.0	120	240	121	374	484	NP			NP		
5	2.5	-	2.5	7.5	-	9.5	15.0	5.0	21.5	25.0	8.5	42.0	40.0	30.0	86.0	79.0	144	270	NP								
6	3.0	-	3.0	8.0	-	10.0	16.5	5.5	24.0	28.0	11.0	50.0	44.0	36.0	106	NP											
7	3.5	-	3.5	9.0	-	11.5	18.0	6.0	26.5	30.0	13.5	55.0	45.0	39.0	112												
8	3.5	-	3.5	9.5	-	12.5	19.5	6.5	29.0	32.0	17.0	62.0	NP														
9	4.0	-	4.0	10.0	4.0	13.0	20.5	6.5	31.0	NP																	
10	4.0	-	4.0	11.0	4.0	15.0	21.5	7.0	34.0																		
11	4.5	-	5.0	11.5	4.0	15.5	NP																				
12	4.5	-	5.0	12.0	4.0	16.5																					
13	5.0	-	6.0	12.5	4.5	17.5																					
14	5.0	-	6.0	12.5	4.5	18.0																					
15	5.0	-	6.0	NP																							
16	5.5	-	6.5																								
17	5.5	-	6.5																								
18	5.5	-	6.5																								
19	6.0	-	7.0																								
20	6.0	-	7.0																								
21	6.0	-	7.5																								
	NP																										

SAFETY AND PROFESSIONAL SERVICES

SPS 382.40

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.

SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 382.40-7
MAXIMUM ALLOWABLE LOAD FOR GALVANIZED STEEL PIPE, SCHEDULE 40, ASTM A53; (C=150)

ssure s Due riction bs. per ft. of ngth)	Pipe Diameter (in inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WS	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	
.5	0.5	-	0.5	1.5	-	1.5	3.5	-	3.5	7.0	-	9.0	11.0	4.0	15.0	21.0	7.0	32.0	34.0	18.5	66.0	60.0	75.0	175	123	381		
1	1.0	-	1.0	2.5	-	2.5	5.0	-	6.0	10.5	4.0	14.0	16.0	5.0	23.0	31.0	15.0	57.0	49.0	46.0	124	87.0	180	310	179	769		
2	1.5	-	1.5	4.0	-	4.0	7.5	-	9.5	15.5	5.0	22.5	23.0	7.5	37.0	45.0	38.0	110	72.0	116	235	127	406	511	260	1435		
3	2.0	-	2.0	5.0	-	6.0	9.0	-	11.5	19.0	6.0	28.0	29.0	12.5	52.0	56.0	65.0	155	89.0	188	320	158	607	683	317	1966		
4	2.5	-	2.5	5.5	-	6.5	11.0	4.0	15.0	22.0	7.0	35.0	34.0	18.5	66.0	65.0	90	200	104	266	395	184	809	837	NP			
5	3.0	-	3.0	6.5	-	8.0	12.0	4.0	16.5	25.0	8.5	42.0	38.0	26.0	80.0	74.0	124	245	118	350	465	NP						
6	3.0	-	3.0	7.0	-	9.0	13.5	4.5	19.0	28.0	11.0	50.0	42.0	33.0	100	81.0	152	280	119	358	471							
7	3.5	-	3.5	7.5	-	9.5	14.5	4.5	20.5	30.0	13.5	55.0	46.0	40.0	113	83.0	163	293	NP									
8	4.0	-	4.0	8.0	-	10.0	16.0	5.0	23.0	33.0	17.5	63.0	49.0	46.0	124	NP												
9	4.0	-	4.0	9.0	-	11.5	17.0	5.5	25.0	35.0	20.0	70.0	50.0	49.0	131													
10	4.5	-	5.0	9.5	-	12.5	18.0	6.0	26.5	37.0	24.0	76.0	NP															
11	4.5	-	5.0	10.0	4.0	13.0	19.0	6.0	28.0	37.0	24.0	77.0																
12	5.0	-	6.0	10.5	4.0	14.0	19.5	6.5	29.0	NP																		
13	5.0	-	6.0	11.0	4.0	15.0	20.5	6.5	31.0																			
14	5.0	-	6.0	11.0	4.0	15.0	21.5	7.0	33.0																			
15	5.5	-	6.5	11.5	4.0	15.5	NP																					
16	5.5	-	6.5	12.0	4.0	16.5																						
17	6.0	-	7.0	12.5	4.5	17.5																						
18	6.0	-	7.0	13.0	4.5	18.0																						
19	6.0	-	7.0	13.0	4.5	18.5																						
20	6.5	-	8.0	NP																								
21	6.5	-	8.0																									
22	7.0	-	9.0																									
23	7.0	-	9.0																									
24	7.0	-	9.0																									
25	7.5	-	9.5																									
	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.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 382.40-8
CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM D2846 and F442, SDR 11; (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"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	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	4.0	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	4.0	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	4.5	17.5	21.5	7.0	33.0	33.0	17.5	63.0	NP		
8	2.5	-	2.5	7.0	-	9.0	13.5	4.5	19.0	23.0	7.5	37.0	34.0	19.0	68.0			
9	2.5	-	2.5	7.0	-	9.0	14.5	4.5	20.5	24.0	8.0	40.0	NP					
10	2.5	-	2.5	7.5	-	9.5	15.0	5.0	21.5	24.0	8.0	41.0						
11	3.0	-	3.0	8.0	-	10.0	16.0	5.0	23.0	NP								
12	3.0	-	3.0	8.5	-	10.5	16.5	5.5	24.0									
13	3.0	-	3.0	9.0	-	11.5	NP											
14	3.0	-	3.0	9.5	-	12.5												
15	3.5	-	3.5	9.5	-	12.5												
16	3.5	-	3.5	10.0	4.0	13.0												
17	3.5	-	3.5	NP														
18	4.0	-	4.0															
19	4.0	-	4.0															
20	4.0	-	4.0															
21	4.0	-	4.0															
22	4.0	-	4.0															
23	4.5	-	5.0															
	NP																	

SPS 382.40

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.

SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 382.40-9
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"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	0.5	-	0.5	0.5	-	0.5	1.0	-	1.0	2.5	-	2.5	4.0	-	4.0	6.5	-	8.0	13.5	4.5	19.0
1	0.5	-	0.5	1.0	-	1.0	1.5	-	1.5	3.5	-	3.5	6.0	-	7.0	9.5	-	12.5	19.5	6.5	29.0
2	1.0	-	1.0	1.5	-	1.5	2.5	-	2.5	5.0	-	6.0	9.0	-	11.5	14.0	4.5	20.0	28.0	11.0	50.0
3	1.0	-	1.0	2.0	-	2.0	3.0	-	3.0	6.5	-	8.0	11.0	4.0	15.0	17.5	5.5	25.5	36.0	22.0	73.0
4	1.5	-	1.5	2.5	-	2.5	4.0	-	4.0	7.5	-	9.5	13.0	4.5	18.0	20.5	6.5	31.0	42.0	33.0	100
5	1.5	-	1.5	3.0	-	3.0	4.5	-	5.0	8.5	-	10.5	15.0	5.0	21.5	23.0	7.5	37.0	47.0	42.0	116
6	2.0	-	2.0	3.0	-	3.0	5.0	-	6.0	9.5	-	12.5	16.5	5.5	24.0	25.0	8.5	42.0	51.0	53.0	135
7	2.0	-	2.0	3.5	-	3.5	5.5	-	6.5	10.5	4.0	14.0	18.0	6.0	26.5	28.0	11.0	50.0	NP		
8	2.0	-	2.0	3.5	-	3.5	5.5	-	6.5	11.0	4.0	15.0	19.0	6.0	28.0	30.0	13.5	55.0			
9	2.5	-	2.5	4.0	-	4.0	6.0	-	7.0	12.0	4.0	16.5	20.5	6.5	31.0	NP					
10	2.5	-	2.5	4.0	-	4.0	6.5	-	8.0	12.5	4.5	17.5	21.5	7.0	34.0						
11	2.5	-	2.5	4.5	-	5.0	7.0	-	9.0	13.5	4.5	19.0	NP								
12	2.5	-	2.5	4.5	-	5.0	7.0	-	9.0	14.0	4.5	20.0									
13	3.0	-	3.0	5.0	-	6.0	7.5	-	9.5	14.5	4.5	20.5									
14	3.0	-	3.0	5.0	-	6.0	8.0	-	10.0	NP											
15	3.0	-	3.0	5.5	-	6.5	8.0	-	10.0												
16	3.0	-	3.0	5.5	-	6.5	8.5	-	10.5												
17	3.5	-	3.5	5.5	-	6.5	8.5	-	11.0												
18	3.5	-	3.5	6.0	-	7.0	NP														
19	3.5	-	3.5	6.0	-	7.0															
20	3.5	-	3.5	6.0	-	7.5															
21	4.0	-	4.0	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.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

Table 382.40-10
MAXIMUM ALLOWABLE LOAD FOR CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM F442, SDR 13.5; (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"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	2.5	-	2.5	4.5	-	3.0	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		
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					
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								
7	11.0	4.0	15.0	20.0	6.5	30.0	37.0	24.0	76.0	50.0	48.0	128									
8	11.5	4.0	15.5	21.5	7.0	33.0	38.0	26.0	80.0	NP											
9	12.5	4.5	17.5	23.0	7.5	37.0	NP														
10	13.0	4.5	18.0	23.0	7.5	39.0															
11	14.0	4.5	20.0	NP																	
12	14.5	4.5	20.5																		
13	14.5	5.0	21.5																		
	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.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping. *
Approved for cold water use only.
Intended use is for MPP systems.

Table 382.40-11
MAXIMUM ALLOWABLE LOAD FOR POLYETHYLENE ALUMINUM POLYETHYLENE TUBING (PexAlPex), ASTM F1281; (C=150)

ressure oss Due Friction lbs. per 00 ft. of Length)	Pipe Diameter (in inches)											
	1/2"			5/8"			3/4"			1"		
		WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	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	4.0	14.0
4	1.5	-	1.5	3.5	-	3.5	6.5	-	8.0	12.5	4.5	17.5
5	2.0	-	2.0	4.0	-	4.0	7.0	-	9.0	14.0	4.5	20.0
6	2.0	-	2.0	4.0	-	4.0	8.0	-	10.0	15.5	5.0	22.5
7	2.5	-	2.5	4.5	-	5.0	8.5	-	10.5	17.0	5.5	25.0
8	2.5	-	2.5	5.0	-	6.0	9.5	-	12.5	18.0	6.0	26.5
9	2.5	-	2.5	5.5	-	6.5	10.0	4.0	13.0	19.5	6.5	29.0
10	3.0	-	3.0	5.5	-	6.5	10.5	4.0	14.0	20.5	6.5	31.0
11	3.0	-	3.0	6.0	-	7.0	11.0	4.0	15.0	20.5	6.5	32.0
12	3.0	-	3.0	6.0	-	7.0	11.5	4.0	15.5	NP		
13	3.5	-	3.5	6.5	-	8.0	12.5	4.5	17.5			
14	3.5	-	3.5	7.0	-	9.0	NP					
15	3.5	-	3.5	7.0	-	9.0						
16	3.5	-	3.5	7.5	-	9.5						
17	4.0	-	4.0	NP								
18	4.0	-	4.0									
19	4.0	-	4.0									
20	4.0	-	4.0									
21	4.5	-	5.0									
	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.
SPS 382.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

SPS 382.41 **Cross connection control. (1)** SCOPE. The provisions of this section set forth the requirements for the protection of water within water supply systems when and where there is the possibility of contamination due to cross connections or backflow conditions.

Note: The Department of Natural Resources governs the operation and design of community water systems and under s. NR 811.09 requires the supplier of water to develop and implement a comprehensive cross connection control program.

(2) MATERIALS. (a) All devices, assemblies, and mechanisms intended to protect water supplies relative to cross connection or backflow shall be of a type recognized and approved in accordance with ch. SPS 384 and as described in sub. (4).

(b) All methods including barometric loops and air gaps intended to protect water supplies relative to cross connection or backflow shall be constructed of materials suitable for water supply systems in accordance with ch. SPS 384.

(3) GENERAL REQUIREMENTS. Water supply systems and the connection of each plumbing fixture, piece of equipment, appliance, or nonpotable water piping system shall be designed, installed, and maintained in such a manner to prevent the contamination of water supplies by means of cross connections.

(a) *Types of cross connection control.* 1. Water supply systems shall be protected against contamination due to cross connections or backflow conditions by one of the methods or devices specified in Table 382.41-1 depending upon the situation or Table 382.41-2 depending upon the specific application or use, and the limitations specified in sub. (4).

2. For the situations described in par. (b) 3., cross connection control shall be provided as part of the fixture fitting outlet or in the water supply piping for the fixture fitting outlet.

(b) *Classifications.* For the purposes of this section, the following situations apply:

1. The designation of a high hazard or low hazard situation shall be determined on the basis of how a toxic or nontoxic solution is intended or recommended by the manufacturer of the solution to interface with the potable water supply system.

2. a. A continuous pressure situation shall be considered to exist when a pressure greater than atmospheric within the water supply system exists for more than 12 continuous hours.

b. A noncontinuous pressure situation shall be considered to exist if the conditions in subd. 2. a. do not occur.

3. A high hazard cross connection situation shall be considered to exist for a connection of the water supply system to any of the following:

a. Any part of the drain system~~; and~~.

b. Any other piping system conveying water from nonpotable sources, including but not limited to lakes, rivers, streams, or creeks.

4. Except as provided in subd. 5., a high hazard cross connection situation shall be considered to exist at any of the following:

a. A water supply hose bibb, faucet, wall hydrant, sill cock or other outlet which terminates with hose threads allowing a hose to be attached~~:~~.

b. A water supply faucet, wall hydrant, or other outlet which terminates with a serrated nipple allowing a hose to be attached~~;~~.

c. A water supply faucet, hydrant, or outlet serving a sink used for building maintenance in a public building~~;~~.

d. A chemical pot-feeder or automatic chemical feeder is installed to serve a boiler, cooling tower, or chilled water system~~; and~~.

e. In the water supply piping connecting to the outlet of a fire hydrant for any purpose other than fire suppression.

5. A cross connection ~~shall~~ may not be considered to exist at the hose threaded outlet installed for the sole purpose of the following:

a. Draining a water supply system or any portion ~~thereof~~ of the water supply system~~:~~.

b. Obtaining water quality samples of the water supply system or any portion ~~thereof; or~~ of the water supply system.

c. Connecting individual residential-type automatic clothes washers.

6. a. A high hazard situation shall be considered to exist for the connection of ~~2~~ two water supply systems~~;~~ one supplied by a public water supply and the other system supplied by a private well.

Note: The interconnection of a public water supply system and another source of water is addressed in s. NR 811.09 and must be approved by the Department of Natural Resources.

b. Except as provided in subd. 7., a low hazard situation shall be considered to exist for the connection of a piping system, including ~~but not limited to~~ automatic fire sprinkler systems, standpipe systems, and processing purposes, ~~which provides~~ that provide potable water for nonrequired potable water uses.

Note: Cross connection control devices used in conjunction with automatic fire sprinkler systems are to be listed by an acceptable testing agency for such an application under the standards governing the design and installation of automatic fire sprinkler systems.

7. A cross connection situation ~~shall~~ may not be considered to exist when a multipurpose piping system serves a one- or 2-family dwelling provided the sprinkler system is constructed of materials and joints suitable for water distribution systems as specified in ss. SPS 384.30 (4) (e) and 384.40, respectively.

(c) *Containment.* 1. For sewerage treatment facilities ~~which~~ that are required to conform with ch. NR 110, in addition to the cross connection control required for each potable water usage or water outlet, a reduced pressure principle backflow preventer shall be installed~~:~~ in accordance with the following:

a. In the water service to each building or structure within the complex~~:~~.

b. In the private water main upstream of all water services serving the facility~~; or~~.

c. In the water distribution system upstream of all water outlets and in the process piping network upstream of all points of use, if both a water distribution system and a process network is contained within the same building or structure.

2. For marinas, wharves, and docks where potable water outlets are provided to serve boats or ships, in addition to the cross connection control required for each potable water outlet or usage, a reduced pressure principle backflow preventer shall be installed in the water supply system to limit backflow into the water supply source.

3. The installation of a cross connection control device in the water supply system for a building or structure ~~shall~~ may not alleviate the requirement to provide cross connection control for the connection of each plumbing fixture, piece of equipment, appliance, or other piping system.

(d) *Prohibitions.* The use of a toxic solution as a heat transfer fluid in single-wall heat exchanger for potable water is prohibited.

(e) *Existing automatic fire sprinkler systems.* An alteration, modification, or addition to an existing automatic fire sprinkler shall necessitate conformance with this section, if any of the following apply:

1. Existing water supply line to the existing sprinkler system is increased in diameter~~; or~~.

2. Existing device or method ~~which~~ that had been previously recognized to address cross connection concerns is to be removed or replaced.

Table 382.41-1
Acceptable Cross Connection Control Methods, Devices, or Assemblies

Methods or Assemblies of Cross Connection Control (Standard)	Situations and Conditions							
	Backpressure				Backsiphonage			
	Low Hazard		High Hazard		Low Hazard		High Hazard	
	Continuous Pressure	Noncontinuous Pressure	Continuous Pressure	Noncontinuous Pressure	Contin-uous Pressure	Nonconti nuous Pressure	Contin-uous Pressure	Noncon-tinuous Pressure
Air-gap Fittings for use with Plumbing Fixtures, Appliances, and Appurtenances (ASME A112.1.3)					X	X	X	X
Air Gaps (ASME A112.1.2)	X	X	X	X	X	X	X	X
Atmospheric Vacuum Breaker (CAN/CSA B64.1.1)						X		X
Backflow Preventers with Intermediate Atmospheric Vent (ASSE 1012)	X	X			X	X		
Barometric Loops					X	X	X	X
Dual Check Valve Type with Atmospheric Port Backflow Preventer (CAN/CSA B64.3)	X	X			X	X		
Hose Connection Backflow Preventers (ASSE 1052)	X[a]	X	X[a]	X	X[a]	X	X[a]	X
Hose Connection Vacuum Breakers (CAN/CSA B64.2 and B64.2.2)	X[a]	X	X[a]	X	X[a]	X	X[a]	X
Hose Connection Vacuum Breakers (ASSE 1011)	X[a]	X	X[a]	X	X[a]	X	X[a]	X
Pipe Applied Atmospheric Type Vacuum Breakers (ASSE 1001)						X		X
Pressure Vacuum Breaker Assembly (ASSE 1020)					X	X	X	X
Reduced Pressure Principle Backflow Preventers And Reduced Pressure Fire Protection Principle Backflow Preventers (ASSE 1013)	X	X	X	X	X	X	X	X
Reduced Pressure Principle Backflow Preventer (CAN/CSA B64.4)	X	X	X	X	X	X	X	X
Spill Resistant Vacuum Breaker (ASSE 1056 and CAN/CSA B64.1.3)					X	X	X	X
Vacuum Breaker (CAN/CSA B64.1.2)					X	X	X	X

[a] See limitation listed under s. SPS 382.41 (4) (c) 1. a.

Table 382.41-2
Acceptable Cross Connection Control Methods, Devices, or Assemblies for Specific Applications

Methods or Assemblies (Standard)	Types of Application or Use
Backflow Preventer for Beverage Dispensing Machines (ASSE 1022)	Beverage dispensers
Chemical Dispensing Systems (ASSE 1055)	Chemical dispensing systems
Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies (ASSE 1015)	Automatic fire sprinkler systems and standpipe systems Water-based fire protection system
Double Check Detector Fire Protection Backflow Prevention Assemblies (ASSE 1048)	Automatic fire sprinkler systems and standpipe systems Water-based fire protection system
Double Check Detector Valve Type Backflow Preventer (CAN/CSA B64.5)	Automatic fire sprinkler systems and standpipe systems Water-based fire protection system
Dual Check Backflow Preventer Wall Hydrant — Freeze Resistant Type (ASSE 1053)	Hose threaded outlet connection
Hand Held Showers (ASSE 1014)	Hand held shower assemblies
Laboratory Faucet Type Vacuum Breakers (CAN/CSA B64.7)	Laboratory faucets
Laboratory Faucet Vacuum Breakers (ASSE 1035)	Laboratory faucets
Pressurized Flushing Devices (Flushometers) For Plumbing Fixtures (ASSE 1037)	Flushometer plumbing fixtures
Reduced Pressure Detector Fire Prevention Backflow Prevention Assemblies (ASSE 1047)	Automatic fire sprinkler systems
Trap Seal Primer Valves, Water Supply Fed (ASSE 1018)	Traps for drain systems
Vacuum Breaker Tees [s. SPS 382.41 (5) (j)]	Water treatment devices
Wall Hydrants, Frost Proof Automatic Draining Anti-Backflow Type (ASSE 1019), types A or B	Hose threaded outlet connections
Water Closet Flush Tank Ball Cocks (ASSE 1002)	Gravity water closet flush tanks

(4) LIMITATIONS. (a) Cross connection control devices shall be limited in use in accordance with the respective standard, unless otherwise specifically permitted under this subsection.

(b) 1. Except for a deck-mounted device, a pipe applied atmospheric vacuum breaker shall be installed such that the bottom of the device or the critical level mark on the device is at least 6~~"~~ inches above all of the following:

a. The flood level rim of the receptor serving the water supply port.

b. The highest point downstream from the device where backpressure would be created.

c. The highest point of an injection or aspiration port.

2. A deck-mounted pipe applied atmospheric type vacuum breaker shall be installed such that the bottom of the device or the critical level mark on the device is at least one inch above all of the following:

a. The flood level rim of the receptor serving the water supply port.

b. The highest point downstream from the device where backpressure would be created.

c. The highest point of an injection or aspiration port.

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

b. The use of a hose connection backflow preventer and a hose connection vacuum breaker shall be limited to the discharge side of a control valve such as a faucet or hose bibb.

2. A hose connection backflow preventer and a hose connection vacuum breaker may not be employed in backpressure situations of more than 10 feet of water column.

(d) A backflow preventer with intermediate atmospheric vent shall conform to all of the following:

1. May not be employed in backpressure situations of more than 150 psig~~; and~~.

2. May not serve boilers having a maximum steam pressure setting greater than 15 psig or a maximum water pressure setting greater than 30 psig.

(e) 1. A reduced pressure principle backflow preventer and a reduced pressure detector backflow preventer may not be subjected to a backpressure greater than twice the rated working pressure of the device.

2. A reduced pressure principle backflow preventer and a reduced pressure detector backflow preventer ~~which~~ that serve a water-based fire protection system may have a test outlet located between the number 2 check valve and the number 2 listed indicating control valve.

3. A reduced pressure principle backflow preventer and a reduced pressure detector backflow preventer ~~which~~ that are 2~~"~~ inches or smaller in size and ~~which~~ serve a water-based fire protection system are not required to have a test cock on the number one listed indicating control valve.

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

(g) 1. A double check backflow prevention assembly and a double check detector assembly backflow preventer may not be subjected to a backpressure greater than twice the rated working pressure of the device.

2. A double check backflow prevention assembly and a double check detector assembly backflow preventer ~~which~~ that serve a water-based fire protection system may have a test outlet located between the number 2 check valve and the number 2 listed indicating control valve.

3. A double check backflow prevention assembly and a double check detector assembly backflow preventer which are 2" inches or smaller in size and ~~which~~ serve a water-based fire protection system are not required to have a test cock on the number one listed indicating control valve.

(h) A water supply fed trap seal primer valve shall be installed such that the bottom of the device or the critical level as marked on the device is at least 12" inches above all of the following:

1. The connection to the trap~~; and~~.

2. The highest point downstream from the device where backpressure would be created.

(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.

(k) 1. A pressure type vacuum breaker assembly shall be installed such that the bottom of the device or the critical level mark on the device is at least 12" inches above all of the following:

a. The flood level rim of the receptor serving the water supply port.

b. The highest point downstream from the device where backpressure would be created.

c. The highest point of an injection or aspiration port.

2. A pressure vacuum breaker assembly shall be located only outside.

(L) A laboratory faucet backflow preventer may not be employed in backpressure situations of more than 6 feet of water column.

(m) The cross connection control device to serve a hose bibb or hydrant that penetrates an exterior wall of a heated structure may not prevent a hose bibb or hydrant from being freeze resistant automatic draining as required under s. SPS 382.40 (8) (a).

(n) A spill resistant vacuum breaker shall be installed so that the bottom of the device or the critical level mark on the device is at least 12" inches above all of the following:

1. The flood level rim of the receptor serving the water supply port.

2. The highest point downstream from the device where back pressure would be created.

3. The highest point of an injection or aspiration port.

(5) INSTALLATION. (a) An air gap for cross connection control shall conform to ASME A112.1.2.

Note: See ch. SPS 382 Appendix for further explanatory material.

(b) Cross connection control methods, devices, and assemblies shall be installed in accordance with the manufacturer's written installation specifications and this chapter. The methods, devices, and assemblies shall be accessible for inspection, testing, maintenance, and replacement.

Note: See s. SPS 384.30 (5) (c).

(c) Cross connection control devices shall be protected from freezing.

(d) 1. A cross connection control device or cross connection control assembly may not be located in uninhabitable spaces susceptible to flooding.

1m. A cross connection control device or cross connection control assembly that does not incorporate a vent port may be installed in an uninhabited location susceptible to flooding.

2. A cross connection control device which has one or more vent ports may not be located in a pit, vault, or depression which is below the adjacent grade or floor level, even if the pit, vault, or depression is provided with a drain at the bottom of the pit.

(e) 1. Vent ports of cross connection control devices shall be positioned:

a. Away from areas where toxic gases and fumes may accumulate;

b. Downward or protected to protect the ports from falling debris; and

c. So as to drain dry.

2. Cross connection control devices or assemblies shall be so located that any vent ports are provided with an air gap so as to comply with s. SPS 382.33 or ASME A112.1.3.

3. a. If a reduced pressure principle backflow preventer or a reduced pressure detector backflow preventer is located within a building, a drain or receptor shall be provided to receive the discharge from the vent ports of the device. If a floor drain is to receive the discharge from the vent ports of a reduced pressure principle backflow preventer or a reduced pressure detector backflow preventer, the flow or pathway of the discharge may not create a nuisance.

b. Where drain piping is provided for the discharge from a vent port, an air gap in accordance with par. (a) shall be provided between the vent port and the drain piping.

c. Where a receptor is provided for the discharge from a vent port, an air gap in accordance with par. (a) shall be provided between the vent port and the receptor.

(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 spill resistant vacuum beaker shall conform to all of the following limitations:

1. The minimum distance between the floor, surface, or platform which is to provide access and the lowest point of the assembly may not be less than 12" inches.

2. The maximum distance between the floor, surface or platform which is to provide access and the lowest point of the assembly may not be more than 7 feet.

3. The minimum distance between a ceiling or other obstruction and the highest point of the assembly may not be less than 18" inches.

4. The minimum distance between a wall or other obstruction and the back and ends of the assembly may not be less than 4" inches.

5. The minimum distance between a wall or other obstruction and the front of the assembly may not be less than 24" inches.

Note: See ch. SPS 382 Appendix for further explanatory material.

(g) The discharge outlet of local waste piping serving a cross connection control device shall be visible and not be located within a concealed space.

(h) No control valve may be placed downstream from a pipe applied atmospheric type vacuum breaker or a laboratory faucet backflow preventer.

(i) A barometric loop to provide cross connection control for backsiphonage shall be formed by creating a loop in the potable water supply piping upstream to the source of cross connection.

1. The loop shall extend at least 35 feet above all of the following:

a. The highest point downstream from the loop where backpressure would be created~~; and~~.

b. The point of discharge.

2. No outlets for potable water use shall be installed downstream of the peak of the loop.

(j) Vacuum breaker tees shall be assembled ~~such that~~ in accordance with the following:

1. The bottom of the horizontal portion of the tee ~~is~~ shall be installed at least one inch above the flood level rim of the receptor~~;~~.

2. The inside diameter of the tee ~~is~~ shall be equal to or greater than the inside diameter of the drain piping from the water treatment device~~;~~.

3. The tee ~~is~~ shall be installed in such a position that the discharge will not create a nuisance~~;~~.

4. The piping upstream of the tee ~~is~~ shall be of a type suitable for water distribution in accordance with s. SPS 384.30 (4) (e).

5. The vent portion of the tee ~~is~~ shall be equal to or greater than the inside diameter of the drain piping from the water treatment device~~; and~~.

6. The vent port of the tee is~~:~~ shall be

~~a. Positioned~~ positioned away from areas where toxic gases and fumes may accumulate~~; and~~, and

~~b. Constructed~~ shall be constructed to protect the port from falling debris.

(k) A chemical dispensing system shall be connected to the water distribution system in either of the following manners:

1. The fixture supply shall be individually connected to the water distribution system.

2. The fixture supply shall be installed with a pressure bleeding device. The pressure bleeding device shall create a visually free flow of water through the atmosphere from the faucet connection into the fixture drain.

History: 1-2-56; r. (2) through (7), Register, October, 1971, No. 190, eff. 11-1-71; r. and recr. Register, November, 1972, No. 203, eff. 12-1-72; renum. from H 62.14, Register, July, 1983, No. 331, eff. 8-1-83; renum. from ILHR 82.14 and am. (1) (h) 17., r. (2), Register, February, 1985, No. 350, eff. 3-1-85**;** r. and recr. Register, February, 1994, No. 458, eff. 3-1-94; am. (2) (a), Tables 82.41-1, 2, (4) (c), (e) to (i), (k) to (m), (5) (e) 3. a., (i), cr. (4) (n), r. and recr. (5) (b), (f), r. (5) (h), Register, February, 1997, No. 494, eff. 3-1-97**;** correction in (4) (n) made under s. 13.93 (2m) (b) 1., Stats., Register, February, 2000, No. 530; am. (3) (a) 2., (4) (k) 1. and (5) (a), r. and recr. (4) (b) and (n), and Tables 82.41-1 and 82.41-2, cr. (4) (k) 1. c. and (5) (L), Register, December, 2000, No. 540, eff. 1-1-01**;** CR 02-002: am. (3) (intro.), (5) (a), Tables 82.41-1 and 2, renum. (5) (i) to (L) to be (5) (h) to (k) Register April 2003 No. 568, eff. 5-1-03; CR 04-035: cr. (3) (b) 4. d., am. Tables 82.41-1 and -2, 82.41 (2), (3) (a) 1. and (b) 7. Register November 2004 No. 587, eff. 12-1-04; CR 08-055: cr. (3) (b) 4. e., am. (4) (c) 1. a., (f), (i), (n), (5) (a), (e) 2., (f) (intro.), Tables 82.41-1 and 82.41-2 Register February 2009 No. 638, eff. 3-1-09; corrections in (6) made under s. 13.92 (4) (b) 1. and 7., Stats., Register February 2009 No. 638; CR 09-050: r. (6) Register December 2009 No. 648, eff. 1-1-10; CR 10-064: am. (1), (5) (e) 2., Table 82.41-2 Register December 2010 No. 660, eff. 1-1-11; correction in (2) (a), (b), (3) (a) 1., (b) 7., (4) (m), (5) (e) 2., (j) 4., Table 382.41-1, Table 382.41-2 made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter V — Special Plumbing Installations

SPS 382.50 **Health care and related facilities. (1)** GENERAL. The provisions of this section shall set forth the requirements for the design, installation, and maintenance of devices, fixtures, and equipment which are installed in health care and related facilities.

(2) FIXTURES AND EQUIPMENT. (a) *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~~ that require the use of water shall be provided with approved cross connection control.

(b) *Spouts and actions.* The selection of spouts and actions on plumbing fixtures shall comply with this section and Table 382.50-1.

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. Spouts shall have laminar flow in facilities listed in par. (3) (b).

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

b. A single level faucet handle may be used in lieu of wrist blades.

c. Lavatories with self-closing faucets accessible to patients, the flow of the hot water shall be calculated to evacuate the water distribution piping from the faucet to the recirculated hot water supply.

(c) *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~~ two 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. SPS 382.40 (7), except for additional services supplying water to additions deemed non-essential as defined in a hospital water management plan.

Note: The installation of two water services or a private water main may require the installation of a check valve. Refer to ch. NR 811 for more information.

(b) *Hospital, community-based residential facility, inpatient hospice, and nursing home water supply systems.* ~~1.~~ (intro.) Water supply systems serving a hospital, community-based residential facility, inpatient hospice, ~~or~~ nursing home, or additions to the facilities without a building division as defined by the department of health services, shall comply with all of the following:

1. Facilities with a population exceeding 250 occupants shall have a water management plan. The management plan shall include all of the following:

a. An emergency water contingency plan on the loss or contamination of the water supply.

b. A bacterial control plan.

c. The emergency and routine disinfection procedures.

d. The identity of the individual responsible for the water quality.

e. The provisions for the periodic flushing of the water supply system.

~~a.~~ 1m. ~~Except as provided in subd. 1. b., a~~ A single control valve may serve an area where ~~4~~ four or fewer patient care units exist and where each unit contains not more than ~~2~~ two persons, except a water supply serving an intensive care unit patient care unit shall be individually valved.

~~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. SPS 361 to 366.

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.

a. A hot water distribution system using temperature maintenance for bacterial control 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 3 feet in developed length.

b. Control valves shall automatically regulate the temperature of the water supply of the distribution system that exceeds 140°F to patient areas.

5. Water provided to patient showers, therapeutic equipment, and all types of baths shall be installed with pressure balanced and thermostatically controlled 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 0.5 gpm or less when the water supply to the fitting outlet exceeds 115°F or when loss of cold water pressure occurs.

Note: See ch. SPS 382 Appendix A-382.50 (3) (b) 5. for sketches showing various design options.

6. Hot water distribution systems may not include a heat recovery system and 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: (800) 5-ASHRAE or (404) 636-8400 ext. 507; fax: (404) 321-5478; e-mail: orders@ashrae.org; or online at www.ashrae.org.~~

bm. Chloride dioxide.

c. Ultraviolet.

d. Copper-silver ion.

e. Chloramine.

~~e~~ f. Another disinfection system approved by the department.

Note: See Appendix for further information.

7. Water discharged from a fixture fitting outlet accessible to patients may not exceed 115°F.

[Renumber 7 to 7.a. and amend] ~~a.~~ A water distribution system may not be designed, installed, ~~and~~ or maintained so that the ~~maximum temperature to~~ fixture fitting outlets accessible to patients (residents?) of an adult day care exceeds 115°F.

b. The use of limit stops in faucets to achieve a maximum temperature of 115°F is prohibited.

Note: See s. SPS 382.40 (5) and ch. DHS 124 for additional requirements for circulation systems.

8. ~~Except as provided in subd. 7., a~~ A water distribution system may not be designed, installed, and maintained so that the maximum temperature to fixture fitting outlets exceeds 180°F. The hot water distribution system shall be provided with an automatic control valve to ensure complete shut-down of flow if the temperature exceeds 180°F.

9. Dead ends within the water distribution systems may not exceed 10 pipe diameters.

10. Water outlets accessible to patients shall have laminar flow.

11. Hot water bacterial controlled distribution piping shall be labeled with bacterial control measure when other than thermal disinfection is used.

12. Where a dialysis box is installed in a patient room or a patient toilet room, all of the following shall apply:

a. The dialysis box shall be lockable.

b. Hose threads located within a lockable dialysis box used exclusively for the connection of portable dialysis equipment do not require a cross connection control device.

c. A receptor located within a dialysis box shall be sealed when not in use.

Table 382.50-1
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 minimum clearance	Hand	Wrist	Foot, Knee, or Electronic Sensor
NURSING DEPARTMENT					
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
NURSERY					
Nursery		X		X	X
Exam/treatment room		X		X	X
Infant intensive care unit		X			X
Labor room		X		X	X
SURGICAL					
Scrub room		X [a]			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 [a]		X	X
Fracture room	X	X		X	X
Recovery room		X			X
CENTRAL SUPPLY					
Work room	X	X		X	X
Solutions room	X	X		X	X
Pharmacy		X	X	X	X
Manufacturing		X		X	X
EMERGENCY DEPARTMENT					
Observation bedroom		X		X	X
Utility room		X		X	X
Operating room		X [a]			X
Exam room		X		X	X
DIAGNOSTIC AND TREATMENT					
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 [a]			X
Lavatory in autopsy shower room		X	X	X	X
Laboratory		X	X	X	X

Table 382.50-1 (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 minimum clearance	Hand	Wrist	Foot, Knee or Electronic Sensor
CLINIC OR OUTPATIENT DEPARTMENT					
Exam/treatment room		X		X	X
Dental operating room		X			X
Dental laboratory		X	X	X	X
Dental recovery room		X		X	X
Surgical room		X [a]			X
Eye exam room		X			X

Ear, nose and throat exam room		X			X
SERVICE DEPARTMENT					
Lavatory in kitchen	X	X		X	X
COMMON AREAS					
Day rooms		X		X	X
Hallways		X		X	X
Patient waiting area		X		X	X
Vestibule waiting area	X				

X = Spout and action meet required type.

[a] Spout includes a spray head.

History: 1-2-56; am. (3) (4) and (5), Register, August, 1961, No. 68, eff. 9-1-61; r. and recr. Register, November, 1972, No. 203, eff. 12-1-72; r. and recr., Register, February, 1979, No. 278, eff. 3-1-79; renum. from H 62.16, Register, July, 1983, No. 331, eff. 8-1-83; renum. from ILHR 82.16 and am. (7) (b), (10) (a) 1. and 2., (b) 2., (f) (intro.) and (h), Register, February, 1985, No. 350, eff. 3-1-85; r. (10) (f) and Table 25, Register, February, 1994, No. 458, eff. 3-1-94; correction in (7) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, July, 2000, No. 535; am. (2) and (10) (g) Table 26, r. and recr. (10) (g) and (h), r. (10) (i), Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: r. and recr. Register April 2003 No. 568, eff. 5-1-03; CR 04-035: am. Table 82.50-1 and (3) (b) 5. Register November 2004 No. 587, eff. 12-1-04; correction in (3) (b) 2. made under s. 13.92 (4) (b) 7., Stats., Register February 2008 No. 626; CR 08-055: am. (3) (b) 5. Register February 2009 No. 638, eff. 3-1-09; correction in (2) (b) (intro.), (3) (a) 2., (b) 2. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 382.51 **Manufactured homes and manufactured home communities.** **(1)** DRAIN SYSTEMS. Except as provided in pars. (a) and (b), the building sewers and private interceptor main sewers serving a manufactured home or manufactured home community shall comply with s. SPS 382.30.

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

(b) For manufactured homes, the most upstream point of the building sewer shall be determined at the connection with the building drain installed by the 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. SPS 384.30 (2) (a).

(2) WATER SUPPLY SYSTEMS. (a) Except as provided in pars. (b) and (c), the water services and private water mains for a manufactured home or manufactured home community shall comply with s. SPS 382.40.

(b) The above ground water service shall be constructed of materials approved for water distribution as specified in s. SPS 384.30 (4) (e).

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

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

(e) The entire water supply system shall be designed for periodic flushing.

(3) MANUFACTURED HOME CONNECTIONS. (a) Frost sleeves for plumbing serving a 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 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 382.30-6.

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 s. SPS 384.30 (2).

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

1. The manufactured home water service for connection to the manufactured home shall terminate a minimum of 6 inches above the surrounding finished grade.

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

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

Note: See ch. SPS 382 Appendix A-382.51 (3) for further explanatory material.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; r. and recr. Table, Register, August, 1991, No. 428, eff. 9-1-91; am. (2) (d), Register, February, 1994, No. 458, eff. 3-1-94; CR 02-002: r. and recr. Register April 2003 No. 568, eff. 5-1-03; CR 08-055: am. Register February 2009 No. 638, eff. 3-1-09; correction in (1) (intro.), (c), (2) (a), (b), (3) (a) 1., 3. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VI — Installation

SPS 382.60 **Pipe hangers and supports.** The provisions of this section control the types, materials and installation of anchors, hangers, and supports for plumbing piping.

(1) MATERIAL. (a) *Strength.* Hangers, anchors, and supports for piping shall be of sufficient strength to support the piping and its contents. Drain piping shall be considered as being full of water. Underground piers for pipe support shall be of concrete, masonry, plastic, or pressure treated wood.

(b) *Compatibility.* 1. Hangers and straps shall be of a compatible material that will reduce the potential for galvanic action with the piping.

2. Hangers and straps may not distort, cut, or abrade piping.

(2) INSTALLATION. (a) Piping hangers and anchors shall be securely attached to the building's structure at intervals to support the piping and its contents, but not at intervals greater than those specified in Table 382.60, except PVC used for venting may have a maximum horizontal spacing of 5 feet. The connection of drain piping to a fixture or appliance shall be considered a point of support.

(b) Hubless pipe installed in the horizontal position shall be supported within 24" inches on each side of a joint, unless the joint has an alignment retaining shield.

(c) Hangers ~~shall~~ may not be attached to a building's structure by means of wood plugs.

(d) Shower valves and piping from the shower valve to the shower head outlet shall be securely attached to the structure.

Table 382.60
Support Spacing

Material	Maximum Horizontal Spacing (feet)	Maximum Vertical Spacing (feet)
Acrylonitrile Butadiene Styrene (ABS)	4	10
Brass	10	10
Cast iron	5[a]	15
Copper or Copper-Alloy Pipe	12	10
Copper or Copper-Alloy Tubing:		
≤ 1¼″ diameter[c]	6	10
≥ 1½″ diameter[c]	10	10
Chlorinated Polyvinyl Chloride (CPVC):		
≤ 1″ diameter[c]	3	5[b]
≥ 1¼″ diameter[c]	4	6[b]
Crosslinked Polyethylene (PEX)	2 2/3	4
Ductile Iron	5[a]	15
Galvanized Steel	12	15
Lead	Continuous	4
Polybutylene (PB)	2 ft. 8 in.	4
Polyethylene (PE)	2	4
Polypropylene (PP)	2	4
Polyvinylidene Fluoride (PVDF)	2	4
Polyvinyl Chloride, flexible (PVC)	2	4
Polyvinyl Chloride (PVC)	4	10
Stainless Steel	12	15

[a] The maximum horizontal spacing for supports may be increased to 10 feet when 10-foot lengths of pipe are employed.
[b] Mid-story guide is to be employed.
[c] "≥" means greater than or equal to.
"≤" means less than or equal to.

History: Cr. Register, February, 1985, No. 350, eff. 3-1-85; r. and recr. Register, May, 1988, No. 389, eff. 6-1-88; r. and recr. Table 82.60, Register, February, 1994, No. 458, eff. 3-1-94; cr. (2) (d), Register, December, 2000, No. 540, eff. 1-1-01; CR 02-002: am. Table Register April 2003 No. 568, eff. 5-1-03; correction in (2) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VII — Plumbing Treatment Standards

SPS 382.70 **Plumbing treatment standards. (1)** PURPOSE. The purpose of this section is to establish plumbing treatment standards for plumbing systems that supply water to outlets based on the intended use.

(2) SCOPE. The provisions of this section apply to plumbing systems that supply water to outlets.

Note: For requirements and specifications for POWTS, refer to ch. SPS 383.

Note: The department of natural resources requires WPDES permits for point source discharges under ch. 283, Stats.

(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.

Note: Refer to s. SPS 382.34 for requirements for wastewater reuse.

(4) MINIMUM REQUIREMENTS. (a) Except as provided under par. (b), a plumbing system shall supply a quality of water at the outlet or at the termination of the plumbing system that meets or exceeds the minimum requirements as specified in Table 382.70-1.

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

Table 382.70-1
Plumbing Treatment Standards

Intended Use	Plumbing Treatment Standards [f]
1. Drinking, cooking, food processing, preparation and cleaning, pharmaceutical processing, and medical uses	NR 811 and 812 approved sources
2. Personal hygiene, bathing, and showering	NR 811 and 812 approved sources
3. Automatic fire protection systems	As acceptable by local authority
4. Swimming pool makeup water	NR 811 and 812 approved sources
5. Swimming pool fill water	DHS 172 requirements
6. Cooling water [b]	pH 6 - 9 [b] ≤ 50 mg/L BOD_5 ≤ 30 mg/L TSS Free chlorine residual 1.0 - 10.0 mg/L[b]
7. Subsurface infiltration and irrigation, using reuse as the source [c]	≤ 15 mg/L oil and grease ≤ 30 mg/L BOD_5 ≤ 35 mg/L TSS < 200 fecal coliform cfu/100 mL [d]
8. Subsurface ~~infiltration and~~ irrigation, using stormwater as the source [c]	< 15 mg/L oil and grease < 60 mg/L TSS
9. Surface or spray irrigation using stormwater and clearwater as the source [c]	≤ 10 mg/L BOD_5 ≤ 5 mg/L TSS
10. Surface irrigation except food crops, vehicle washing, clothes washing, air conditioning, soil compaction, dust control, washing aggregate, and making concrete [a, c]	pH 6 - 9 [b] ≤ 10 mg/L BOD_5 ≤ 5 mg/L TSS Free chlorine residual 1.0 - 10.0 mg/L[b]

11. Toilet and urinal flushing	pH 6 - 9 [b] 200 mg/L BOD_5 ≤ 5 mg/L TSS Free chlorine residual .1 mg/L - 4.0 mg/L [b]
12. Uses not specifically listed above	Contact department for standards

[a] Refer to the department of agriculture, trade and consumer protection for commercial use.

[b] Applies only to wastewater treatment devices for reuse systems. Other equivalent disinfection methods may be approved by the department.

[c] These requirements do not apply to the treatment of industrial wastewater or other wastewater discharges that are subject to a WPDES permit issued by the department of natural resources.

[d] A 12-inch minimum separation of medium sand or finer material above high groundwater or bedrock.

[f] For stormwater, the plumbing treatment standards are based on an annual average. Evaluation of research to prove compliance with this table is based on the geometric mean of the data acceptable to the department or an equivalent method.

History: CR 02-002: cr. Register April 2003 No. 568, eff. 5-1-03; CR 04-035: am. Table 82.70-1 Register November 2004 No. 587, eff. 12-1-04; CR 08-055: am. Table 82.70-1 Register February 2009 No. 638, eff. 3-1-09; CR 10-064: am. Table 82.70-1 Register December 2010 No. 660, eff. 1-1-11; correction in (4) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Wisconsin Department of Safety and Professional Services

Plumbing Code Advisory Committee Plumbing Code Rule Recommendations for SPS Chapters 381 to 387

(May include revisions to other associated chapters as identified in Scope Statement # 075-16.)

DRAFT – SUBJECT TO CHANGE

THIS DOCUMENT IS NOT A RULE DRAFT OR THE OFFICIAL MEETING MINUTES OF THE PLUMBING CODE ADVISORY COMMITTEE.

Meeting minutes and agendas may be viewed HERE.

Color-coding Key:

Shaded Coloring Key: Green=completed, Yellow=Action Item or needs additional committee discussion, Orange=Clarification needed from DIS.
Peach= Requires DPD and/or DIS follow-up. No committee action needed.
Colored Font Key: Red=Committee recommendations/actions, Blue=committee motions from most recent meeting, Green=DPD rule drafting notes or action items
(Rows in white have not yet been discussed by committee.)

SPS 305 LICENSES, CERTIFICATIONS, AND REGISTRATIONS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
1.	305.94 (3)	Inconsistency between statutes and code.	DPD	**Statutes:** 145.07(6) Applicants for examination for licensure as a journeyman plumber (restricted) *shall have completed one continuous year of work experience consisting of not less than 1,000 hours per year* and give evidence of completion of shop training and related instruction as the department by rule requires. **Administrative Rule:** SPS 305.94(3) QUALIFICATIONS FOR EXAMINATION. A person applying for a journeyman plumber-restricted service license examination shall have met all of the following: (a) ~~At least~~ Completed one continuous year of plumbing-related work experience consisting of not less than 1,000 hours per year ~~of plumbing-related work experience as a registered learner-restricted service~~.		Amend to align administrative rule with statute.

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
1.	381.01 (129m)	Need for enforcement	DIS, Amended by PAC	Create definition: "Imminent health hazard" means a significant threat or danger to health that is considered to exist when there is evidence sufficient to show that a product, practice, circumstance, or event creates a situation that requires immediate correction or	n/a	*5/4/2017 – Motion to adopt with amendments.*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
				cessation of operation to prevent injury or illness based on any of the following: (a) The number of potential injuries or illnesses.~~; and~~ (b) The nature, severity, and duration of the anticipated injury or illness.		
1a.	381.01 (195m)	Creates a definition as included in ch. 305.003 (60)	DIS	SPS 381.01 (195m) is created to read: (195m) "Process piping" means that piping which is separated from a water supply system or drain system by the ~~appropriate~~ acceptable methods or means specified under ch. SPS 382 and is part of a system used exclusively for refining, manufacturing, industrial or shipping purposes of every character and description. Discussion: A 2nd portion should be added that relates to adding an ingredient to a product. Process is not considered a plumbing fixture, which wouldn't require approval, non-potable (i.e. laundry, milling machine), water-using piece of equipment. Process could be potable or non-portable. Beginning and ending point of process. Action Items: DPD & DIS to look for definitions of "Industrial" and "process piping" and "potable processing". Tom to develop language for 2nd portion of definition relating to "ingredients". DPD Action Items completed: IPC and UPC do not contain definitions of the following terms. The below definitions were taken from other sources. "Industrial" means associated with manufacturing, factory, commercial, business, or trade. [Per ASME B31.3] Process piping means piping systems and their component parts, that are not building services or power piping systems, and that may be installed in petroleum refineries, chemical, pharmaceutical, textile, paper, semiconductor, and cryogenic plants, and related processing plants and terminals. "Potable water processing" means the act or process of removing impurities to make water more potable or useful, as by purifying, clarifying, or disinfecting.		*3/20/2018 – Motion to table until language provided for 2nd part of definition.* *5/30/2018 – DPD to search for definitions in IPC & UPC* *8/7/2018 - Motion to adopt definition.*
1a1.	381.01 (17e)	Consistency	DIS	"Backflow preventer" means any generic backflow prevention method, device, or assembly.	n/a	*10/17/2018 - Motion to adopt.*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
1b.	381.01 (18)	Revise	DIS	"Backflow preventer with an intermediate atmospheric vent" means a ~~type of~~ cross connection control device ~~which consists of~~ having 2 independently ~~acting~~ operating check valves~~,~~ separated by an intermediate chamber with a means for automatically venting it to the atmosphere and can be installed in the horizontal, vertical up or vertical down orientations. The check valves are ~~internally~~ force~~–~~loaded to a normally closed position and the venting means is force loaded to ~~separated by an intermediate chamber with a means for automatically venting to atmosphere where the venting means is internally force–loaded to~~ a normally open position. ~~The terms "backflow preventer" or "dual check valve type with atmospheric port backflow preventer" has the same meaning as backflow preventer with intermediate atmospheric vent.~~	n/a	*8/7/2018 - Motion to adopt definition as amended.*
1b1.	381.01 (39)	Amend to clarify for licensing parameters	DIS	"Building drain" means horizontal piping within or under the fully enclosed portion of a building ~~building's foundation perimeter,~~ installed below the lowest fixture or the lowest floor level from which fixtures can drain by gravity to the building sewer. 10/17/2018 Discussion: Need additional consideration of porches, decks, footings, etc.	n/a	*10/17/2018 - Motion to table. Ryan to bring back additional information.* *11/6/2018 – Motion to adopt as amended.*
1b2.	381.01 (44)	Amend to clarify for licensing parameters	DIS	"Building sewer" means that part of the drain system not within or under the fully enclosed portion of a building which ~~building's foundation perimeter that~~ conveys its discharge to a public sewer, private interceptor main sewer, private onsite wastewater treatment system, or other point of discharge or dispersal.	n/a	*10/17/2018 - Motion to table. Ryan to bring back additional information.* *11/6/2018 – Motion to adopt as amended.*
1b2a.	381.01 (50e)	Create new definition.	DIS	(50e) "Campground or recreational vehicle park drain system, sanitary" means all piping or any portion thereof, within public or private premises, that conveys domestic wastewater from a campground or recreational vehicle park.		*4/3/2019 – Motion to*
1b2b.	381.01 (50m)	Create new definition.	DIS	(50m) "Campground or recreational vehicle park drain system, storm" means all piping or any portion thereof, within public or private premises, that conveys any of the following: (a) Storm water from a campground or recreational vehicle park. (b) Groundwater from a campground or recreational vehicle park. (c) Clear water from a campground or recreational vehicle park.		*4/3/2019 – Motion to*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
1b2c.	381.01 (50s)	Create new definition.	DIS	(50s) "Campground or recreational vehicle park water supply system" means the piping through which potable water is conveyed to points of usages intended to serve sites in a campground or recreational vehicle park.		*4/3/2019 – Motion to*
1b3.	381.01 (65m)	Amend for consistency and to better differentiate between method, device, and assembly.	DIS	"Cross connection control assembly" means a ~~testable backflow preventer consisting of an arrangement of components~~ mechanical backflow preventer used to prevent backflow into a water supply system that requires shut-off valves and a test cock or test cocks to meet any specific standard, such as a reduced pressure principle backflow preventer, a double check backflow preventer, a pressure vacuum breaker, ~~and~~ or a spill resistant vacuum breaker.	n/a	*10/17/2018 - Motion to adopt as amended.*
1b4.	381.01 (66)	Amend for consistency and to better differentiate between method, device, and assembly.	DIS	"Cross connection control device" means ~~any mechanical device which automatically prevents backflow from a contaminated source into a potable water supply system~~ a mechanical backflow preventer used to prevent backflow into a water supply system that does not require shut-off valves or a test cock or test cocks in meeting any specific standard, such as an atmospheric type vacuum breaker, a hose connection vacuum breaker, ~~and~~ or a backflow preventer with an atmospheric vent.	n/a	*10/17/2018 - Motion to adopt as amended.*
1b5.	381.01 (66m)	Create new definition for consistency and to better differentiate between method, device, and assembly.	DIS	"Cross connection control method" means a mechanism used to prevent backflow into a water supply system other than a backflow prevention device or backflow prevention assembly, such as an air gap, ~~and~~ vacuum breaker tee, or barometric loop.	n/a	*10/17/2018 - Motion to adopt as amended.*
1c.	381.01 (73m)	Create new definition Commercial ASSE 1005, NSF 3 Residential NSF 184 Definition amended to align with terminology used in	DIS	"Commercial dishwashing machine" means a machine or appliance that is designed and constructed for use other than for household use. Amended to include sub-definitions of commercial- and residential-type under the main "Dishwashing machine" definition (as shown below): SPS 381.01 (73m) "Dishwashing machine" means a commercial- or residential-type appliance as defined in pars. a and b. (73m) (a) Commercial-type" means a machine or appliance that is designed and constructed for use other than a residential-type which mechanically washes, rinses, and sanitizes ~~dishware~~ dishes or utensils. (73m) (b) "Residential-type" means a home-type machine or appliance that mechanically ~~with the aid of water, automatically~~ washes, rinses, and ~~includes a drying~~		*8/7/2018 – Motion to adopt as amended.* *10/17/2018 - Motion to adopt the additional amendments (in green).*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
		standards and to comply with drafting style rules.		~~process for dishware~~ dries dishes or utensils ~~by a chemical, mechanical, or electrical means,~~ and discharges to the plumbing drainage system. **Note:** A residential-type dishwasher may also be referred to as a household dishwasher but is not limited to the installation in a one- or 2-family dwelling. The intended use of the dishwasher dictates if the appliance is considered commercial or residential.		
1d.	381.01 (79)	Revise	DIS	"Double check backflow prevention assembly" means a ~~type of~~ cross connection control assembly ~~which is composed~~ consisting of 2 independently acting check valves, internally force~~–~~loaded to a normally closed position, 2 tightly closing shut−off valves that are properly located, and test cocks that are properly located. ~~located at each end of the assembly and fitted with test cocks. The term "double check valve backflow preventer" has the same meaning as double check backflow prevention assembly.~~ Discussion: Consider allowing ASSE 1015 standard to expand application beyond fire suppression to include application on low-hazard to add to the Table. Ryan to bring back verbiage.	n/a	*8/7/2018 - Motion to adopt as amended.*
1d1.	381.01 (108s)	Amend to reflect terminology in the standard	DIS	"Freeze resistant sanitary yard hydrant with backflow protection" 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~~ typically installed with a portion below ground surface, to supply potable water without danger of damage to the device due to freezing, and to provide protection of the potable water supply and ground water from contamination due to back-siphonage or back-pressure.	n/a	*10/17/2018 - Motion to adopt.*
1e.	381.01 ~~(116)~~ (115m)	Revise	DIS	~~(116)~~ (115m) "Health care ~~and related~~ facility" means a hospital, nursing home, community−based residential facility, ~~county~~ home, infirmary, inpatient mental health center, inpatient hospice, or an ambulatory surgery center~~, adult daycare center, end stage renal facility, facility for the developmentally disabled, institute for mental disease, urgent care center, clinic or medical office, residential care center for children and youth or school of medicine, surgery or dentistry as defined in pars. (a) to (d).~~ ~~DPD: Renumber 380.01 (7m) to 381.01 (116) (a) [or repeal and create] to read: (7m) (116) (a) "Ambulatory surgery center" has the meaning given under 42 CFR 416.2.~~ ~~DPD: Renumber 381.01 (60e) to 381.01 (116) (b) and amend to read: (60e) (116) (b) "Community-based residential facility" or "CBRF" has the meaning specified given under s. 50.01 (1g), Stats.~~	n/a	*8/7/2018 - Motion to adopt as amended.* *9/6/2108 - Create sub-definitions for the facilities listed under the terms health care facility [1(e)] and health care related facility [1f].*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
				~~(116) (c) "Hospital" has the meaning given under s. 50.33 (2), Stats.~~ ~~DPD: Renumber 381.01 (163e) to 381.01 (116) (d) and amend to read:~~ ~~(163e) (116) (d) "Nursing home" has the meaning specified given under s. 50.01 (3), Stats.~~ 8/7/2018 Discussion: This term aligns with the definition in the commercial building code as amended in the last code package. Based on discussion under item #1f., recommendation to consider definitions based on level of service. [DPD Note: Do not create additional definitions under health care facility definition.]		*10/17/2018 - Motion to adopt as amended.*
1f.	381.01 (116m)	Create new definition	DIS, amended by PAC	(116) "Health care related facility" means an assisted living, residential care apartment complex, memory care, ~~county home,~~ infirmary, inpatient mental health center, inpatient hospice, adult day care center, ~~end stage~~ renal ~~facility~~ dialysis center, facility for the developmentally disabled, institute for mental disease, urgent care center, medical clinic or office, dental clinic or office, residential care center for children and youth, or school of medicine, surgery, or dentistry. ~~If the facility is not within as defined in pars (a) to (o).~~ ~~(116m) (a) "Adult day care center" means a facility that provides services for part of a day in a group setting to adults who need assistance with activities of daily living, supervision, or protection. An adult day care facility is a type of assisted living facility.~~ ~~(116m) (b) "Assisted living facility" means a facility that provides a residence for individuals who need some level of care monitoring services.~~ ~~(116m) (c) "Dental clinic" or "dental office" means a building or a space within a building that provides outpatient dental services.~~ ~~(116m) (d) "End stage renal disease facility" or "ESRD facility" means a facility that provides outpatient maintenance dialysis services. The ERSD facility may be either a hospital-based or an independent facility.~~ ~~(116m) (e) "Facility for the developmentally disabled" of "FDD" has the meaning given under DHS 134.13 (13).~~ ~~(116m) (f) "Infirmary" means an institution or a space within a larger building where sick or injured individuals receive care and treatment.~~ ~~(116m) (g) "Inpatient hospice" means a facility where the patient lives as defined under s. 50.90 (1), Stats., that primarily provides palliative and supportive care to individuals with terminal illness.~~ ~~(116m) (h) "Inpatient mental health center" or "inpatient facility" has the meaning given under s. 51.01 (10), Stats.~~		*8/7/2018 - Motion to table.* *9/6/2018 – Motion to strike "county home" from definition and adopt as amended.* *9/6/2108 - Create sub-definitions for the facilities listed under the terms "health care facility" and "health care related facility".* *10/17/2018 - Motion to table.* *11/6/2018 - Consensus to not create additional definitions under "health care related facility".*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
				~~(116m) (i) "Institute for mental disease" or "Mental health institute" has the meaning given under s. 51.01 (12), Stats.~~ ~~(116m) (j) "Medical clinic" or "medical office" means a building or a space within a building that provides outpatient medical care.~~ ~~(116m) (k) "Memory care facility" means a facility or space within a facility that provides inpatient care to patients with dementia, alzheimer's disease, or other types of memory problems.~~ ~~(116m) (L) "Residential care apartment complex" has the meaning given under s. 50.01 (6d), Stats.~~ ~~(116m) (m) "Residential care center for children and youth" has the meaning given under s. 48.02 (15d), Stats.~~ ~~(116m) (n) "School of medicine, surgery, or dentistry" means an educational institution or space within an institution or facility that teaches medicine, surgery, or dentistry.~~ ~~(116m) (o) "Urgent care center" means a facility or a space within a facility that provides outpatient medical care for ambulatory patients with minor illnesses or injuries.~~ 8/7/2018 Discussion: Similar and exchangeable terms are used in both definitions of "health care facility" and "health care related facility". How are they differentiated? Suggestion to check with DHS and define each of the terms based on level of service vs. listing the various facilities in the definitions. 11/6/2018 - DPD/DIS to propose language that clarifies that requirements for the facility will be dependent upon the licensure of the umbrella facility. Provision to be located under 382.50? [Complete]		
1g.	381.01 (117)	Revise	DIS, Amended by PAC	"Health care plumbing appliance" means a plumbing appliance, the function of which is unique to health care activities <u>to which a patient is</u> ~~directly and intimately~~ <u>exposed.</u> Discussion: Appliances that need product approval.	n/a	*8/7/2018 - Motion to adopt as revised.*
1ga.	381.01 <u>(153e)</u>	Create new definition.	DIS	(153e) "Manufactured home community drain system, sanitary" means all piping or any portion thereof, within public or private premises, which conveys domestic wastewater from a manufactured home in a manufactured home community.		*4/3/2019 – Motion to*
1gb.	381.01 <u>(153m)</u>	Create new definition.	DIS	(153m) "Manufactured home community drain system, storm" means all piping or any portion thereof, within public or private premises, that conveys any of the following: (a) Storm water from a manufactured home community. (b) Groundwater from a manufactured home community. (c) Clear water from a manufactured home community.		*4/3/2019 – Motion to*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
1gc.	381.01 (153s)	Create new definition.	DIS	(153s) "Manufactured home community water supply system" means the piping through which potable water is conveyed to points of connection to a manufactured home or homes in a manufactured home community.		*4/3/2019 – Motion to*
1g1.	381.01 (172) – renumber to 381.01 (13m)	Revise to reflect terminology in the standard	DIS	Renumber SPS 381.01 (172) to 381.01 (13m) and amend to read: ~~(172)~~ (13m) "~~Pipe applied atmospheric~~ Atmospheric type vacuum breaker" means a type of cross connection control device where the flow of water into the device causes a float to close an air inlet port and when the flow of water stops the float falls and forms a check valve against back-siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum.		*10/17/2018 - Motion to adopt.*
1g2.	381.01 (189)	Update definition to match the description provided in the ASSE 1020 standard.	DIS	(189) "Pressure vacuum breaker ~~assembly~~" means a type of cross connection control 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 "pressure vacuum breaker" has the same meaning as pressure vacuum breaker assembly~~ an independently acting check valve force loaded to the closed position and an independently acting air inlet valve located downstream of the check valve that is force loaded to the open position. The assembly also includes two tightly closing shutoffs, one at the inlet of the assembly and one at the outlet of the assembly, and two tightly closing test cocks one immediately upstream and one immediately downstream of the check valve.		*10/17/2018 - Motion to adopt.*
1g3.	381.01 (193g)	Create new definition. Currently, there are definitions for building sewer, sanitary and building sewer, storm but only private interceptor main sewer (193)	DIS	(193g) "Private interceptor main sewer, sanitary" means a building sewer, sanitary serving 2 or more buildings and not part of the municipal sewer system. For reference, SPS 381.01 (193) reads: "Private interceptor main sewer" means a sewer serving 2 or more buildings and not part of the municipal sewer system.		*4/3/2019 – Motion to*
1g4.	381.01 (193r)	Create new definition	DIS	(193r) "Private interceptor main sewer, storm" means a building sewer, storm serving 2 or more buildings and not part of the municipal sewer system.		*4/3/2019 – Motion to*
1h.	381.01 (204)	Revise	DIS, Amended by DPD	"Reduced pressure principle backflow preventer" means~~, as defined in ASSE 1013~~, a ~~type of~~ cross connection control assembly ~~which contains~~ consisting of 2 independently- acting check valves, internally force loaded to a normally closed position and separated by an intermediate chamber (or zone) in which there is a hydraulically operated relief means for venting to atmosphere, internally force loaded		*8/7/2018 - Motion to adopt as revised.*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
				to a normally open position. These assemblies are designed to operate under continuous pressure conditions. The assembly shall ~~and includes~~ include 2 properly located, tightly closing shut–off valves and ~~4~~ properly located test cocks. ~~OR **Repeal and recreate** *to read:*~~ ~~"Reduced pressure principle backflow preventer assembly" means an assembly containing two independently acting, approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time, below the first check valve. The unit shall include properly located test cocks and tightly closing shutoff valves at each end of the assembly.~~		
1i.	381.01 ~~(205m)~~	Create	DIS, Amended by DPD, further amended by PAC	Residential Use (Household) Dishwasher means, an appliance which, with the aid of water, automatically washes, rinses and dries (where drying process is included) dishware, glassware and cutlery and most cooking utensils by chemical, mechanical, or electrical means and discharges to the plumbing drainage system. The installation of a residential use (household) dishwasher is not limited to a one- or 2-family dwelling, intended usage dictates if the appliance is considered residential or commercial. Recommended Revision: "Residential-type dishwasher" means an appliance that with the aid of water, automatically washes, rinses, and includes a drying process for dishware and utensils by a chemical, mechanical, or electrical means and discharges to the plumbing drainage system. **Note:** A residential-type dishwasher may also be referred to as a household dishwasher but is not limited to the installation in a one- or 2-family dwelling. The intended use of the dishwasher dictates if the appliance is considered residential or commercial.		*See Item 1c. "Residential" was moved as a sub under "dishwashing machine" and revised as shown in 1c.*
1i1.	381.01 (231m)	Update to match description in ASSE 1056.	DIS	"Spill resistant vacuum breaker" means a cross connection control ~~device~~ assembly consisting of one check valve force loaded closed~~,~~ and an air inlet force loaded open to atmosphere located downstream of the check valve~~,~~. ~~2 shutoff~~ The assembly also includes 2 tightly closing shut-off valves and 2 test cocks or a no. 1 test cock and a bleed valve.		*10/17/2018 - Motion to adopt.*
1i1a.	381.01 (256m)	Create new definition. This is already described in 382.50(3)(b)6.a.,	DIS	(256m) "Thermal disinfection" means a method of providing bacterial control within a water distribution system using water that is heated and initially circulated to a minimum temperature of 140°F and with a minimum temperature of 124°F at the point of return to the heat source.		*4/3/2019 – Motion to*

SPS 381 DEFINITIONS AND STANDARDS						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
		just not defined using a specific term.				
1i2.	381.01 (280)	Amend for clarification for licensing parameters	DIS	"Water distribution system" means that portion of a water supply system from ~~located downstream of~~ the outlet of the building control valve to the connection of a fixture supply connector, plumbing fixture, plumbing appliance, water−using equipment, or other piping systems to be served.		*10/17/2018 - Motion to adopt as amended.*
1j.	381.01 (281m)	Create new definition and note	DIS	"Water operator−in−charge" means the person designated by the owner of the building waterworks to be directly responsible for the day−to−day operations of the waterworks. Note: Per NR 114.03(15), "waterworks" means a community water system owned by, or a private utility serving, a county, city, village, town, town sanitary district, utility district or a county−owned or state−owned public institution for congregate care or correction, which includes but is not limited to correctional institutions, correctional camp systems, county jails or houses of correction, mental health institutes, schools for the handicapped, hospitals, infirmaries and asylums. 8/7/2018 Discussion: CMS requires water management. Q: Does this require person to be certified or permitted or obtain CEs? A. No		8/7/2018 - *Motion to adopt w/note.*
1k.	381.01 (282)	Amend for clarification for licensing parameters	DIS	"Water service" means that portion of a water supply system from the water main or private water supply up to and including the building control valve.		*10/17/2018 - Motion to adopt.*
1L.	381.01 (288s)	Create new definition to incorporate term used in rule. Clarifies if yard hydrant installed, it shall meet ASSE 1057.	DIS	"Yard hydrant" means a device with a water supply outlet~~,~~ or faucet~~,~~ that has a valve control and outlet above ground and a connection to the water supply system below ground.	N/A	*10/17/2018 - Motion to adopt.*
2.	381.20	Outdated standards	DIS	Update standards: Tables 381.20-1 to 381.20-13 DPD Action Items Completed • Standards in Tables 381.20-1 to 13 updated to reflect most current version. • All standard developing organizations (SDOs) have been contacted to request complimentary copies of standards.		5/4/2017 - Committee to complete review of standards. 10/10/2017: DPD to set up link to Dropbox to share

SPS 381 DEFINITIONS AND STANDARDS						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				• All electronic copies of standards received thus far from SDOs have been uploaded to Dropbox and made available for committee member review. 8/7/2018 Discussion: Tables containing recommended standards for adoption or re-adoption will be provided to committee and acted upon at future meeting. 8/7/2018 Action Item: Committee to review all standards in the Dropbox prior to the next meeting and request DPD to provide any additional information needed to complete comprehensive review of standards.		standards for committee review. 3/20/2018: Update given to committee re: accessibility of standards.
3.	381.20-4 *Change to* 382.41 – 1	Mitigate problems for contractors & occupants.	Stake-holder	Proposal to adopt A.S.S.E. 1081-2014 for the purpose of supplying water to a boiler system while preventing low hazard backpressure and low hazard backsiphonage to the potable water system. Would allow for a single device to serve as both a fill valve and a cartridge style, dual check backflow preventer.	Minimal	*5/4/2017 – Motion to table*. Currently no language in code that allows inspector to accept these devices. *6/14/2017 – Motion to accept A.S.S.E. 1081 and place in the appropriate provisions in SPS 381.20 and add to Table 382.41-1 under 382.41 (3) (a).*

SPS 382 DESIGN, CONSTRUCTION, INSTALLATION, SUPERVISION, MAINTENANCE, AND INSPECTION OF PLUMBING						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
4.	382.10 (2) (b)	Changes with introduction of SPS 327	DIS Amended by PAC	382.10(2)(b) To fulfill the basic needs of sanitation and personal hygiene, each dwelling <u>with the exception of camping</u> ~~cabins~~ <u>units,</u> connected to a POWTS or public sewer shall be provided with at least the following plumbing fixtures: one water closet, one wash basin, one kitchen sink and one bathtub or shower, except a system or device recognized under ch. SPS 391 may be substituted for the water closet. All other		*5/4/2017 – Motion to adopt with amendments.* *5/4/2017 – Motion to create note to reflect*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
			PAC	structures for human occupancy shall be equipped with sanitary facilities in sufficient numbers as specified in chs. SPS 361 to 366. Rule-making project for camping units created a definition for camping unit. See 381.01 (50g). [SPS rules relating to camping units & UDC.]		*definition of "camping unit" in SPS 327.*
5.	382.20 (1) (a)	The changes in public health care related to CBRFs and inpatient hospice find that the review of the plumbing components have become complex and are treated similar to hospitals and nursing homes.	DIS	SPS 382.20(1)(a) *Department review.* Plumbing plans and specifications for the types of plumbing installations, except direct replacements, listed in Table 382.20−1 shall be submitted to the department for review, regardless of where the installation is to be located. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing. (Table 382.20-1) 1. All plumbing, new installations, additions and alterations, regardless of the number of plumbing fixtures involved, serving hospitals, nursing homes, ambulatory surgery centers, renal dialysis centers, community−based residential facilities (CBRF), and inpatient hospice. [a] 5/4/17 Discussion: Includes all CBRFs – no distinction between small and large. Applicability same as hospitals. If replacing fixtures, needs to be the same as original. [Completed] DPD & DIS to develop language to incorporate new pre-approval process.		*5/4/2017 – Motion to adopt. One opposed.* [Definition of municipality includes counties.]
5a.	382.20 (1) (a) (b) and create (bm)	Permission to start	DIS	Amend (a) and (b) and create (bm). (a) Add: except as provided in (bm) (b) Add: except as provided in (bm) Create (bm)		*10/10/2017 - Motion to amend (a) and (b) and create (bm).*
5a1.	382.20 (1) (a)	Revise	DIS	(a) *Department review.* Plumbing plans and specifications for the types of plumbing installations, except direct fixture replacements, listed in Table 382.20−1 shall be submitted to the department for review, regardless of where the installation is to be located. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing.	n/a	*8/7/2018 – Motion to adopt.*
5a1.1	382.20 (1) (b)	Amend to provide options	DIS	(b) *Department or agent municipality review.* 1. Plumbing plans and specifications for the types of plumbing installations, except direct fixture replacements, listed in Table 382.20−2 ~~shall~~ may be submitted for review to an agent municipality~~,~~ if the installation is to be located within the agent municipality or to the department~~, if the installation is~~	Less restrictive - Allows flexibility	*10/17/2018* Motion to table.

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				~~not to be located within an agent municipality~~. A municipality shall be designated as an agent municipality in accordance with sub. (2). Written approval for the plumbing plans shall be obtained prior to installation of the plumbing. Discussion: DPD/DIS to seek legal counsel: How does this relates to municipalities that have more restrictive ordinances?		*11/6/2018 – Motion to adopt.*
5a2.	382.20 (1) (c)	Revise	DIS	Cross connection control assembly registration. The installation of each reduced pressure principle backflow preventer, reduced pressure <u>principle</u> fire protection ~~principle~~ backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly or pressure vacuum breaker shall be registered with the department no later than 7 days after installation of the assembly. 8/7/2018 Discussion: What is considered installation? Is that considered after installation or when system is turned on. Or after it's tested?	n/a	*8/7/2018 – Motion to adopt.*
5b.	Table 382.20-1, 1.		DIS	All plumbing, new installations, additions, and alterations, regardless of the number of plumbing fixtures involved, serving hospitals, nursing homes and ambulatory surgery centers, CBRFs, hospice facility, or renal dialysis ~~facility~~ center.[a,c] 3/20/18 Action Item: Tom to check with DHS code – definitions of facility, ambulatory surgical center, health care and related facility. DHS doesn't define all terms.] Adding to table, amending definition. [complete] 5/30/18 Action Item: DPD to research IPC, UPC, and neighboring states. [complete] 5/30/2018 Discussion: Dental office is considered a related HC facility, any room where (human) medical examinations (not chiropractor, optometrist). Q. What is not considered "Related facility" or healthcare? A. doctor's office medical exam room. May need to develop new definition for healthcare facility. See CBC code. DHS taking over plan review of CBRFs. 8/7/2018 - Note to DPD: Amend CBRF definition to include acronym. For consistency, amend other provisions using this term. Locate term/definition for dialysis.	Minimal: life safety issue	*3/20/2018 - Motion to table.* 5/30/2018 - Discussed. Still need additional information. *8/7/2018 – Motion to adopt.*
5b1.	Table 382.20-1, 5.	Revision #1	DIS	Reduced pressure principle backflow preventers, reduced pressure <u>principle</u> fire protection ~~principle~~ backflow preventers, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, and spill resistant vacuum breakers serving health care ~~and related~~ facilities.	n/a	*8/7/2018 – Motion to adopt.* *10/17/2018 Motion to adopt Revision #2.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		Revision #2		Revised from previously adopted version: 5. Reduced pressure principle backflow preventers, ~~reduced pressure fire protection principle~~ double check backflow ~~preventers~~ prevention assemblies, pressure vacuum breaker assemblies, ~~reduced pressure detector fire protection backflow prevention assemblies~~, and spill resistant vacuum breakers serving health care ~~and related~~ facilities. DIS explanation: Years ago, the Department did not require the double check backflow prevention assemblies to be submitted and registered because they were only allowed of fire suppression systems and those systems were tested annually. The testing documentation is attached to the system, so it is available to the fire inspector. Recommend that this theory be the same for any assembly serving fire suppression. Revision #2 adds "double check backflow prevention assemblies" that are not on fire suppression systems. Currently, definitions are provided for assemblies on fire suppression systems verses those that are not. Note to DIS: Amend table 20-2 for healthcare related facilities.		
5b2.	Table 382.20-1, 6.	Revise, Water quality issue	DIS	Stormwater and clearwater detention, treatment, and infiltration plumbing systems serving a public building or facility.[C]	Minimal	*8/7/2018 – Motion to adopt.*
5b3.	Table 382.20-1, 8.	Create new, Life safety issue	DIS	Potable water storage systems.	Minimal	*8/7/2018 – Motion to adopt.*
5b4.	Table 382.20-1, 9.	Create new, Life safety issue	DIS	Potable water treatment systems designed to treat or maintain water for compliance with Table 382.70−1.	Minimal	*8/7/2018 – Motion to adopt.*
5b5.	Table 382.20-1, 10.	Create new, Life safety issue, to protect water supply used for public consumption Create footnote d.	DIS, amended by PAC	Potable water treatment by use of injection of a solution into the water supply system.[d.] [d.] Excludes one- and 2-family dwellings. Discussion: Includes all water systems, including residential. Water systems are currently not being monitored. Injecting chlorine, byproducts without being checked. Committee concern: This could significantly increase plans going to the state. Add footnote or amend to mean water system that does not go downstream of the water treatment device? Not needed.	Minimal	8/7/2018 – Motion to adopt as revised. *Footnote d. added.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
5b6.	Table 382.20-1, 11.	Create new, Life safety issue	DIS	Medical or high purity water. Action Item: DIS to create definition for medical and high purity water.	Minimal	*8/7/2018 – Motion to adopt.*
5b7.	Table 382.20-1, 12.	Create new, Life safety issue	DIS	Mixed wastewater holding device.[c] Note to DPD: Repeal #10 from table 2. [Complete]	Minimal	*8/7/2018 – Motion to adopt as revised (footnote added).*
5b8.	Table 382.20-1, 13.		DIS	Multipurpose piping systems (MPP).[d]	Minimal	*8/7/2018 – Motion to adopt as revised (footnote added).*
5b8.1	Table 382.20-1, Footnote a.	Revise note, Registration is required for assemblies, not devices.	DIS	[a.] The registration of cross connection control ~~devices~~ assemblies as required under s. SPS 382.20 (1) (c) is included as a part of plan review and approval.	n/a	*10/17/2018 Motion to adopt.*
5b9.	382.20 (2) create (d)	Revise existing to include changes from legislation	DIS	AGENT MUNICIPALITIES. The department may designate to an approved municipality the authority to review and approve plumbing plans and specifications for those plumbing installations to be located within the municipality's boundary limits and which require approval under sub. (1) (b). (a) An agent municipality shall utilize a plumbing inspector qualified by the department to conduct plumbing inspection and plan review at a staffing level based on local need. 1. The primary duties of the plumbing inspectors shall include plumbing plan review. 2. The plumbing inspectors shall be Wisconsin licensed master or journeyman plumbers. **Note:** For a listing of agent municipalities, see Appendix A−382.20 (2) or ~~http://~~dsps.wi.gov~~/Documents/Industry%20Services/Forms/Plan%20Review/Industry%20Services%20Division%20Plumbing%20Agent%20Municipalities.pdf.~~ (b) An agent municipality may waive its jurisdiction for plan review and approval for any project, in which case plans shall be submitted to the department for review and approval. (c) Agent municipalities may set by ordinance the fees for plan review services. (d) Agents municipality appointment shall be renewed every five years. (See 2017 Wis. Act 198 relating to agent appointments.)		*8/7/2018 – Motion to adopt.*
5b 10.	382.20 (2m)	Create new section,	DIS	The department may grant approval for a permission to start. This approval permits in lieu of requirements specified in SPS 382.20 (a) and (b). A building owner may request and the department or its authorized representative may grant permission to start the	Less restrictive	*8/7/2018 – Motion to adopt as revised.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		Permission to start Taken from current alternate approval process		installation of plumbing, to a maximum height of 18 inches above proposed finished floor elevation, upon submission of construction documents under s. SPS 382.20 (4) and application where a scheduled plan review date is greater than 10 business days. (a) The plumbing installations are limited to any of the following: 1. Water service, private water main. 2. Sanitary sewer, private interceptor main sewer. 3. Storm sewer. 4. The interior underfloor building drain, waste, and vent 5. The interior underfloor water distribution. 6. The interior underfloor storm/clearwater building drain. (b) Permission to start will not include healthcare facilities as defined in SPS 381.01(116) or storm infiltration, detention, or retention. (c) The department shall review and make a determination on an application for permission to start the installation of subsurface plumbing within 5 business days of receipt of the application and all forms, fees, construction documents, and information required to complete the review. (d) A building owner who has been granted permission to start plumbing installations may proceed at the owner's own risk without assurance that a conditional approval for the plumbing will be granted. A building owner shall be held responsible for any changes required after plans have been reviewed, and to remove or replace any non-code complying plumbing installations. (e) The provisions of SPS 382.21 apply.		
6.	382.20 (4) (b) ~~2.~~ 1m	Water Quality Management s letters delays plan review. DNR issue and should be regulated by local municipality.	DIS	Repeal 382.20(4)(b)2, 3 & 4, Create 1m Plans proposing the installation, creation or extension of a sanitary private interceptor main sewer which is to discharge to a municipal treatment facility shall: a. Be accompanied by a letter from the appropriate designated planning or management agency indicating conformance with an approved area wide water quality management plan under ch. NR 121; 5/4/17 Discussion: This is a local issue. Waiting for letter is holding up plans and permits.	Eliminates the need to expend resources	*5/4/2017 – Motion to adopt.*
6.01	382.20 (13)	Amend title for consistency	DIS	(13) CROSS CONNECTION CONTROL ASSEMBLY REGISTRATION.	n/a	*10/17/2018 Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
6.02	382.20 (13) (b)	Registration not required for devices.	DIS	The form for registering cross connection control ~~devices and~~ assemblies with the department shall include at least all of the following information:	n/a	*10/17/2018 Motion to adopt.*
6.03	382.20 (13) (b) 1.	Registration not required for devices.	DIS	The building or facility name and address where the ~~device or~~ assembly is or will be installed.	n/a	*10/17/2018 Motion to adopt.*
6.04	382.20 (13) (b) 2.	Registration not required for devices.	DIS	The location of the cross connection control ~~device or~~ assembly within the building or facility.	n/a	*10/17/2018 Motion to adopt.*
6.05	382.20 (13) (b) 3.	Registration not required for devices.	DIS	description of the cross connection control ~~device or~~ assembly including the size, model number, serial number, and manufacturer.	n/a	*10/17/2018 Motion to adopt.*
6.06	382.20 (13) (d)	Registration not required for devices.	DIS	Upon receipt of a completed registration form, the department shall issue written confirmation of registration including a department-assigned identification number for each cross connection control ~~device or~~ assembly.		*10/17/2018 Motion to adopt.*
6a.	382.20 (13) (e)	Revision #1 Revision #2 – Amend to be consistent with SPS Table 382-1 5.	DIS	Upon permanent removal or replacement of any reduced pressure principle backflow preventer, reduced pressure principle fire protection ~~principle~~ backflow preventer, spill resistant vacuum breaker, reduced pressure detector fire protection backflow prevention assembly, or pressure vacuum breaker, the owner shall notify the department in writing using a format acceptable to the department. Revised from previously adopted version: Upon permanent removal or replacement of any reduced pressure principle backflow preventer, ~~reduced pressure fire protection principle~~ double check backflow ~~preventer~~ prevention assembly, spill resistant vacuum breaker, ~~reduced pressure detector fire protection backflow prevention assembly,~~ or pressure vacuum breaker, the owner shall notify the department in writing using a format acceptable to the department.	n/a	*8/7/2018 – Motion to adopt [revision #1].* *10/17/2018 Motion to adopt Revision #2.*
6b.	382.20 (13) create (f)	Create f. Standard recommends annual testing	DIS	(13) f. The testing and calibration of test equipment shall be performed annually.	Minimal	*8/7/2018 – Motion to adopt.*
6c.	382.21(1)	Revise	DIS	**Testing and inspection. (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 and inspected as specified in sub. (2) to disclose leaks and defects before the plumbing is put into operation.	n/a	*8/7/2018 – Motion to adopt.*

<table>
<tr><th colspan="7">SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing</th></tr>
<tr><th>NO.</th><th>Rule provision</th><th>Issue/Reason for change</th><th>proposed by</th><th>Existing Language and Proposed change</th><th>Potential Impact/Cost</th><th>Comments/Status</th></tr>
<tr><td>7.</td><td>382.21 (1) (b)</td><td>Misconception that testing is only required when there's a local inspector</td><td>DIS Amended by PAC</td><td>(b) ~~Local inspection.~~ Inspections. Where ~~the~~ plumbing is installed ~~in a municipality having a local inspector~~, the testing of the plumbing shall be done in the presence of a plumbing inspector, except as provided in subd. 1. b.</td><td></td><td>5/4/2017 – Motion to adopt with amendments.</td></tr>
<tr><td>7a1.</td><td>382.21 (1) (b) 2.</td><td>Add to existing language. Extra time may be required for these types of inspections.</td><td>DIS</td><td>'Preparations for inspection.' When the installation is ready for inspection, the plumber shall make such arrangements as will enable the plumbing inspector to inspect all parts of the plumbing system. The plumber shall have present the proper apparatus and appliances for making the tests, and shall furnish
such assistance as may be necessary in making the inspection. Inspections required in a confined space may require additional fees as specified in SPS 302.04.</td><td>Potential increased hourly rates in accordance with fee schedule I SPS 302.</td><td>8/7/2018 – Motion to adopt.</td></tr>
<tr><td>7a.</td><td>382.22 (7)</td><td></td><td>DIS</td><td>(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 in accordance with s. 384.40.
~~Abandoned non-removable traps shall be disconnected from an active drain system.~~

Discussion: Consider changing "properly" to water-tight air tight.</td><td></td><td>3/20/2018 – Motion to adopt as amended and reject the underlined portion relating to abandoned traps.</td></tr>
<tr><td>7b.</td><td>Table 382.22-1, column 1</td><td>Revise</td><td>DIS</td><td>Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection ~~Principle~~ Backflow Preventers
ASSE 1013</td><td></td><td>8/7/2018 – Motion to adopt.</td></tr>
<tr><td>7c.</td><td>Table 382.22-1</td><td>Revise for consistency, removed requirement of assemblies serving fire systems.</td><td>DIS</td><td>Table 382.22-1
Testing ~~And~~ and Submitting Requirements ~~For~~ for Cross Connection Control Assemblies
<table>
<tr><th>ASSE Standard Name and Number</th><th>CAN/CSA Standard Name and Number</th><th>ASSE Test Standard Number and Test Required</th><th>Test Results to be Submitted to Department</th></tr>
<tr><td>Double Check Backflow Prevention Assemblies ASSE 1015</td><td>Double Check Valve Backflow Preventers CAN/CSA B64.5</td><td>5015</td><td>Yes</td></tr>
<tr><td>~~Double Check Backflow Prevention Assemblies and~~ Double Check Fire</td><td>~~Double Check Valve Backflow Preventers CAN/CSA B64.5 and~~ Double Check Valve</td><td>5015</td><td>No</td></tr>
</table></td><td>n/a</td><td>10/17/2018 Motion to adopt as revised.</td></tr>
</table>

<table>
<tr><th colspan="7">SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing</th></tr>
<tr><th>NO.</th><th>Rule provision</th><th>Issue/Reason for change</th><th>Proposed by</th><th>Existing Language and Proposed change</th><th>Potential Impact/Cost</th><th>Comments/Status</th></tr>
<tr><td></td><td></td><td>Also see 7b. (7b was previously adopted and now being incorporated into table but revised to reflect the accurate title of the standard.)</td><td></td><td>
<table>
<tr><td>Protection Backflow Prevention Assemblies ASSE 1015</td><td>Backflow Preventers ~~For~~ for Fire Protection Systems CAN/CSA-B64.5.1</td><td></td><td></td></tr>
<tr><td>Double Check Detector Fire Protection Backflow Prevention Assemblies ASSE 1048</td><td>– – – – – – –</td><td>5048</td><td>No</td></tr>
<tr><td>Pressure Vacuum Breaker Assembly ASSE 1020</td><td>Pressure Vacuum Breakers CAN/CSA-B64.1.2</td><td>5020</td><td>Yes</td></tr>
<tr><td>Reduced Pressure Principle Backflow Preventers ASSE 1013</td><td>Reduced Pressure Principle Backflow Preventers CAN/CSA B64.4</td><td>5013</td><td>Yes</td></tr>
<tr><td>~~Reduced Pressure Principle Backflow Preventers and~~ Reduced Pressure Principle Fire Protection ~~Principle~~ Backflow Preventers ASSE 1013</td><td>~~Reduced Pressure Principle Backflow Preventers CAN/CSA B64.4 and~~ Reduced Pressure Principle Backflow Preventers ~~For~~ for Fire Protection Systems CAN/CSA-B64.4.1</td><td>5013</td><td>~~Yes~~ No</td></tr>
<tr><td>Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies ASSE 1047</td><td>– – – – – – –</td><td>5047</td><td>~~Yes~~ No</td></tr>
<tr><td>Spill Resistant Vacuum Breaker Assemblies ASSE 1056</td><td>Spill Resistant Vacuum Breakers CAN/CSA B64.1.3</td><td>5056</td><td>Yes</td></tr>
</table>
~~Note to DPD: Repeal and recreate table to maintain alphabetical order.~~</td><td></td><td></td></tr>
<tr><td>8.</td><td>382.30 (4) (b)</td><td>Changes with introduction of SPS 327.</td><td>DIS Amended by PAC</td><td>Minimum size of building sewers. 1. ‘Gravity flow sewers.’ The minimum size of a gravity flow sanitary building sewer shall be ~~4~~ 3 inches in diameter, except sewers serving camping ~~cabins~~ units.
Add: Venting shall be according to SPS 382.41 based on DFU load.</td><td></td><td>5/4/2017 – Motion to adopt with amendment.
6/14/2017 - Motion to craft language</td></tr>
</table>

<table>
<tr><th colspan="7">SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing</th></tr>
<tr><th>NO.</th><th>Rule provision</th><th>Issue/Reason for change</th><th>Proposed by</th><th>Existing Language and Proposed change</th><th>Potential Impact/Cost</th><th>Comments/Status</th></tr>
<tr><td></td><td></td><td>Change to 3" min. sewer.</td><td></td><td>5/4/17 Discussion: Should this be expanded to include other facilities (i.e. Walgreens)? Would need additional data to support. (Camping units are "seasonal".) Rule-making project for camping units includes note for the definition of camping units. See 381.01 (50g).</td><td></td><td>relating to venting for camping units in 382.31 (4).

8/7/2018 – Motion to amend from 4 inches to 3.</td></tr>
<tr><td>8a.</td><td>382.30-1 Table</td><td>Amend Table, create footnote j.</td><td>DIS</td><td>Table 382.30–1 Drainage Fixture Unit Values by Fixture Type
<table>
<tr><th>Type of Fixture</th><th>Drainage-Fixture Unit Value (DFU)</th><th>Trap Size Minimum Diameter (inches)</th></tr>
<tr><td>Bathroom Group, includes: a water closet, lavatory, and a bathtub or shower</td><td>~~6~~ 5</td><td></td></tr>
<tr><td>Shower Stall:</td><td></td><td></td></tr>
<tr><td>~~Residential~~ Non-public</td><td>2</td><td>2 j</td></tr>
<tr><td>Public, individual</td><td>2</td><td>2</td></tr>
<tr><td>Public, group</td><td>2 per shower head</td><td>2</td></tr>
<tr><td>See exception:</td><td></td><td></td></tr>
<tr><td>Water Closet, nonpublic</td><td>~~4~~ 3</td><td></td></tr>
</table>
Create footnote j. Except as provided in SPS 382.32 (3) (e).
(Relates to #19)

3/20/18 - Action Item (Complete): Ryan to further research flowrates. Determine if the table is necessary, and if so, what the best way is to match trap sizes to fixture for anticipated loads.] See 5/30/18 agenda packet for supplemental information.

5/30/18: Committee to review table for consideration of other changes (for commercial piping). Research IPC 2018 Table 709.1.

8/7/2018 Discussion: Handout provided by Joe. Eliminate assembly/school column and create footnotes for the listings under urinal and water closest. Joe to revise. Consider defining emergency floor drain, continuous vs. intermittent, add kitchen handwashing sink. See #8d.

(Note to DPD: Use amended DFU table in separate document.)</td><td></td><td>3/20/2018 – Motion to table for further information.

5/30/2018 - Motion to replace all references from "residential" to "non-public", where appropriate.

5/30/2018 – Motion to create footnote J. and accept changes in DFU column and amend bathroom group language as shown.

5/30/2018 – Motion for committee members to review Table 382.30-1 for additional changes based on data.

9/6/2018 - Motion to adopt amendments to Table 382.30-1 as discussed.</td></tr>
</table>

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
8b.	Table 382.30-1	Revise	DIS	Automatic Clothes Washers: Commercial type, individual Commercial type, large capacity ~~Self Service Laundry~~ Residential type	n/a	*8/7/2018 – Motion to table (pending revisions to Table 382.30-1).* *9/6/2018 - Motion to incorporate item 8b. with 8a.*
8c.	382.30 (3) (a) 2.	Revise and move Note under par. a. and place under par. b.	DIS	(a) 2. 'Devices.' Drainage fixture unit values for intermittent flow devices not listed in Table 382.30–1 shall be computed on the basis of one fixture unit ~~equalling~~ equaling one gallon per minute of flow. ~~**Note:** Equipment with a timed discharge cycle(s) of 2 minutes or less may be considered as an intermittent flow device.~~ (b) *Continuous flow devices.* Drainage fixtures unit values for continuous flow devices such as pumps, ejectors, air conditioning equipment or similar devices that discharge continuously shall be computed on the basis of 2 fixture units for each one gallon per minute of flow. **Note:** Equipment with a timed discharge cycle(s) of 2 minutes or less may be considered as an intermittent flow device.	n/a	*8/7/2018 – Motion to adopt.*
8d.	382.30 (4) (a) 2.	Repeal	DIS, repealed by PAC	~~The drainage fixture unit values assigned to receptor emergency floor drains and receptors which is to that receive only the indirect waste discharge from a relief valve on a domestic water heater may be disregarded when determining the minimum size of the building drain and building sewer. Any drain piping between the receptor and the building drain shall be sized by including the assigned fixture unit values for the type of receptor.~~ 8/7/2018 Action Item: Create definition for emergency floor drain and intermittent. Definition included in Table 382.30-1 footnote e. [complete]	Less restrictive	*8/7/2018 – Motion to table.* *9/6/2018 – Motion to repeal.*
9.	382.30 (10) *382.34 (f)?*	Exterior ejector pits	POWTS Advisory Comm.	More specification about exterior ejector pits may be needed. Does the department want to make jurisdictional lines-right now? This would be a plumbing issue. Clarification of what should be looked at for ejector pits. - Anchoring 83, Locks 84, Setbacks 83 Clarification: Who inspects? Connection at tank to inlet of septic tank = POWTS. Depends on size of jurisdiction and who appoints. Interior=UDC. Per stat, local has authority to appoint. Ch. 384 – changes to remove "POWTS" term. 8/7/2018 Discussion: Who inspects and who reviews? It is considered plumbing. Forthcoming proposed changes coming that will address this issue in ch. SPS 384.		*5/4/2017 - Tabled.* Need additional information. 5/30/2018 - No committee action needed. Rob to clarify intent of this request. 8/7/2018 - Questions resolved. No committee action required.

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
9a1.	382.30 (10) (a) 2. c.	Revise	DIS	Between the highest "pump on" switch level and the sump inlet, the sump shall hold the amount of input that exceeds the discharge of the pumping equipment in a 5-minute peak input period~~.~~. Capacity shall be based on one pump only. ~~but in~~ In no case shall the vertical distance between the switch and the inlet be less than 3~~"~~ inches.	n/a	*8/7/2018 – Motion to adopt.*
9a2.	382.30 (10) (d)	Revise, and renumber (intro) to 1.	DIS	(d) *Exterior sumps.* Exterior sumps shall comply with s. SPS 384.25. ~~1.~~ The minimum capacity of exterior sumps shall be determined in accordance with all of the following: [Note to DPD – May not need to renumber the intro.]	n/a	*8/7/2018 – Motion to adopt.*
9a.	382.30 (11) (b) 3. c.	Health/Safety issue. Pool rooms must drain dry and pool approvals are being held up. DATCP no longer doing petitions. (SPS 390) Covered in pool code	DIS Amended by PAC	3. 'Floor drain required.' a. Where a plumbing fixture or appliance is located on a floor which is entirely below grade, a floor drain shall be installed to serve that floor. b. In any room containing the recessed or concealed portions of sterilizers located in health care or related facilities, at least one floor drain connecting to the drainage system shall be installed in a manner to adequately drain the entire floor area. c. In any public swimming pool toilet or locker room, floors shall be pitched and the floor drains located in a manner to prevent standing water. [Note to DPD: Tweak wording as needed. Should a note be inserted here to refer to pool code vs. duplicating language?] Discussion: Per SPS 390, pool room floors need to drain dry.		*3/20/2018 - Motion to create c. and adopt as proposed.*
10.	382.30 (11) (c) 2.	Frost Protection: Clarification of building sewer insulation requirements	POWTS Advisory Comm.	Possibly simplify insulation requirements to specify none, 4-ft. sheet, or box the pipe. Code only talks about width and doesn't make sense. *5/04/17 - Discussion: Is this needed in this code? Code is silent re: insulated pipe. Codify or move to Appendix? Consider saying 'frost protected' and put responsibility back on professional, consider adding insulated pipe as an option equal to blue-boarding (or 'any combination of the following that…')* 8/9/17 - Discussion: If heat source, insulated pipe works well. If no heat source, no movement of air through tank. (Grease source, septic, etc.) [5/04/17 - Tom to get insulation factors and recommendations for insulation pipe.] 382.30 (11) (c) 3. d. – allows approval on alternates	Medium	*5/4/2017 - Tabled.* 8/9/2017 – Tabled pending new language. [Tom] 5/30/2018 - No committee action needed. Withdrawn per DIS.

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
11.	382.30 (11) (c) 2. e.	Allows for seasonal homes	DIS, Amended by PAC	Where a building sewer or private interceptor main sewer is installed to serve ~~summer~~ seasonal use ~~public facilities,~~ frost protection requirements shall not apply. *Discussion: Consider changing "summer" to "seasonal" for consistency w/other rules. Consider creation of note to reference definition of "seasonal".* Per SPS 364.0309 (2), "Seasonal" is considered as the period between May 1 through October 15.		*5/4/2017 - Motion to table.* 6/14 /2017 - *Motion to create a definition of seasonal in SPS 381 as defined under 364.0309 (2).* *8/9/2017 - Motion to create definition for "seasonal" to mean the period of April 15 through October 31 for the purpose of frost protection.*
11a.	382.30 (11) (e)	Revise	DIS	(e) *Installation of building drains and building sewers.* 1. 'Trenching.' All excavations for building drains and building sewers shall be open trench work, unless otherwise ~~permitted~~ approved by ~~local ordinance or accepted by~~ the ~~local inspector~~ department.	Less restrictive	*8/7/2018 – Motion to adopt.*
12.	382.30 (12)(f) 382.30 (11) (a)	Non-easement issues	DIS PAC	Existing: No private interceptor main sewer may pass through or under a building to serve another building, unless one of the following conditions are met: Proposed: 3. An easement and agreement for maintenance and repairs shall be recorded with the register of deeds no later than 90 days after installation. Discussion: Issues w/neighbor disputes re: who is maintaining easement. Proposal provides directive to alleviate issues. *Consider additional amendments to this section.* *Consider adding new language after 'main sewer'…..'or building sewer that connects to a private interceptor…' OR change 382.30(11) (a). Includes water, storm, and sanitary sewers.* [Action Item: Tom to develop amended language. Research PSC 284 or other rule provisions for language to address issue.] Disregard: ~~9/7/2018 – DIS/DPD to seek legal counsel regarding consistency with PSC 284 re: individual connections. If conflict, does plumbing code trump?~~		*5/4/2017 – Motion to table pending new language.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
13.	382.30 (13)(c) 382.30 (13) (b)	Clarification	DIS Amended by PAC	Exposed drain piping shall not be located over a pool, surge tank, or an open filter for a pool. Proposed: Add Note: Note: ~~Piping with insulation is not exposed.~~ SPS 382.30(13) (c) (Note) is created to read: **Note**: See ch. 382 Appendix for examples of exposed piping considerations. *5/04/17 - Discussion: Intent is to prevent installation of ceilings to cover piping. Consider additional amendments to this section and other sections relating to exposed pipes over consumables. Consider including examples of porous insulation (indicating a leak) in the Appendix (i.e. fiberglass w/paper sleeve or other porous insulation)* *6/14/17 - This may fall under health department. They may allow a trough.*	Less restrictive	*5/4/2017 – Motion to adopt with amended note.*
13 a1.	382.31 (10) (a)	Revise – Allows use of double wyes	DIS	(a) The circuit vent shall connect to the horizontal drain at the same point or a point between the 2 most upstream fixtures.	Provides flexibility	*8/7/2018 – Motion to adopt.*
13a.	382.31 (11) (a)		DIS Amended by PAC	(a) *Vertical drains.* A common vent may serve a maximum of 2 fixtures where both fixture drains connect to a vertical drain at the same elevation. 1. Where this connection is by means of a sanitary tee fitting with a side inlet, the centerline of the side inlet opening may not be below the centerline of the larger opening. 2. The drain connection of a blowout type fixture, ~~or a~~ kitchen sink, or a clothes washer served by a common vent may not be by means of a double sanitary tee fitting.		*3/20/2018 – Motion to adopt to add clothes washer and renumber into two sections.*
14.	382.31 (12)	Clarification	DIS Amended by PAC	RETURN VENTS. ~~Plumbing~~ Wall outlet ~~plumbing~~ fixtures may be vented in accordance with pars. (a) to (d).		5/14/2017 – Left off here. *6/14/2017 – Motion to adopt w/amendment.*
15.	382.31 (16) (d) 1.	Existing language too restrictive	DIS Amended by PAC	*Location of vent terminals.* ~~1. A vent shall not terminate at least 5 feet under the overhang of a building.~~ Create: 2. e. If a vent terminates under an overhang, it shall be a minimum of 5 feet below the overhang.		*6/14/2017 - Motion to strike 383.31(16) (d) 1.* *6/14/2017 -Motion to create 382.31 (16) 2. e.*
16.	382.31 (16) (e)	Dept. approval not required	DIS	*Extension through wall.* ~~Where approved by the department, a~~ A vent may terminate through an exterior wall. Such a vent shall terminate at least 10 feet horizontally from any lot line and shall terminate downward. The vent shall be screened and shall comply with par. (d).		*6/14/2017 - Motion to adopt.*

<table>
<tr><th colspan="7">SPS 382 DESIGN, CONSTRUCTION, INSTALLATION, SUPERVISION, MAINTENANCE, AND INSPECTION OF PLUMBING</th></tr>
<tr><th>NO.</th><th>RULE PROVISION</th><th>ISSUE/REASON FOR CHANGE</th><th>PROPOSED BY</th><th>EXISTING LANGUAGE AND PROPOSED CHANGE</th><th>POTENTIAL IMPACT/COST</th><th>COMMENTS/STATUS</th></tr>
<tr><td>17.</td><td>382.31 (18)</td><td>Renumber due to creation of new section</td><td>DIS</td><td>Renumber (18) PROHIBITED USES to (19).
~~(18)~~ (19) PROHIBITED USES</td><td></td><td>6/14/2017 - No committee action required.</td></tr>
<tr><td>18.</td><td>382.31 (18)</td><td>Codifying AAV alternate approval

Doesn't have to go through plan review if in code.</td><td>DIS, Amended by PAC</td><td>Create new section:
(18m) AIR ADMITTANCE VALVES (AAV). The use of air admittance valves in lieu of traditional venting shall comply with all of the following:
(a) The AAV may only serve as a termination point for a branch vent, circuit vent, common vent, individual vent, wet vent or- combination drain and vent system. The AAV may serve a pumped-discharge type clothes washer standpipe when the fixture drain downstream of the point of vent is at least 3 inches in diameter.
(b) The AAV may not serve as a vent termination point for any of the following: to relief positive pressures, serving chemical waste system, serving POWTS holding tank or POWTS treatment tank, serving a stack vent serving two or more branch intervals, serving a vent stack that is required in accordance with s. SPS 382.31 (4) (a), serving a sump, serving Bio Safety Lab (BSL) 3 or 4 laboratories.
(c) The size and developed length for a vent using an AAV shall conform with Table 382.31-6.

TABLE 382.31-6
<table><tr><td>Maximum DFU's</td><td colspan="3">Maximum Developed Distance of Vent to Connection of AAV in Feet</td></tr><tr><td></td><td colspan="3">Diameter in Inches</td></tr><tr><td></td><td>1-1/4[a]</td><td>1-1/2[c]</td><td>2</td></tr><tr><td>1</td><td>35</td><td>NL</td><td>NL</td></tr><tr><td>3</td><td>28</td><td>140</td><td>NL</td></tr><tr><td>6</td><td>NP[e]</td><td>100</td><td>200</td></tr><tr><td>20</td><td>NP</td><td>60</td><td>110</td></tr></table>(d) Testing. AAV's shall be tested. The AAV shall be tested prior to or after installation. The AAV shall be subjected to a pressure equal to 1 inch of water column. After observing for 1 minute, if the pressure falls .5 of an inch or less, it will be considered a passing AAV.
(e) Installation. The installation of the AAV shall conform with all of the following:
1. The AAV must be installed in the vertical position (plus or minus 15 degrees from plumb).
2. The vent system being served by the AAV may have horizontal offsets located less than 36 inches above the floor on which the fixtures are installed providing the vent does not connect to another vent.</td><td></td><td>6/14/2017 – Motion to adopt with amendments.

8/9/2017 – Need to identify ASSE standard #s.

[Action Items: Add language in ch. 384.] Add 1055 & 1056 standards to the standards table in ch. 381.]

Q. Need drawing in appendix? A. No</td></tr>
</table>

NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				3. The installation location of the AAV shall conform with all of the following: a. A minimum of 4 inches above the top of the horizontal pipe being served. b. No more than 20 inches below the flood rim of any fixture served. c. At least 6 inches above insulation materials. d. In an accessible area. e. Within a ~~ventilated~~ space that allows air to enter the product and has an opening equivalent to requirements in 382.31 (14) ~~with an area of at least one square inch~~ to the ~~building air or outside air~~ atmosphere. f. With at least one ~~open air~~ vent ~~located~~ connected to the building drain waste and vent system and located downstream of ~~all~~ any ~~air admittance valves~~ AAV extending to outside atmosphere.~~, and with a 3 inch or larger vent installed to the outside atmosphere in all systems that include air admittance valves AAV installation.~~ g. ~~and with~~ With a 3 inch or larger vent ~~installed~~ to the outside atmosphere connected to the building drain waste and vent system ~~outside atmosphere in all any systems that include air admittance valves AAV installations~~. 4. The AAV may not be located in any of the following areas: a. An enclosed stairwell. b. An area subject to positive pressure conditions for more than 12 continuous hours. c. An area utilized as supply or return air plenum. d. A pit, vault, or depression which is below the adjacent grade or floor level. e. An area that subjects the valve to ~~conditions with~~ grease or other materials which could cause fouling of the valve's seal. 5. The AAV may not be located within the same room or enclosure as any of the following: a. A Bio Safety Lab (BSL) 3 and 4 laboratory. b. A health care facility as defined is s. SPS 381.01 (116). c. A restaurant kitchen licensed by the state or local department of health. d. A residential bedroom. e. A daycare. 6. Branches that have fixtures served by the AAV must comply with all of the following: a. When connected to a stack that has 4 or more branch intervals above the branch connection, the branch must be provided with a relief vent located between most downstream fixture and the stack. b. c		[Resolved] ~~(f) POWTS consideration. Cabin consideration Define "open air vent". Further discussion needed on "downstream". Goal is to eliminate positive pressure. Insert "branch" after vent? Eliminate 3. f.?~~

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				(f) Notice to Owner: When an AAV is installed in a building, the contractor shall provide the owner with a copy of the manufacturer's written AAV description.		
19.	382.32 (3) (e)		DIS, amended by PAC	*Size.* Traps shall be of diameters not less than those specified in Table 382.30−1 of s. SPS 382.30. a. 1. The minimum trap diameter for a trap serving a shower replacing a ~~residential~~ non-public bathtub is 1.5 inches providing the following apply: 1. a. The shower is served by one control valve ~~and one shower head~~. b. The shower head shall have a maximum flow rate of 2.5 gallons per minute (gpm). Discussion: Consider adding "fixtures shall drain dry"? Determine where this provision should be placed in SPS 384. [Note to DPD: Make change in 382.32 (3) (f). 'Except as provided in…'] *6/14/2017 – Motion to adopt with amendments.* *8/9/2017 – Motion to place note under Table 382.30-1 to read: 'See SPS 382.32 (3) (e) for exceptions.'* *5/30/18 – Motion to add "non-public" after the (struck) word residential.* 8/7/2018 – Will address "non-public" when Table 382.30-1 complete. *9/6/2018 – Motion to withdraw previous changes relating to "non-public".*		
19a.	382.32 (4) (b) 1.	Revise, due to multiple petitions, esp. from hospitals	DIS	1. 'Vertical distance.' ~~Except as provided in subd. 1. a. to c., the~~ The vertical distance of a wall outlet fixture between the top of the fixture drain outlet and the horizontal center line of the trap outlet shall not exceed 15".	Eliminates need for petition	*8/7/2018 – Motion to adopt.*
20.	382.32 (4) (b)1. c.	Similar type fixtures	DIS	The vertical distance between the water level in the bowl of a floor outlet water closet or floor outlet clinic sink and the center line of the horizontal portion of the fixture drain shall not exceed 36 inches.		*6/14/2017 – Motion to adopt.*
20a.	382.32 (4) (b) 1. e.	Create e., Spancrete issues, separating from 19a.	DIS	1. e. The vertical distance of a floor outlet fixture between the top of the fixture drain outlet and the horizontal center line of the trap outlet shall not exceed 18".	n/a	*8/7/2018 – Motion to adopt.*
21.	382.32 (5) (b)	Issues with dishwashers,	DIS	Existing: *Kitchen sinks.* Horizontal drain piping serving a kitchen sink trap shall not connect to vertical drain piping by means of a double sanitary tee.		*6/14/2017 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		clothes washers and disposals		Proposed: 1. Horizontal drain piping serving appliances with pumping action discharge shall not connect to vertical drain piping by means of a double sanitary tee.		
21.a	382.32 (5) (c) 2.	Enforcement Issue	Musolff	SPS 382.32 (5)(c)2. A floor outlet water closet shall connect to a 4-inch or 4 X 3-inch closet collar fitting. ~~A 4 X3 inch closet bend fitting may be installed where a 4 inch closet collar fitting is used.~~		*3/20/2018 – Motion to adopt as presented, eliminate 2nd sentence (in red).*
22.	382.33	Need to expand table?	DIS, amended by PAC	(b) Indirect waste piping and local waste piping draining the fixtures, appliances and devices having a public health concern, including ~~but not limited to~~ those listed in Table 382.33-1, shall be considered as plumbing and shall comply with the provisions of this section. Table 382.33-1 – some states allow indirect waste piping. Discussion: kitchen sink – suds. Table 382.33-1 Refrigerated food storage rooms and compartments Refrigerated food display cases Ice compartments and ice makers Vending machines Steam tables, kettles, and related equipment Food preparation sinks Potato peelers Egg boilers Boiler blowoff basin outlet drains Coffee makers and urns Food processing equipment Baptismal founts Clothes washers and extractors Dishwashers Stills Sterilizers Bar and soda fountains Boiler blowoff basin outlet drains Other devices, fixtures, and appliances as approved by the department *6/14/17 Discussion: Allow indirect piping? Allow use of floor sinks? If allowed, would also affect 382.33 (2). No.* *8/9/17 Discussion: Is "as approved by department" too vague/open-ended? Will enforcement vary?*		*8/9/2017 - Motion to add "Other devices, fixtures, and appliances as approved by the department."* *8/9/2017 - Motion to add ice-makers and "and related equipment".*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
22a.	382.33 (5) (b) Note	Repeal note due to repeal of re: section in SPS 325.	PAC	SPS 382.33 (5) (b) and (note): (b) *Local waste piping.* Local waste piping handling sanitary wastes and more than 30" in length shall be provided with a trap in accordance with s. SPS 382.32 (4). ~~Note: Residential exclusion see. S. SPS 325.~~		*9/19/2017 – Motion to keep SPS 382.35 (5) (b) and repeal note.*
22b.	382.33 (6)	Amend for drafting style	UDC	(6) MAXIMUM LENGTH. Indirect waste piping and local waste piping handling sanitary wastes ~~shall~~ may not exceed 30 feet in length horizontally nor 15 feet in length vertically.		*10/17/2018 Motion to adopt.*
23.	382.33 (8) (d)	Industry standard Adds allowance	DIS	*Other receptors.* A plumbing fixture may not be used as a receptor for indirect or local waste piping, except as provided in subds. 1. to ~~7~~ 8. 8. A water closet, clinical sink, or a urinal may receive the discharge from a mortuary or autopsy table. ~~Consider adding 9. Tom to check into dialysis provision.~~ 8/9/17 Discussion: Review 382.50 – dialysis boxes in patient rooms. Concern that boxes may not be used for extended lengths of time – bacteria growth, require to cap off when not in use. - Alternate approval for carts: Provisions for dialysis boxes should be addressed until alternate approval expires in April 2022. Will address after alternate approval expires. [DPD/DIS to draft language for 382.50 (2) (a) 4. Update: Created in #57c.]		*6/14/2017 - Motion to adopt 8.* *8/9/2017 – Motion to request Department to draft language for SPS 382.50 relating to dialysis boxes.*
23a.	382.33 (8) (d) 2.	Revise	DIS	The indirect waste piping of ~~an~~ a residential-type automatic clothes washer or water treatment device may discharge into a laundry tray.	n/a	*8/7/2018 – Motion to adopt.*
24.	382.33 (8) (d) 3.	Use of term "branch" is confusing	DIS	The indirect or local waste piping serving a cross connection control device or assembly, water treatment device, air conditioner, humidifier or furnace condensate may discharge into a ~~branch~~ tailpiece serving a laundry tray. *6/14/17 Discussion re: ice makers*		*6/14/2017 - Motion to adopt.*
25.	382.33 (8) (d)7.	Use of term "riser" is confusing	DIS, Amended by PAC	The indirect waste piping serving a dental mold grinder may discharge into the ~~riser or~~ tailpiece of a trap serving a ~~laboratory~~ sink that is provided with a plaster trap and is installed within 3 feet of the mold grinder.		*6/14/2017 – Motion to adopt.*
26.	382.33 (9) (a)	Specific discharge language	DIS	Existing: Addition to. Proposed: Indirect waste must discharge to an approved receptor.		*6/14/2017 – Motion to adopt.*
27.	382.33 (9) (c) 2.	Clarification – This is not limited to	DIS	~~'Self–service laundries~~ Laundries.' Pumped–discharge automatic clothes washing equipment, including residential-type clothes washers in launderettes, laundromats, and self–service laundry establishments shall have the wastes discharge to a drain	Less restrictive	*6/14/2017 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		self-service laundries.		system by means of standpipes. The standpipes shall be installed in accordance with subd. 1.		
27 a1.	382.33 (9) (c) 2. a.	Move under "residential type" washers. Clarify: Clothes washers discharge via indirect waste piping and are technically not "connected" to a trap.	DIS	Renumber to (9) (c) 1. c. The maximum allowable number of washers which may ~~be connected~~ discharge to ~~a~~ the minimum sized trap shall be in accordance with Table 382.33−2.	n/a	*8/7/2018 – Motion to adopt.*
27 a2.	382.33 (9) (c) 2. b.	Move under "residential type" washers. Use plural form of manifold for consistency	DIS	Renumber to (9) (c) 1. d. Washer wastes shall not be discharged to gutters, troughs, local waste piping, indirect waste ~~manifold~~ manifolds, or other similar connections.	n/a	*8/7/2018 – Motion to adopt.*
27 a3.	382.33 (9) (c) 3.	Revise for consistency & clean up	DIS	'Commercial-type.' Gravity discharge~~−type~~ clothes washing equipment shall discharge by means of an air−break or by other approved methods into a floor receptor, trench, or trough.	n/a	*8/7/2018 – Motion to adopt.*
27 a4.	382.33 (9) (c) 3. c.	Revise, add subsection #	DIS	All wastes from the washers shall flow through an ~~Commercial laundry~~ interceptor as specified in s. SPS 382.34 (7).	n/a	*8/7/2018 – Motion to adopt.*
27 a5.	Table 382.33-2 (title)	Revise title	DIS, amended by PAC	~~Washer~~~~Connections~~ Clothes Washer Discharge	n/a	*8/7/2018 – Motion to adopt.*
27 a6.	382.33 (9) (f) 3. to 5.	Move subd. 3. to 5. under	DIS	~~3. b. A sump may not be located in an elevator machine room.~~	n/a	*8/7/2018-No action needed.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		section 382.36 (8) (a) See also 38 e1.		~~4. A drain serving an elevator pit that discharges to a sump shall have a submerged inlet constructed to maintain a minimum 6" trap seal.~~ ~~5. A sump located in an elevator pit may only receive storm or clear water waste from the elevator pit or the elevator machine room, or both.~~		
27 a7.	382.33 (9) (g)	Amend for clarity, confusing	DIS, amended by PAC	*Food ~~handling establishments~~ service*. For occupancies other than dwelling units, ~~Plumbing~~ plumbing fixtures, devices, appliances, and appurtenances installed ~~in~~ for food ~~handling establishments engaged~~ service ~~in~~ including the storage, preparation, selling, serving, or processing of food intended for human consumption shall be installed in accordance with this paragraph.	None	*10/17/2018 Motion to table.* *11/6/2018 – Motion to adopt as amended.*
27 a8.	382.33 (9) (g) 1.	Where DATCP requires an additional handwashing sink after a final inspection	DIS, amended by PAC	Revision #1 1. 'Bar ~~and soda fountain sinks~~ Sinks.' ~~Where a~~ A bar, ~~or~~ soda fountain, or handwashing sink ~~is so located that the trap for the sink cannot be vented as specified in s. SPS 382.31, the sink drain shall~~ may discharge to the sanitary drain system through indirect waste piping. Revision #2 'Bar~~,~~ ~~and soda fountain, or handwashing~~ sinks.' ~~Where a~~ A bar~~, or soda fountain,~~ or handwashing sink ~~is so located that the trap for the sink cannot be vented as specified in s. SPS 382.31, the sink drain shall~~ may discharge to the sanitary drain system through indirect waste piping.	Less restrictive	*10/17/2018 Motion to adopt.* *11/6/2018 – Motion to adopt revision #2 as amended.*
27a.	382.33 (9) (g) 4.	Revise to coincide with code. DHS & DATCAP use for food industry. Air break no longer required for bigger refrigerated rooms.	DIS	4. `Refrigerated food storage rooms, compartments and display cases.' Drains serving refrigerated food storage rooms, compartments or display cases shall discharge to the sanitary drain system through indirect waste piping. The indirect waste piping shall drain by gravity to a receptor by means of an air-gap or air-break. Where an air-break is installed, the flood level rim of the receptor shall be at least 2" below the top of the fixture strainer or drain opening in the refrigerated room, compartment or display case. [Completed: Tom to research DHS and DATCP language relating to refrigerated food storage.] 8/7/2018 Update: Nothing was found that eliminates the requirement in DATCP 75.		*3/20/2018 – Table for more information from Tom.* *8/7/2018 – Proposal withdrawn by DIS.*
28.	382.33 (9) (g) Note	Amend term from 'material'	DIS	Note: See ch. SPS 382 Appendix for further explanatory ~~material~~ information. Discussion: "Material" typically references plumbing material.		*6/4/2017 - Tabled 8/9/17 - Motion to amend notes throughout code to*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
						replace 'material' with 'information'.
29.	382.33 (9) (k) 3.	Codifies alternate standard that has been allowed.	DIS	The discharge from deck drains serving outdoor pools shall be directed to the storm sewer by way of an air−gap, air-break, or to grade. The distance from the top of the air-break to the pool deck shall be a minimum of 6 inches. Discussion: Use of air-break proven to protect public health associated w/public swimming pools. Less restrictive w/equivalent protection of air-gap for pool discharge.	Less restrictive	*6/14/2017 - Motion to adopt.*
29a.	382.34 (title)	Revise Title	DIS	~~**Wastewater**~~ **Water treatment and holding devices. (1)** SCOPE. The provisions of this section set forth the requirements for design and installation of plumbing ~~wastewater~~ water treatment and holding devices, appurtenances and systems, including but not limited to interceptors, catch basins, decontamination tanks and dilution and neutralizing basins.	n/a	*8/7/2018 – Motion to adopt.*
29b.	382.34 (3) (a)	Move under new section 382.34 (16)	DIS	~~(a) *Treatment for reuse.* 1. Except as limited in subd. 2., graywater, storm water, clear water, blackwater and other wastewaters as approved by the department may be reused in conformance with s. SPS 382.70.~~ ~~2. Except as provided in subd. 3., wastewater discharged from water closets or urinals shall not be reused for drinking water.~~ ~~3. All treatment works permitted by the department of natural resources, or a POWTS which includes an in situ soil dispersal or treatment component may treat wastewater discharged from water closets or urinals for reuse.~~	n/a	*8/7/2018: No action needed.*
30.	382.34 (15) (e) 1.	Original is confusing	DIS	1. A discharge line ~~serving~~ shall serve a containment tank for servicing purposes and shall comply with all of the following: 6/14/17 Discussion: Hospital decon tents not required to put in tank but if they do, have to follow standards.		*6/14/2017 - Motion to adopt.*
31.	382.34 (15) (d) 1.	Hospitals need to account for all water.	DIS	Create: Where a containment tank has an outlet that is connected to a drain system, the outlet shall include a means to contain the wastewater from entering the drain system until proven to be safe for discharge.	Allows an additional option	*6/14/2017 - Motion to adopt.*
32.	382.34 (3) (e)	Specific maintenance for grease interceptors is needed.	DIS, amended by PAC	*Maintenance.* All devices installed for the purpose of intercepting, separating, collecting, holding or treating harmful, hazardous or deleterious materials in liquid or liquid−borne wastes shall be operated and cleaned of intercepted or collected materials or of any residual from treatment at such intervals which may be required to prevent their passage through the interceptor. ~~Exterior grease~~ Grease interceptors shall be maintained on a cycle not to exceed 90 days or per manufacturer's instructions.	More restrictive	*6/14/2017 - Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
32a.	382.34 (3) (g) 4.	Create new to codify common practice		4. Anchoring system components. An exterior subsurface treatment tank holding component, or reservoir to be installed in an area subject to saturated conditions, shall be installed so as to prevent flotation of the tank or component.		*10/17/2018 – Motion to adopt.*
33.	382.34 (4) (b)	Basket req. to be removable for cleaning of fixture. Incl. in SPS 325 .01.	DIS	*Garages for one− and 2−family dwellings.* 1. Floor drains serving garages for one− and 2−family dwellings shall be provided with a removable solid bottom sediment basket.	Less restrictive	*6/14/2017 - Motion to adopt.*
~~33a.~~	~~382.34 (4) (b) 2.~~	~~Add paragraph c, relates to min access grate or opening.~~	~~DIS~~	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 catch basins serving garages for one- and 2-family dwellings shall be 18 inches.~~		*3/20/2018 – Disregard. Retain original language. No motion made.*
34.	382.34 (4) (c)	Renumbering and adding subd.2. & 3. to mirror recent changes to SPS 325.01(4). UDC uses same language.	DIS, amended by PAC	382.34(4)(c)1. *Grates for garage catch basins, floor drains and trenches.* A garage catch basin, floor drain and trench drain shall be provided with an approved, removable ~~cast iron or steel~~ grate of ~~a thickness and~~ sufficient strength for the anticipated loads. The grate shall have an available inlet area equal to at least the outlet drain for the catch basin, floor drain or trench drain. ~~382.34(4)(c) 2. The grate for a garage−floor drain sufficient~~ thickness and ~~strength that will withstand the anticipated loads.~~ 382.34(4)(c) ~~3.~~ 2. A trap may be omitted for a catch basin, floor drain serving a garage for a one− and two−family dwellings that discharges to the ground surface. ~~**Note:** For residential exclusion see s. SPS 325.01 (4) (c).~~ [DPD: Only repeal note if related section in SPS 325 is repealed.]		*6/14/2017 - Motion to adopt SPS 382.34 (c)1. to 3.* *9/19/2017 – Motion to amend SPS 382.34 (4) (c) 1., and strike 382.34 (4) (c) 2. and 3. (Note).*
35.	382.34 (5) (b) 2. and a.	Other more economical methods to intercept grease. #1 issue w/petitions.	DIS	Repeal SPS 382.34 (5) (b) 2. and 2. a.: 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. [Renumber 382.34 (5) (b) 2. b. and c.]	Less restrictive. Less cost.	*6/14/2017 - Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
36.	382.34 (5) (c)	Clarification. Other non-grease producing fixtures tend to interfere with proper grease interception.	DIS	*Exterior grease interceptors.* ~~Exterior~~ New exterior grease ~~interceptors~~ interceptor installations shall receive the entire greasy waste discharge from kitchens or food processing areas. All exterior interceptors shall be designed and constructed in accordance with this paragraph, so as to constitute an individual structure. *6/14/17 Discussion: Consider definition for "greasy waste"?*		*6/14/2017 - Motion to adopt.* *6/14/2017 - Motion to change title of 382.34 (5) to Fats, Oils, and Grease (FOG) Treatment and add a note to FOG definition [SPS 381.03 (93m)].*
37.	382.34 (5) (c) 1. g.	Compartments on exterior grease interceptors prevent channeling of waste.	DIS	An exterior grease interceptor shall have at least two compartments. Each compartment of an interceptor tank shall be provided with at least one manhole opening located over either the inlet or outlet opening. Additional manhole openings shall be provided such that no interior compartment wall of a tank is more than 4 feet from the edge of the manhole opening. The distance between manhole openings serving the same compartment shall not exceed 8 feet. Manhole openings shall be not less than 23" inches in the least dimension. Manholes shall terminate at or above ground surface and be of approved materials.		*6/14/2017 - Motion to adopt.*
37 a1.	382.34 (5) (d) 8.	Create new	DIS	For calculating greasy waste for a wok the following formula may be used: $\frac{\text{Diameter x Diameter x .7854 x Depth x .65 x .75}}{231}$		*8/7/2018 – Motion to adopt.*
37a.	382.34 (15) (a) 2.	Amend to remove exterior	DIS, amended by PAC	~~Exterior containment~~ Containment devices or treatment systems for mixed wastewater, decontamination tanks or other special wastewater treatment devices shall be constructed in accordance with s. SPS 384.25 or as approved by the department.		*3/20/2018 – Motion to adopt.*
37 a2.	382.34 (16)	Create new section (16) Keeps performance and includes other parts of code.	DIS	(16) WATER REUSE SYSTEMS. (1) *Treatment for reuse.* 1. Except as limited in subd. 2., graywater, storm water, clear water, blackwater and other wastewaters as approved by the department may be reused in conformance with s. SPS 382.70. 2. Except as provided in subd. 3., wastewater discharged from water closets or urinals shall not be reused for drinking water. 3. All treatment works permitted by the department of natural resources, or a POWTS which includes an in situ soil dispersal or treatment component may treat wastewater discharged from water closets or urinals for reuse. (2) Water reuse treatment shall produce a water quality conforming to SPS 382.70. (a) Periodic ~~and~~ maintenance shall be performed by qualified individuals.	Less restrictive regarding record keeping	8/7/2018 - Left off here. *9/6/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				1. Records shall be kept on dates of cleaning, replacement of components or parts, and when the system was shut down and reason for shut down. 2. The department shall be provided access to the water treatment system and records upon request. (3) Materials.1. Water distribution material shall comply with SPS 384.30(4)(e) and SPS 384.30(5). 2. Drain and vent piping shall comply with 384.30(2). 3. Treatment and holding tanks shall comply with 384.25. 4. Water treatment components shall have department approval or conform to an accepted standard. 5. Components shall be properly labeled as to the manufacturer and model number. (4) Installations. (a) 1. Water reuse systems shall not supply water to a potable water supply system. 2. A potable water supply connected to a reuse water system shall be protected by a high hazard cross connection control device, assembly or method. 3. A backwater valve shall be installed where the discharge from a reuse component is connected to a sewer. **Note:** For water reuse, refer to the appropriate requirements in ss. SPS 382.30, 382.36, 382.40, 382.41, 382.70 and this section.		
37 a3.	382.34 (17) (Note to DPD: to Renumber to align with drafting procedures .)	Create new section (17) Optimum service demand	DIS, amended by PAC	[Renumber from 382.40 (8) (j)] (17) WATER TREATMENT (1) Water softeners. (a)1. Ion exchange water softeners used primarily for water hardness reduction that, during regeneration, discharge a brine solution shall be of a demand-initiated regeneration type equipped with a water meter or a sensor unless a wastewater treatment system downstream of the water softener specifically documents the reduction of chlorides. 2. Water softener sizing criteria shall be based on SPS 382.40 (6) and the manufacturer's specifications. 3. A bypass shall be provided to serve a water softener. 4. Water softeners shall meet the requirements of SPS 384. (2) REVERSE OSMOSIS. (a)1. Reverse osmosis water treatment systems shall be equipped with an automatic shutoff ~~valve~~ when the storage system is at capacity. 2. The connection of the drain shall be as specified in SPS 382.33. 3. Point of use systems supply connections shall conform to SPS 382.40(7)(h). 4. A bypass is prohibited on a reverse osmosis system used for patient care.		*9/6/2018 – Motion to adopt as amended.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	Rule provision	Issue/Reason for change	proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
				(Consider additional section – if not specified, code shall supersede. (3) Disinfection. (a) Chlorine, Chloramine. Continuous. 1. The maximum residual disinfection level goals (MRDLGs) as per SPS 382.22, NR809.561, NR809.80: a. The maximum residual disinfectant concentration may not exceed 4.0 mg/L. b. The system shall be designed and installed to achieve the minimum inactivation rate ("CT" value). c. The maximum contaminant level of byproducts must not exceed 0.080 Trihalomethanes (TTHM) and 0.60 Haloacetic Acids (HAA5). 2. Each potable water system using chlorine disinfection shall be automatically and continuously disinfected by means of disinfectant and feeding equipment. 3. Disinfectant and filter aid feeding shall be conducted as follows: a. Liquid chemicals shall be fed into water circulation piping by means of a positive displacement feeder either at full strength or diluted with potable water. b. If a chemical that forms a residue is used, a two-tank system shall be used. One tank shall be used for mixing the solution and settling the precipitate. The clear liquid shall be decanted or siphoned into the second tank for distribution. 4. Feeders shall comply with all of the following: a. All disinfectant feeders shall be installed according to the manufacturer's directions and used only with the disinfectant recommended by the manufacturer. b. Feeders shall be automatic, easily adjustable, capable of providing the required chemical residuals, equipped with flow control valves upstream and downstream from the feeder, easily disassembled for cleaning and maintenance, durable, and capable of accurate feeding. c. Feeders shall be properly vented and incorporate anti-siphon safeguards to prevent disinfectant feeding in the event of the failure of recirculation equipment. d. Feeder pumps shall be electrically connected to the recirculation pump control circuit and have a separate disconnect switch. e. Feeders systems (pump, tanks, piping/tubing materials) shall be suitable for use in a potable water supply and shall be third party certified or approved by the department. f. Feeder systems shall be located to disinfect the entire hot water system per SPS 382.50. 5. Disinfectant shall comply with the following: a. The disinfectant must comply with NSF/ANSI 60 ~~International Standard for Drinking Water Additives~~. b. The disinfectant has an effective residual that can be measured easily and accurately by an approved field test procedure.		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	Rule provision	Issue/Reason for change	proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
				c. The disinfectant is compatible for use with other chemicals normally used in the water treatment or is clearly identified as having a use limitation. d. The disinfectant does not impart toxic properties to the water when used according to the manufacturer's directions. e. The disinfectant does not create an undue safety hazard when handled, stored or used according to the manufacturer's directions. f. All chemicals used in the operation, and bulk storage tanks containing the chemicals shall be conspicuously labeled with the following information: i. Name of the product ii. The manufacturer's name and address iii. Active ingredients iv. Directions for use v. Hazardous ingredient warning vi. The U.S. environmental protection agency registration number (b) Ultraviolet (UV). 1. UV water treatment devices must conform to Class A criteria under the American National Standard Institute (ANSI)/National Sanitation Foundation (NSF) Standard 55 ~~- Ultraviolet Microbiological Water Treatment Systems.~~ 2. The capacity of the UV system shall comply with sizing criteria listed in SPS 382.40. 3. The water system downstream of the UV disinfection system shall be disinfected prior and immediately before activation. 4. Multiple parallel UV treatment systems may be installed to provide disinfection of the water systems. i. Single component failure can be expected. If a single UV treatment system is installed, a bypass may be installed. 5. This device must be installed with a 254 nm wavelength narrow band UV monitor. The monitor must de/energize the solenoid to stop the flow of water at a minimum UV dosage of 40,000 microwatt-seconds per square centimeter (40 millijoules) at a wavelength of 254 nm. 6. This device must be installed with automatic fixed flow rate control that prevent flow above the manufacturer's maximum rated flow over the operating pressure range ~~recommended~~ as specified by the manufacturer. 7. A solenoid valve must be installed on this device. 8. ~~Pretreatment of~~ The water supply ~~may be required per~~ shall meet the manufacturer's specifications. (4) Water Quality monitoring. (a) Chlorine, chloramine.		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				1. As per SPS 382.22 and NR809.565, a daily sample shall be taken at the nearest and the furthest point of ~~hot~~ water use from the injection location and tested for free chlorine residual. 2. A potable water disinfection system that has a properly functioning electronic monitoring device installed to control disinfectant residual shall be one of the following: a. Manually tested at least once a day for disinfectant residual and pH with an approved test kit, or b. Managed by a continuous monitoring system in compliance with a water management plan approved by the department. (b) Quarterly testing for disinfection by-products (DBP) shall be performed. 1. A test kit of a type approved by the department shall be maintained for testing the water pH; the disinfectant residual; and DBP. 2. Water samples should be taken during the day for accurate disinfection levels. A record shall be kept of the daily water quality test data. The data shall include: i. Location of sample ii. Date and time sample taken iii. Sample result iv. Identification of person taking sample (b) Ultraviolet (UV). 1.Total coliform monitoring will be used to evaluate UV treatment effectiveness. The department, on a case specific basis, may require other parameters. The water quality monitoring frequency ~~will~~ shall be as follows: a. A water quality test shall be taken at startup, 2 weeks after startup, once annually, and after disinfection and flushing per SPS 382.40(8)(i). ~~b.~~ ~~i. At startup~~ ~~ii. 2 weeks after startup~~ ~~iii. Once annually thereafter~~ ~~c. Water quality tests shall be taken after disinfection and flushing per SPS 382.40(8)(i).~~ d. A separate sample should be taken upstream and downstream of the device. e. A record shall be kept on the water quality test results. 2. Water system owners ~~are encouraged, but not required,~~ to should routinely monitor effectiveness of the water treatment system. (5) The introduction of chemical additives to the potable water distribution systems of restaurants, schools and health care facilities and health care related facilities is required to be monitored by water operator-in-charge.		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				(a) The operator-in-charge shall make an observation of the disinfection component operation and the disinfection/chemical residual in the storage tank and record the data on a weekly basis. (6) Records. 1. A record shall be kept on dates of cleaning, disinfection procedures, replacement of components or parts, and when the device was shutdown, and the reason for shutdown. 2. Representatives of the department and health services shall be provided access to the water treatment system and records upon request.		
37b.	382.34 (15) (e) (DPD check for duplicate)	Clarification	DIS	(e) *Pump requirements.* 1. A pump or discharge line ~~serving~~ shall serve a containment tank for servicing purposes and shall comply with all of the following:		*3/20/2018 – Motion to adopt.*
37 b1.	382.34 (17) (g)	Implode protection	DIS,. Amended by PAC	~~18. A vacuum relief valve shall be installed in each water treatment appliance that when measured from the bottom of the tank is located more than 20 feet above any faucet or outlet served by the appliance.~~ (17) (g) A vacuum relief valve shall be installed in each water treatment appliance installed more than 20 feet above any faucet or outlet served by the appliance when measured from the bottom of the tank.	Minimal	*10/17/2018 – Motion to adopt as amended.*
37c.	382.35 (3) (e) 2.	Re: Finished basements	DIS	2. A cleanout in a drain stack may serve as the cleanout at the junction of the building drain and building sewer, if the stack is within ~~5~~ 10 feet of where the building drain and building sewer connect. [Note to DPD – Do not amend.]		*3/20/2018 – Motion to reject DIS recommendation and retain original 5 feet requirement.*
38.	382.35 (3) (f)	With the advent of plastic pipe, the rule is outdated.	DIS	*Stacks.* Where a cleanout is provided in a drain stack, the cleanout shall be located ~~28 to 60 inches~~ above the lowest floor penetrated by the stack. *(Rule was written when cast iron was the prevalent material used in stacks and prevented fixture connections into the cleanouts.)*		*6/14/2017 - Motion to adopt.*
38a.	382.35 (6) Table 382.35		DIS, amended by PAC	(6) CLEANOUT SIZE. (renumber) (a) Cleanouts and cleanout extensions shall be sized in accordance with Table 382.35 except as provided in (6) (b). *(6) (b) The replacement or repair of a non-public 6" sanitary sewer may be served by an existing 4" extension within the building.* [Note to DPD – Do not amend table.]		3/20/2018 – Left off here. *5/30/2018 – Motion to not amend table and create an exception. (renumber*

NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				<table><tr><th>Diameter of Pipe Served by Cleanout (inches)</th><th>Minimum Diameter Cleanout Extension (inches)</th><th>Minimum Diameter of Cleanout Opening (inches)</th></tr><tr><td>5</td><td>~~5~~ 4</td><td>4</td></tr><tr><td>6</td><td>~~6~~ 4</td><td>~~5~~ 4</td></tr></table>		*intro to (a) and amend as shown, create (b) with exception language)*
38 a1.	382.36 (3) Note	Repeal note due to new statute language (?)	DIS	Note: Where local discharge requirements are more stringent, stormwater plumb Ing systems may provide detention and treatment to comply with the local stormwater management plan. DIS to seek legal counsel guidance relating to ACT 243 that amended ch. 281, Stats., (DNR statute), relating to stormwater management. [completed]		9/6/2018 – Motion to table. Proposal withdrawn by DIS. Do not repeal note.
38 a2.	382.36 (3) (d) 1. to 7.	Create new par./subd. (d) 1. to 5. Adds manholes to include provision to remove suspended solids for longer detention tanks.	DIS, Amended by PAC	(d) 1. Each compartment of a detention tank used for the reduction of total suspended solids shall be provided with ~~at least one~~ a manhole ~~opening~~ located over ~~either~~ at least one inlet ~~or~~ and at least one outlet. ~~opening.~~ ~~Additional manhole openings shall be provided such that no interior compartment wall of a tank is more than 4 feet from the edge of the manhole opening.~~ For compartments with multiple inlets, a manhole or a cleanout shall be provided shall be provided at additional inlets and outlets. 2. The distance between manhole openings serving the same compartment shall not exceed ~~25~~ 50 feet. 3. A manhole opening shall be not less than 23" in the least dimension. 4. A manhole shall terminate at or above ground surface and be of approved materials. Steel tanks shall have a minimum 2" collar for the manhole extensions permanently welded to the tank. The manhole extension on fiberglass tanks shall be of the same material as the tank and an integral part of the tank. The collar shall have a minimum height of 2". 5. Manhole risers ~~for interceptor tanks~~ shall be provided with a substantial, fitted, watertight cover of concrete, steel, cast iron or other approved material. 6. Manhole covers shall terminate at or above grade and shall have an approved locking device. 7. Tanks shall conform to provisions of s. SPS 384.25. DPD Ensure same language appears in SPS 382.34 (5) (c)1.	Will result in upfront costs but will reduce long-term cost to owners for labor/maintenance/cleaning.	9/6/2018 - *Motion to adopt as amended.*
38 a3.	382.36 (4) (b) 4.	Create 4.	DIS amended by PAC	4. Exterior subsoil drain connections to the storm sewer shall be above the ~~crown~~ top of the storm sewer or by use of a backwater valve.	Provides options.	*9/6/2018 – Motion to adopt.*
38b.	382.36 (6) (a) (Note)	Create note	DIS	SPS 382.36 (6) (a) (Note) is created to read: Note: A culvert is considered plumbing only if a component of a designed storm water management system is [is what?] within a property.		*5/30/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
38 b1.	382.36 (6) (g) 2.	Repeal due to new statute language (?)	DIS	3. Paved surfaces or parking lots serving as detention areas shall be limited to a design depth of 6 inches, unless otherwise limited by local ordinance. Discussion: Will discuss after further explanation of legislation relating to municipal ordinances that are more restrictive.		9/6/2018 – Left off here. *10/17/2018 – Motion to table.* Disregard. Proposal withdrawn by DIS. Keep note.
38c.	382.36 (7) (a) 2.		DIS	2. Where a ~~foundation~~ subsoil drain is subject to backwater, the drain shall be protected by a backwater valve or a sump with a pump.		*5/30/2018 – Motion to adopt as shown.*
38d.	382.36 (7) (d) 1.		DIS	1. The connection of a stormwater leader discharging to a storm building sewer shall be made at or above the finished grade. ~~2.~~ 1m. If ~~flush~~ indirect connection and at finished grade, a removable strainer ~~must~~ shall protect the inlet. The capacity of strainer shall be provided in accordance with s. SPS 382.36 (9) (b).		*5/30/2018 - Motion to create 2. and amend as shown.*
38 d1.	382.36 (8) (a) 4. a.	Revise. See also item # 38d2. "or c." relates to repealed provision.	DIS	a. Except as permitted under subd. 4. b. ~~or c.~~ the size of each sump shall be no smaller than 16 inches in diameter at the top, 14 inches in diameter at the bottom, and 22 inches in depth, but in no case smaller than the manufacturer requirements to ensure sufficient pump run time.		*10/17/2018 – Motion to adopt.* *11/6/2018 – Motion to adopt as amended.*
38d2.	382.36(8) (a)4.c.	Repeal	DIS	~~4. 'Size'. c. 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.~~		*11/6/2018 – Motion to adopt.*
38e.	382.36 (8) (b)	Create 3. under par (8) (b)	DIS	382.36 (8) (b) 3. Clearwater wastewater shall not discharge into a stormwater sump, ~~exception single family dwelling~~ except for one- and 2-family dwellings.	Minimal	*5/30/2018 – Motion to adopt as revised.*
38 e1.	382.36 (8) (a) 4. (new)	Relocated from 382.33 (9) (f) 3. to 5. See #27a6.	DIS	~~Consider creating new section (8m) relating to elevator sumps~~ Create new section (DPD to number subsection as appropriate) ~~(8m)~~ (a) ELEVATOR SUMPS 1. A sump may not be located in an elevator machine room. 2. A drain serving an elevator pit that discharges to a sump shall have a submerged inlet constructed to maintain a minimum trap seal. 3. A sump located in an elevator pit may only receive storm or clear water waste from the elevator pit or the elevator machine room, or both.		*10/17/2018 – Motion to table.* *11/6/2018 - Motion to withdraw proposal.* *Incorporated into other items.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				Discussion: Relocate 382.33 (9) (f) to new section (8m) or (14) relating to elevators and create 1. 2. Drains: Need to also address indirect waste piping and sizing of drain piping. Locate all elevator related provisions under its own section.		
38f.	382.36 (8) (a) 4. c. See #38f1.	Repeal. High pump rates are required in elevator code.	DIS, with rec. by PAC	~~c. 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.~~ 5/30/18: Discussion – sizes should be specified in the plumbing code and the elevator code should reference the plumbing code for plumbing related provisions. 5/30/18: Action Item - DPD (Helen) to discuss PAC recommendation w/Conveyance Advisory Committee. Complete. (For reference, also see ss. SPS 382.33 and SPS 318.1702.) Discussion: Conveyance Council is proposing to repeal these provisions from the elevator code. 10/17/18: Additional collaboration needed between plumbing code and elevator code.		*5/30/2018 – Motion to table the proposed change.* *5/30/2018 - Motion to create code language relating to sump sizes in an elevator pit and request elevator code council to create notes to refer to the plumbing code.* *11/6/2018 - Motion to withdraw proposal.*
38 f1.	382.36 (8) (a) 4. c. (new) See #38f.	New language is required in building code.	DIS	Add under new created section (8m) or (14)? 4. A sump or drain located in an elevator pit shall be sized to accommodate at least one of any of the following: a. 30 gpm in a hoistway with one elevator. b. 50 gpm in a hoistway with two or three elevators. c. 80 gpm in a hoistway with four elevators. Discussion: Intro language is not the same as the building code. Consider revising to match. What are requirements for more than 4 elevators?		*10/17/2018 – Motion to table.* *11/6/2018 - Motion to withdraw proposal.*
38 f2.	~~382.36 (8m) (a) 5. (new)~~ Create 382.30 (11) (b) 3. d.	New language is required in building code.	DIS	382.30 (11) (b) 3. A floor drain shall be provided at the entrance to each elevator door opening. a. The drain shall be capable to receive and discharge 80 gpm. b. The drain may discharge to the sanitary or clearwater drain system. DPD to renumber per drafting procedures.		*10/17/2018 – Motion to table.* *12/18/2018:* No action required. Proposal withdrawn and incorporated in 38f2j.

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				11/6/2018 – Discussion: Belief that this is now a new building code requirement in 2015 IBC. DIS to discuss with elevator and building code program staff regarding 80 gpm and requirement for drain on each floor.		
38f2a.	382.36 (14) ?	Create title, and group all items relating to elevator hoistway drainage. See item 38f2j. for full section.	DIS	Elevator Hoistway Drains. Discussion: Pit vs. Hoistway? Both appear in the Building Code. 362.3002 is titled "Hoistway Enclosures.", however the terms pit, shaft, and hoistway all appear in 362.3002(4) Plumbing and Mechanical Systems. No definitions of "hoistway", "pit", or "shaft" in the building code.		*11/6/2018 – Motion to adopt.*
38f2b.	382.33 (9) (f) renumber to 382.36 (14) (a) ?	See item 38f2j. for full section.	DIS	~~*Elevator drains*~~ *(a) Discharge*.		*11/6/2018 – Motion to adopt.*
38f2c.	382.33(9) (f)1. renumber to 382.36 (14) (a) 1. ?	See item 38f2j. for full section.	DIS	~~All drains~~ Drains serving elevator ~~pits~~ hoistways shall discharge ~~to the storm drain system~~ as specified in s~~. SPS 382.36(4)~~ Table 382.38-1.		*11/6/2018 – Motion to adopt.*
38f2d.	382.33(9) (f)2. renumber to 382.36 (14) (a) 2. ?	See item 38f2j. for full section.	DIS	Drains serving elevator ~~pits~~ hoistways ~~shall~~ may not connect directly with the storm drain system by means of gravity flow piping.		*11/6/2018 – Motion to adopt.*
38f2e.	382.33(9) (f)4. renumber to 382.36 (14) (a) 3. ?	See item 38f2j. for full section.	DIS	A drain serving an elevator ~~pit~~ hoistway that discharges to a sump shall have a submerged inlet constructed to maintain a minimum ~~6"~~ 6-inch trap seal.		*11/6/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
38f2f.	Create 382.36 (14) (b) Title	See item 38f2j. for full section.	DIS	*Sumps.*		*11/6/2018 – Motion to adopt.*
38f2g.	382.33(9) (f) 3. renumber to 382.36 (14) (b) 1.	See item 38f2j. for full section.	DIS	A sump may not be ~~located~~ installed in an elevator machine room.		*11/6/2018 – Motion to adopt.*
38f2h.	382.33(9) (f)5. renumber to 382.36 (14) (b) 2.	See item 38f2j. for full section.	DIS	A sump located in an elevator ~~pit~~ hoistway may only receive storm or clear water waste from the elevator ~~pit~~ hoistway or the elevator machine room, or both. Note: See ch. SPS 382 Appendix for further explanatory material.		*11/6/2018 – Motion to adopt.*
38f2i.	Create 382.36 (14) (c)	See item 38f2j. for full section.	DIS, Amended by PAC	*Size.* Where required, ~~The~~ the aggregate capacity for drainage from the ~~pit~~ hoistway shall be at least one of the following: 1. 30 gpm in a hoistway with one elevator. 2. 50 gpm in a hoistway with two or three elevators. 3. 80 gpm in a hoistway with four elevators.		*11/6/2018 – Motion to adopt.*
38f2j.	382.36 (14)	This section represents items 38fa through 38f2i. Also refer to items 27a6., 38e1, 38f, 38f1, and 38f2.	DIS	382.36 (14) ~~Elevator Hoistway Drains~~ Elevators (a) *Discharge.* 1. Drains serving elevator hoistways shall discharge specified in Table 382.38-1. 2. Drains serving elevator hoistways may not connect directly with the storm drain system by means of gravity flow piping. 3. A drain serving an elevator hoistway that discharges to a sump shall have a submerged inlet constructed to maintain a minimum 6-inch trap seal. (b) *Sumps.* 1. A sump may not be installed in an elevator machine room. 2. A sump located in an elevator hoistway may only receive storm or clear water waste from the elevator hoistway or the elevator machine room, or both. Note: See ch. SPS 382 Appendix for further explanatory material.		This section incorporates previous revisions as shown above. The struck and underlined portions represent new proposed changes. *12/18/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				3. Where a sump is installed in an elevator hoistway, the rim ~~may~~ shall be level with the floor. 4. A sump shall have a removable cover of sufficient strength for anticipated loads. (c) *Size*. Where required, the aggregate capacity for drainage from the hoistway shall be at least one of the following: 1. 30 gpm in a hoistway with one elevator. 2. 50 gpm in a hoistway with two or three elevators. 3. 80 gpm in a hoistway with four elevators. (d) *Floor drains serving elevator door areas.* When installed, emergency floor drains intended solely to minimize the infiltration of water into an elevator hoistway, shall utilize the conditions of this paragraph. 1. In lieu of individual traps, a single trap may serve multiple floor drains on a single floor. 2. Where multiple floor drains are served by one trap, an untrapped floor drain may serve the cleanout requirements under s. SPS 382.35(3)(a). 3. Discharge shall be as specified in Table 382.38-1. 4. Drain piping serving a single floor, or any portion thereof, shall be sized to accommodate the anticipated design discharge of the fire sprinkler heads that present the potential of introducing water into the elevator hoistway. 5. Where multiple floor levels are served by a single stack, it is permissible to size any portion of that stack to accommodate the anticipated design discharge of the fire sprinkler heads serving a minimum of two floors. 6. A drain stack in connection with only floor drains serving elevator door areas may utilize a combination drain and vent system under s. SPS 382.31(17)(a)3. Discussion: Floor drain inside buildings and may go to sanitary system or storm. Purpose is to stop from going into drain. Number of floors are included in CBC. Ensure this is covered Table 382.38, and safing exceptions in SPS 384. [Ryan]		
38f2k	382.36(8)(a)2.	Needed for new elevator sub.	DIS	'Construction and installation'. a. Except as provided in subd. 2. c. and d. and sub. (14) (b), an interior sump shall have a rim extending at least one inch above the floor immediately adjacent to the sump.	none	*12/18/2018 – Motion to adopt.*
38f2L	382.36(8)(a) 2.c.	Needed for new elevator sub.	DIS	Where a sump is installed in an exterior meter pit ~~or elevator pit~~, the rim may be level with the floor.	none	*12/18/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
38f2m.	382.35 (3) (a)	Needed for new elevator sub.	DIS	WHERE REQUIRED. (a) *Horizontal drains*. ~~All~~ Except as permitted under s. SPS 382.36 (14)(d)2., all gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements:	none	*12/18/2018 – Motion to adopt.*
38f2n	382.31 (17) (a)	If unchanged, combination drain & vent stacks wouldn't be allowed in 382.31(17)(a) 2. Change also needed for new elevator sub.	DIS	*Stacks.* 1. ~~A~~ Unless otherwise permitted in subd. 2. or 3., a drain stack may serve as a combination drain and vent system for fixtures in accordance with subd. 1. a. to e.	none	*12/18/2018 – Motion to adopt.*
38f2o	382.31 (17)(a)3.	Create. Needed for new elevator sub.	DIS	A drain stack may serve as a combination drain and vent system for floor drains serving elevator door areas in accordance with subd. 3. a. to e.	none	*12/18/2018 – Motion to adopt.*
38f2p	382.31 (17)(a)3.a.	Create. Needed for new elevator sub.	DIS	The drain stack shall be limited to serving emergency floor drains serving elevator door areas.	none	*12/18/2018 – Motion to adopt.*
38f2q	382.31 (17)(a)3.b.	Create. Needed for new elevator sub.	DIS	The drain stack shall not be offset horizontally above the lowest branch connection.	none	*12/18/2018 – Motion to adopt.*
38f2r	382.31 (17)(a)3.c.	Create. Needed for new elevator sub.	DIS	The developed length of any trap weir vented by the stack to the drain stack shall not exceed the limits specified in Table 382.31–1.	none	*12/18/2018 – Motion to adopt.*
38f2s	382.31 (17)(a)3.d.	Create. Needed for new elevator sub.	DIS	Emergency floor drains, provided with individual traps that utilize other means of venting, are permitted to discharge into the stack.	none	*12/18/2018 – Motion to adopt.*
38f2t	382.31 (17)(a)3.e.	Create. Needed for	DIS	A vent, at least 2 inches in diameter but not less than ½ the diameter of the largest portion of the drain stack, shall extend from immediately above the highest branch connection to a vent terminal in accordance with sub. (16).	none	*12/18/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		new elevator sub.		Note: See ch. SPS 382 Appendix for further explanatory material.		
N/A	382.31 (17)(a)3.	This section represents 38f2o to 38f2t.		382.31(17)(a)3. A drain stack may serve as a combination drain and vent system for floor drains serving elevator door areas in accordance with subd. 3. a. to e. a. The drain stack shall be limited to serving emergency floor drains serving elevator door areas. b. The drain stack shall not be offset horizontally above the lowest branch connection. c. The developed length of any trap weir vented by the stack to the drain stack shall not exceed the limits specified in Table 382.31−1. d. Emergency floor drains, provided with individual traps that utilize other means of venting, are permitted to discharge into the stack. e. A vent, at least 2 inches in diameter but not less than ½ the diameter of the largest portion of the drain stack, shall extend from immediately above the highest branch connection to a vent terminal in accordance with sub. (16). Note: See ch. SPS 382 Appendix for further explanatory material.		Informational only. No action required.
38 f3.	382.36 (9) (b) 3.	Confusing. Both inlets and outlets are applicable.		'~~Inlet grates~~ Grates'. a. General. All inlets shall be provided with a well−fitted, removable grate of a thickness and strength to sustain the anticipated loads.	None	*10/17/2018 – Motion to adopt.*
38 f4.	382.36 (10c)	Create new section (10c)	DIS, amended by PAC	(10c) ~~CONTROLLED ROOF DRAINS~~ CONTROLLED FLOW ROOF DRAINS ~~SYSTEMS~~. ~~(a) *Sizing.*~~ When ~~control~~ controlled flow roof drains ~~systems~~ are installed, the ~~control flow~~ system shall be sized and installed in accordance with the requirements in this section. ~~(b)~~ (a) *Drain down.* ~~Control~~led ~~flow roof drain systems~~ The detention area shall drain down within 24 hours after the rainfall event. ~~(c)~~ (b) Prohibited connections. ~~Controlled flow roof~~ The drains ~~systems~~ may not be connected to secondary roof drain systems or clearwater waste systems. ~~(d)~~ (c)*Discharge.* ~~All control~~led ~~flow roof drain systems~~ The system shall discharge in accordance with Table 382.38–1. ~~(e)~~ (d) Rain fall rate. Controlled flow roof drainage systems shall be engineered based on the required rainfall rate per SPS 382.36(5) and utilizing a minimum 10 year-24 hours rain event. ~~(f)~~ (e) *Drains.* Controlled flow roof drains shall utilize the same drain as specified in the engineered system.		*10/17/2018 – Motion to table.* *11/6/2018 – Motion to adopt as amended.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				~~(g)~~ (f) *Overflow.* Secondary roof drain systems serving controlled flow roof drain~~age~~ systems shall be sized for the 100-year, 24-hour storm event, including all cascading loads from higher elevation overflows. ~~(h)~~ (g) *Roof Structures.* Roof structures served by controlled flow roof drain~~age~~ systems shall be engineered in accordance with IBC ~~Section~~ section 1611.3. Discussion: Should the term be "controlled flow roof drains", "control flow roof drain systems", or "controlled roof drains"? Term used should reflect industry standard language and be consistent throughout.		
38 f5.	382.36 (10d)	Create new section (10d)	DIS, Amended by PAC	(10d) SIPHONIC ROOF DRAINS. ~~(a) *Sizing.*~~ When siphonic roof drain systems are installed, the ~~siphonic~~ system shall be sized and installed in accordance with the requirements in this section. ~~and ASPE/ASNI Technical Standard 45-2013.~~ ~~(b)~~ (a) *Drain down*. ~~Siphonic roof drain systems~~ The detention area shall drain down within 24 hours after the rainfall event. ~~(c)~~ (b) *Prohibited connections.* Siphonic roof drain systems may not be connected to conventional roof drain~~age~~ systems, secondary roof drain systems, controlled flow roof drainage, or clearwater waste systems. (c) *Discharge.* ~~All controlled flow roof drain systems~~ The system shall discharge in accordance with SPS Table 382.38–1. (d) *Rain fall rate.* Siphonic roof drain systems shall be engineered based on the required rainfall rate per SPS 382.36 (5) and utilizing a minimum 10 year-24 hours rain event. (e) *Drains.* Siphonic roof drain~~s~~ systems shall ~~be~~ utilize the same drain as the engineered system. (f) *Overflow.* Secondary roof drain systems serving siphonic roof drain systems shall be sized for the 100-year, 24-hour storm event, including all cascading loads from higher elevation overflows ~~or scuppers~~. ~~(h) *Piping design.* Hydraulic designs shall be compiled by the manufacturers, ASPE/ANSI Technical Standard 45-2013, ASTM standard F 2021-06, and ASME A112.6.9-2005.~~ (g) *Roof Structures.* Roof structures served by siphonic roof drain systems shall be engineered in accordance with IBC Section 1611.3. (h) *Siphon break.* A siphon break shall be provided downstream of a siphonic roof drain system. Note: See appendix for further explanatory material. (DPD/DIS: Add reference to standards to the appendix. Include language in note that the standards may be used to comply with this section.)		*10/17/2018 – Motion to table.* *11/6/2018 – Motion to adopt as amended.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
38 f6.	382.36 (11)	Create new pars. under section SECONDARY ROOF DRAINS.	DIS, amended by PAC	(d) *Rain fall rate.* Secondary roof drain systems ~~flow roof drainage systems~~ shall be sized for the 100-year, 24-hour storm event, including all cascading loads from higher elevation overflows ~~or scuppers~~. (e) *Overflow drains.* Secondary overflow drains and overflow standpipes rim elevations ~~shall~~ may not exceed 5 inches in height above the adjacent roof elevation served by the primary roof drains. ~~(f) *Roof Structures.* Roof structures served by controlled flow roof drainage systems shall be engineered in accordance with.~~		*10/17/2018 – Motion to table.* *11/6/2018 – Motion to adopt as amended.*
38g.	382.36 (12) (a) 4.		DIS, amended by PAC	4. A ~~foundation~~ subsoil drain that discharges by gravity to a storm sewer shall be trapped. ~~A storm building drain serving a stormwater sump shall be trapped.~~ The trap shall be provided with cleanouts.	n/a	*5/30/2018 – Motion to adopt as amended.*
38h.	382.36 (12) (b) 2. a.		DIS	a. Vents serving a solid covered sump shall terminate a minimum of one inch above finished floor or in accordance with s. 382.31 (16) except for subd. par. (d) 2. c. In lieu of a separate vent, a sealed sump may incorporate a radon vent connected to the subsoil drain or sump cover.	minimal	*5/30/2018 – Motion to adopt as amended.* *11/6/2018 – Motion to withdraw proposal.*
38i.	382.36 ~~(12) (b)~~ (8) (a) 5.	Create new subdivisions See #38h.	DIS, amended by PAC	~~(b) 3. A storm or clearwater sump with a solid cover shall be vented.~~ ~~4. A radon vent may serve a solid covered sump.~~ (8) (a) 5. *Solid covered sumps*. A storm or clearwater sump with a solid cover shall be vented. The vent shall terminate a minimum of one inch above finished floor and sized as per SPS Table 382.31-4. In lieu of a separate vent, a sealed sump may incorporate a radon vent connected to the subsoil drain or sump cover.		*10/17/2018 – Motion to table.* *11/6/2018 – Motion to adopt as amended.*
38j.	382.36 (13) (b)	Additional information needed to review plans.	DIS	*Plan information.* An operation and maintenance plan as required in par. (a) shall include at least all of the following information~~,~~ applicable to the system: 1c. Pre-construction runoff volume. 1g. Post-construction runoff. 1n. Infiltration volume. 1r. Detention volume. Renumber from 1 to 1w. Accumulated solids or byproduct removal requirements. 2. Identification of standards. DPD: renumber per drafting rules.	minimal	*10/17/2018 – Motion to table.* *11/6/2018 – Motion to adopt as amended.*
39.	382.365 (3) (a)	Confusing language. Infiltration is separate from reuse.	DIS	INFILTRATION SYSTEM DESIGN. (a) *Influent quality.* For stormwater and clearwater ~~infiltration~~ plumbing systems, the influent quality shall comply with the requirements in Table 382.70−1 for subsurface ~~infiltration and~~ irrigation. *6/4/17 Discussion: Infiltration is another section of rule.*		*6/14/2017 - Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
40.	382.365 (3) (b) 3.	New Alternate standard. DNR sets standards for discharge. Reflects technology changes in NR 151. DNR approval not required.	DIS	3. The installation of a stormwater infiltration system where engineered soil is incorporated in lieu of in situ soil shall comply with the following stipulation: a. The engineered soil composition shall be engineered to meet the specifications listed in the Wisconsin Conservation Practice Standard 1004 (Bioretention for Infiltration). b. The engineered filtering layer shall be located above any limiting factor identified within the soil report. *c.* The engineered soil shall not be less than 24 inches in depth, or 18 inches with ~~DNR~~ supporting documentation.	Allows flexibility. Less restrictive.	*6/14/2017- Motion to adopt.*
41.	382.365 (3) (b) 1.	Incorporating DNR Wis. Conservation Practice Standard 1002 Repeals tables 382.365-1 to 3 and adopts 1002 and 1004 as referenced standards.	DIS	Except as provided in subd. 2., the minimum depth of suitable in situ soil for infiltration systems shall be ~~as specified in Table 382.365-1~~ 5 feet of suitable soil separation where the soil contains greater or equal to 10 percent and less than or equal to 20 percent fines or 3 feet of suitable soil separation where the soil contains greater or equal to 20 percent fines exist to separate the system from the highest groundwater elevation or bedrock. When groundwater mounding calculations affect the depth to seasonal groundwater, the depth of suitable soil shall be measured to the calculated elevation of mounded groundwater. 1002 standard is now requiring pits and is equivalent to SPS 385 soil testing. Standard 1002 - Site Evaluation for Storm Water Infiltration (Link to DNR website) Standard 1004 - Biotention for Infiltration (Link to DNR website) Note: See appendix for explanatory material. *(DPD/DIS to determine if standards will be placed in table in SPS 381 (adopted) or in appendix.)*		*6/14/2017 - Motion to Table 41-45 until next meeting.* *8/9/2017 - Motion to table 41-45 until final copy of standard 1002 is available.* 5/30/2018 – DPD to provide links to final versions of standards.
41a.	382.365 (3) (b) 2.	Create subd.3. 8/18 – delete DNR and replace with department	DIS	3. Where engineered soil is incorporated in lieu of in situ soil as an equivalent filtering layer, the following shall apply: engineered soil shall meet specifications listed in the Wisconsin Conservation Practice Standard 1004, The filtering layer shall be above any identified limiting factor, and the engineered soil shall not be less than 24 inches, or 18 inches with ~~DNR~~ department approval.		*5/30/2018 – Motion to table.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
42.	382.365 (4)	Codifying current practice	DIS	INSTALLATION. (a) Bioretention systems shall comply with Wisconsin Conservation Practice Standard 1004 & ? Renumbered to (b): *Orientation.* Except for subsurface irrigation systems, all of the following shall apply: Discussion: Wisconsin Conservation Practice Standard 1004 contains best practices specific construction requirements.		*8/9/2017 - Table until final copy of standard 1002 is available.*
43.	382.365 (c)1.	Incorp. WI Conservation Practice Standards	DIS	The maximum hydraulic application rate shall be determined by soil analysis in accordance with ~~sub. (2) (b) and Table 382.365–2~~ Wisconsin Conservation Practice Standard 1002.		*8/9/2017 - Table until final copy of standard 1002 is available.*
44.	382.365 (c)2.	Incorp. WI Conservation Practice Standards	DIS	The maximum hydraulic application rate shall be determined by field measurement using a nationally–accepted method and the correction factor as determined using Wisconsin Conservation Practice Standard 1002.~~Table 382.365–3~~. To determine the maximum hydraulic application rate, the measured infiltration rate at the infiltrative surface shall be divided by the correction factor as listed ~~in Table 382.365–3~~.		*8/9/2017 - Table until final copy of standard 1002 is available.*
45.	382.365 (c)2.	Incorp. WI CP Standards. Relates to storms	DIS	Repeal Table 382.365-1 to 3.		*8/9/2017 - Table until final copy of standard 1002 is available.*
45a.	382.37 (2) (g)	Revise	DIS	(g) A permanent supply of water shall be provided to wash down the drain receptor and pad. The water supply shall be:		*10/17/2018 – Motion to adopt.*
45b.	382.37 (3) (a) 8.	Create new subd. 8.	DIS, Amended by PAC	8. A camping unit may discharge wastewater into a transfer ~~container~~ tank. The connection to the transfer ~~container~~ tank shall be made water tight. The transfer ~~container~~ tank shall be provided ~~container~~ tank with a minimum 2-inch ~~screened~~ vent that is screened or turned downward.		10/17/2018 – Left off here. *11/6/2018 – Motion to adopt as amended.*
45c.	382.37 (3) (b) 2. a. and b.	Revised, add new language, a.	DIS	~~a.~~ If water is provided to a campsite, individual approved backflow protection shall serve each hose connection in accordance with s. SPS 382.41. ~~a.~~ Wye connectors are prohibited.		11/6/2018 – Left off here. *12/18/2018 – Motion to adopt 2. as amended.*
45c1.	382.365 (3) (a) 1.			1. Prior to infiltrating, pretreatment shall be performed for parking lot and new road construction.		*12/18/2018 – Motion to adopt.*

<table>
<tr><th>NO.</th><th>RULE PROVISION</th><th>ISSUE/REASON FOR CHANGE</th><th>PROPOSED BY</th><th>EXISTING LANGUAGE AND PROPOSED CHANGE</th><th>POTENTIAL IMPACT/COST</th><th>COMMENTS/STATUS</th></tr>
<tr><td>45d.</td><td>382.37 (3) (b)
4. and 5.</td><td>Create new subd. 4. and 5. due to ch. 327 – campground code.</td><td>DIS</td><td>4. The water connection to a camping unit may be plumbed direct if the fixtures comply with provisions of chs. SPS 382 and 384.
5. An indirect water connection may be made to a camping unit with approved cross connection control.</td><td></td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>46.</td><td>382.37 (3) (b) 4.</td><td>New - Issues w/water supply quality & effective means to flush out system.</td><td>DIS, amended by PAC</td><td>A camping unit may discharge wastewater into a transfer container. The connection to the transfer container shall be made water tight. The transfer container shall be provided with a minimum 2-inch screened vent.</td><td>More restrictive</td><td>6/14/2017 - Left off here.
8/9/2017 - Motion to create language as shown.
8/9/2017 - Motion to create note “See Appendix 382 for additional information.”
8/9/2017 - Motion to add table 10.10.2.1.3 to appendix 382.</td></tr>
<tr><td>46a.</td><td>Table 382.38-1
4m. and 9m.</td><td>Revise table, Add new uses 4m. and 9m.</td><td>DIS</td><td>Table 382.38 – 1
Allowable Discharge Points by Fixture or Specific Uses
<table>
<tr><th>Use or fixture</th><th>POWTS[a]</th><th>Municipal Sanitary Sewer</th><th>Municipal Storm Sewer</th><th>Ground Surface</th><th>Combined Sanitary–Storm Sewer</th><th>Subsurface Dispersal[i]</th></tr>
<tr><td>4m. Elevator door area drains</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr>
<tr><td>9m. Open public parking levels</td><td></td><td></td><td>X</td><td>X[b]</td><td>X</td><td>X</td></tr>
</table>
Discussion: Open parking lot is covered under CBC.</td><td></td><td>12/18/2018 – Motion to adopt as amended.</td></tr>
<tr><td>46b.</td><td>382.40</td><td>New</td><td>DIS</td><td>Minimum emergency fixture water supply requirements are as follows:
Eye wash --------- .4 gpm’s
Face wash --------- 3 gpm’s
Drench hose ---- --3 gpm’s
Drench shower – 20 gpm’s</td><td></td><td>12/18/2018 – Motion to not adopt.

Disregard. Proposal is withdrawn by DIS.</td></tr>
<tr><td>46c.</td><td>382.40 (3) (b)</td><td>Revise</td><td>DIS</td><td>(b) Hot water required. Except as provided in subds. 1. And 2., hot water shall be provided to all plumbing fixtures, appliances and equipment used for personal washing, ~~building maintenance,~~ culinary purposes, ~~or~~ laundering, or a sink used for building maintenance in a public building.</td><td></td><td>12/18/2018 – Motion to adopt as amended.</td></tr>
</table>

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
46d.	382.40 (3) (d) 4.	Revise	DIS	4. The installation of each reduced pressure principle backflow preventer, reduced pressure principle 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.		*12/18/2018 – Motion to adopt.*
47.	382.40 (3) (e)	Code not able to keep pace w/changes to the date of the standard.	DIS	*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 ~~the current~~ NFPA 13D. Consider additional language to address multifamily facilities. [DPD response: The term "current" standard may not be used in code. Each version of a standard needs to be reviewed and if adopted, year of standard must be specified.]		8/9/2017 - No committee action required.
47 a1.	382.40 (3) (e)	Create new exceptions	DIS	~~2.~~ *(e) Multipurpose piping system.* ~~Except as provided in subd. 2., With the following exceptions.~~ ~~1.~~ ~~3.~~ 2.Materials for multipurpose piping systems need to be acceptable under NFPA 13D or 384.30(4)(e) and 384.30(5). ~~2. a.~~ 3. A partial or single sprinkler per NFPA 13D may be installed in a dwelling unit not required to be sprinkled. ~~3. b.~~ 4. Limited purpose or limited area sprinklers may be installed in areas not required to be sprinklered. ~~4. c.~~ 5. Five gpm shall be added onto the multipurpose calculations for each dwelling connected to a common water supply system. ~~5. 4.~~6. A flow test shall be performed at the controlling sprinkler before the system is put into operation. *List the exceptions. DPD renumber as needed. [Ryan]*	Less restrictive	*12/18/2018 – Motion to adopt.*
47 a2.	382.40 ~~(5)~~ (3) (c) 4.	Create new subd. 4.	DIS	(3)(c)4. The water supply system shall be protected from thermal expansion when a closed system is created.		*12/18/2018 – Motion to adopt.*
47a.	382.40 (5) ~~(am)~~	Incorporate language from SPS 325 (UDC) due to repeal of s. SPS 325.01 (2) (a) to (c).	PAC	Create SPS 382.40 (5) ~~(am)~~ (DPD to renumber: need intro, renumber a. to 1., create 2., a., and b.) ~~(am) *Tankless water heaters.*~~ 2. The minimum flow rate of a tankless type water heater may be obtained by multiplying 0.65 by the calculated hot water gallons per minute demand, as determined by SPS 382 Tables 382.40–1b and 382.40–3, provided the heater will achieve a water temperature of 110° F at the terminal fitting or faucet. a. The sizing method in ~~para~~ subd. ~~(a)~~ 1. may not be used for sizing a water heater serving a high-flow fixture, a hose bibb, a hydrant, or a fixture that is required to have a supply line with a diameter larger than one-half inch.		*9/19/2017 - Motion to create SPS 382.40 (5) (am) and repeal 382.40 (5) (a) (note).*

<table>
<tr><th>NO.</th><th>RULE PROVISION</th><th>ISSUE/REASON FOR CHANGE</th><th>PROPOSED BY</th><th>EXISTING LANGUAGE AND PROPOSED CHANGE</th><th>POTENTIAL IMPACT/COST</th><th>COMMENTS/STATUS</th></tr>
<tr><td></td><td></td><td></td><td></td><td>b. For the purposes of this subsection, “high-flow fixture" means a fixture with a flow rate of more than 4 gallons per minute, at 80 pounds per square inch, and a water velocity not exceeding 8 feet per second.

Repeal Note: ~~SPS 382.40 (5) (a) (note) Note: Residential exclusion see s. SPS 325.01 (2).~~</td><td></td><td></td></tr>
<tr><td>47b.</td><td>382.40 (5) (b) 1. a.</td><td>Create new subd. par. a.</td><td>PAC</td><td>~~a. A hot circulation system shall be independent of other systems.~~
a. A hot water circulation system connection shall be made downstream of the control valve serving the water heating device.</td><td></td><td>12/18/2018 – Motion to adopt as amended.</td></tr>
<tr><td>47c.</td><td>Table 382.40–2</td><td>Revise table re: fixture types, Add new residential type</td><td>DIS</td><td>Table 382.40–2
Water Supply Fixture Units for Public Use Fixtures
<table>
<tr><th>Type of Fixture[a]</th><th>Hot</th><th>Cold</th><th>Total</th></tr>
<tr><td>Automatic Clothes Washer, Individual Commercial Type</td><td></td><td></td><td></td></tr>
<tr><td>Automatic Clothes Washer, Large Capacity Commercial Type</td><td></td><td></td><td></td></tr>
<tr><td>Automatic Clothes Washer, Residential Type</td><td>1</td><td>1</td><td>1.5</td></tr>
</table></td><td></td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>48.</td><td>382.40 (7) (d)1.</td><td>Additional pressure need by manufacturers</td><td>DIS, amended by PAC</td><td>Except as provided in subd. 1. a. to ~~c~~ d., water supply systems shall be designed to provide at least 8 psig of flow pressure at the outlets of all fixture supplies.
d. Minimum pressure required by manufacturer for fixture, or appliance, or equipment to operate.</td><td></td><td>8/9/2017 - Motion to adopt as amended.</td></tr>
<tr><td>48a.</td><td>382.40 (7) (d) 4.</td><td>Revise</td><td>DIS</td><td>4. If the pressure or water supply volume available from the water main or private water supply is inadequate by calculation to provide the minimum pressures specified in subd. 1., a hydropneumatic pressure booster system or a water pressure booster pump ~~shall~~ may be installed to increase the supply of water.</td><td></td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>48b.</td><td>382.40 (7) (d) 4. a.</td><td>Revise</td><td>DIS</td><td>4.a. Each water pressure booster pump shall be provided with an automatic low-pressure cut–off switch. The cut–off switch shall be located on the inlet side of the pump and shall be set to terminate the energy supplied to the pump when a positive pressure of less than 10 psig occurs. Pressure gauges shall be installed on the influent and effluent piping.</td><td>Minimal</td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>48c.</td><td>382.40 (7) (e)</td><td>Revise</td><td>DIS</td><td>(e) Maximum velocity. A water distribution system shall be designed so that the flow velocity does not exceed 8 feet per second, except for combination sprinkler distribution piping as designed in par. (3) (e).</td><td></td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>49.</td><td>382.40 (8) (b) 10.</td><td>New – Water supply quality issues</td><td>DIS, amended by PAC</td><td>Private water mains shall be provided with provisions for effective flushing of the system, at a minimum of 10 feet per second until clear.
Note: See ch. SPS 382 appendix for further explanatory information.</td><td>More restrictive</td><td>8/9/2017 - Motion to amend provision as shown and add note</td></tr>
</table>

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		and inability to effectively to flush lines.		[Note to DPD.: Ensure notes refer to correct reference.]		*in Appendix referring to Table 10.10.2.1.3.*
49a.	382.40 (8) (d) 3. b.	Revise	DIS, amended by PAC	3.b. The minimum diameter of water distribution piping serving as a meter bypass ~~shall~~ may be one nominal pipe size smaller than the ~~meter~~ required diameter of the distribution piping.	Less restrictive	*12/18/2018 – Motion to as amended.*
50.	382.40 (8) (d) 7.	New - Issues w/water supply quality & effective means to flush system.	DIS, amended by PAC	Create: The main water distribution ~~systems~~ piping one nominal pipe size over code minimum shall ~~be~~ provide~~d with provisions~~ for effective flushing of the system at 8 feet per second. 8/9/17 Discussion: Hospitals inability to flush lines due to oversizing for future expansions resulting in bad water quality. Consider rule re: how long water can remain stagnant without flushing. Sediment builds up and high levels of lead showing up in drinking fountains.	More cost effective than to retrofit. [Need cost]	*8/9/2017 - Motion to adopt as amended.* *8/9/2017 - Motion to add table to 382 Appendix similar to Table 10.10.2.1.3 but revise to 8 feet per second flow rate for nominal pipe sizes.*
51.	382.40 (8) (i)	Protection of public health. Incorporates IPC & UPC model codes.	DIS, amended by PAC	*Flushing and disinfection of potable water supply systems.* 1. a. Before a newly constructed water supply system is to be put into use, the piping of the system shall be ~~filled~~ flushed with water and disinfected. ~~and allowed to stand for at least 24 hours.~~ ~~After 24 hours~~ Each water outlet shall be flushed beginning with the outlet closest to the building control valve and then each successive outlet in the system. The flushing at each water outlet shall continue for at least one minute and until the water appears clear and with no trace of disinfectant at the outlet. b. Each portion of a water supply system which is altered or repaired shall be flushed for at least one minute and until the water appears clear. *Check IPC and UPC provisions for disinfection for potable water supply systems. Review guidance documents for disinfection and incorporate into code.* *Could incorporate language from IPC 610.* 10/10/17: Discussion: Injecting chemicals into water system – chlorine gas – discussion between DIS and DNR. DNR has jurisdiction from tap. What is committee's recommendation re: plan review for additives into water system? For abandoned well, put new in. Now have to treat water – DIS does plan review. Inspected to ensure proper operations, followed up with DNR, not aware with DHS inspections – may check for bacterial free.		*8/9/2017 – Motion to table until next meeting to identify standard.* *10/10/2017 – Motion to adopt language as amended.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				Health concerns, DIS finds out after the fact during routine inspections, added after plan review. Concern: 200 parts per million – safety concern for occupants inside a building.		
51 a1.	382.40(8) (jm)	New Code	DIS, amended by PAC	[Add "Scope" phrase. Water tanks for public, potable use shall meet the criteria set forth in this section.] (8) (jm) *Water tanks.* 1. Pneumatic pressure tanks. Pneumatic pressure tanks shall conform to all of the following: a. Tanks shall conform to ch. SPS 384. b. Tanks shall be served by a pressure relief valve. c. Tanks shall be able to be isolated for maintenance, repair, or replacement and equipped with a drain valve by means of a control valve. d. Water calculations incorporating the size of a pneumatic pressure tank may use a 5-minute peak flow in gpm for the water supply system. The system shall be designed to minimize stagnation. e. Tanks shall be stamped or labeled showing the manufacturer's name, model number, the tank volume, year manufactured, and the allowable working pressure. 2. Storage tanks. a. Storage tanks ~~shall be sized to turn over a minimum of once every three days.~~ ~~b. Tanks~~ shall conform to s. SPS 384.25. Don't put under separate section. Renumber. 3. Protection. Storage tanks shall be constructed and maintained to protect the water supply in accordance with the following requirements: a. All water storage tanks and structures shall be watertight which exclude water, rain, snow, birds, animals, insects, and dust. b. Exterior translucent tanks shall be covered. 4. Potable water. Potable water may not be stored in a tank or compartment adjacent to nonpotable water when the two compartments are separated by a single wall. 5. Locks. Locks shall be provided on access manholes, inspection covers, fill pipe, fences, ladder cage bottoms, and any other measures deemed necessary to prevent trespassing, vandalism, and sabotage.		*12/18/2018 – Motion to adopt as amended.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
				6. Drains. ~~a. General drain discharge requirements.~~ Piping used for purposes, to drain a storage tank or structure, shall discharge to the ground surface through an air gap. The drain may discharge over a drainage inlet receptor, splash pad, or rip rap. 7. Overflow. a. Tanks or reservoir shall be provided with overflow piping and shall be brought down to within 6 to 12 inches above graded–normal surfaces. The pipe shall open downward over a drainage inlet, splash pad, or rip rap. Interior tanks within the building structure shall provide overflow piping discharging to an approved clearwater receptor, or as approved by the department. b. The overflow outlet pipe shall be provided with a 4-mesh non-corrodible screen. c. The overflow outlet pipe shall be of approved water distribution as per SPS Table 384.30-8. d. The overflow outlet pipe shall be sized and of sufficient diameter to permit discharge flow in excess of the maximum fill rate of the inlet pipe flow. e. Overflow piping shall be visible at the discharge location. f. Storage tanks or reservoirs with more than one compartment and each compartment can be isolated from the rest of the tanks or reservoirs shall be provided with its own overflow pipe. 8. Inlet and outlet piping. a. Inlet and outlet piping from a tank or storage structure shall be sized in accordance with SPS 382.40(7). b. Piping shall be of approved materials in accordance with SPS Table 384.30-8 for locations within the building, above floor, SPS Table 384.30-7 for locations below grade and outside of the building foundation parameters. 9. Access. a. Water tanks or structures shall have convenient access for cleaning and maintenance. b. Manhole openings shall be fitted with a solid watertight cover which overlaps the framed opening and extends down around the opening frame a minimum of 2 inches. A water tight gasket shall be attached to the bottom side of the manhole cover. c. Manhole covers for buried tanks or structures shall be no less than 24 inches above a sloped finished grade. ~~d. Manholes shall be locked at all times except when being used by authorized personnel.~~ e. Inspection covers shall be water tight and ~~locked~~ secured to prevent unauthorized access. f. Interior paints or coatings shall conform to NSF/ANSI Standard 61 ~~certified~~.		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
				10. Bypass Piping. Bypass piping shall be provided allowing the tank or reservoir to be taken out of service for maintenance and inspection purposes when directly connected to a ~~water service~~ well or municipal water ~~service~~ supply. 11. Vents. a. Storage tanks shall be vented to the atmosphere. The overflow pipe may not be considered a vent. b. Vents shall be constructed of water distribution materials as per SPS Table 384.30-8, or as approved by the department. c. Vents shall terminate above the top of the tank in a U-bend or vent cap with the opening or 24 to 36 inches above grade and covered with a 24-mesh stainless steel screen at a location that is secured. d. Minimum vent size shall allow an air flow consistent with water inflow and outflow rates. Minimum size shall be 2 inches. 12. Location. a. Exterior tanks may not be located within a flood plain or floodway or within 2 feet above the regional flood elevation. b. Grading the surrounding area shall be such that surface water will not stand within 50 feet of the storage tank. c. Storage tanks shall be located in an area that is accessible year-round. d. Contamination sources such as sewers, drains, fuel storage tanks, or standing water shall be kept a minimum of 50 feet from the tank or as approved by the department. e. The top roof of an exterior tank may not be less than 2 feet above the normal ground surface. 13. Controls. a. Atmospheric pressure tanks shall have a means for maintaining pressure within the building water distribution system. A hydro-pneumatic tank, pump facilities, or other reliable methods shall be provided to maintain system pressure. b. Manual valves shall be installed in the water distribution system to isolate tank and pump equipment from the water distribution system. c. Valves designated for operation of the storage tank shall be visibly recognized as being open or closed. Solenoid valves shall have a control system panel that will have indicators showing visual valve open or closed status. d. Drain valves shall be provided for maintenance purposes for access to the storage tank. ~~e. Water supply inlet piping shall be provided with a control valve check valve, or solenoid valve~~.		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
				f. High water fill valve or float valve shall maintain the storage tank levels to the minimum water storage required for use. A bypass to the fill valve shall be provided. g. Tank water levels shall be ~~able to be observed~~ observable by means of a sight level indicator. h. A pressure gauge shall be installed downstream of the storage tank and booster pumps. i. A thermometer or sensors shall be installed on the storage tank for water temperature monitoring purposes. 14. Water supply. a. The influent water supply to the storage tank shall be from an approved source and controlled to maintain the minimum and maximum water levels. b. The influent water supply shall terminate a minimum of 6 inches above the high-water level. c. The influent water supply piping shall be provided with a control valve. 15. Pumps. ~~a. Influent pumps providing potable water shall be operated at least once a per week and provided with a check valve, sampling faucet, isolation valves, and pressure gauge.~~ ~~b~~a. ~~Booster pumps~~ Pumps shall be installed according to the manufacturer specifications and s. SPS 382.40(7)(d)4. ~~c. Effluent pumps shall be installed to provide continuous flow through the storage tank, and connect to the water distribution system.~~ ~~d. A flow rate equal to the storage tank capacity shall be provided within a 24-hour period.~~ ~~e~~b. ~~The secondary pump~~ Pump piping shall have required check valves, pressure gauge, isolation valves, and sampling faucet installed on the system. ~~f~~c. ~~The effluent water from the storage tank to a booster pump shall be provided with a shut off for maintenance purposes.~~ 16. Disinfection. ~~Except for surge use, continuous~~ Continuous water treatment is required for all storage tanks ~~greater than 200 gallons~~ through a constant water flow through the potable water storage tank. All of the water tank volume shall be turned over every 24 hours.		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				17. Labeling. All piping and control valves serving the storage tank water system shall be labeled in accordance with SPS Table 382.40-1a for specific use. ~~They~~ Labels shall be grey, triangular with 4-inch sides, and labeled as "Potable Water, Storage Tank". 18. Storage tank inspections. a. The interior and exterior of water storage facilities shall be regularly inspected and maintained in accordance with NR 810.14. b. Inspections of storage facilities 10,000 gallons or greater shall be by a professional tank inspection firm or by a registered professional engineer. c. Maintenance shall include removal of sedimentation and biofilm, repairs as necessary to maintain good working condition. d. All storage facilities shall be inspected a minimum of every 5 years, unless otherwise approved by the department. e. Inspections of vent and overflow screens and hatches shall be conducted once per year. 19. Records. a. A record shall be kept on dates of cleaning, relining, and replacement of components or parts. b. Department representatives shall be provided access to the water storage system and records upon request.		
51 a2.	Table 382.40−8	Pipe wall thicknesses between the two standards are too different to be on the same table	DIS	**Table 382.40-8** **CHLORINATED POLYVINYL CHLORIDE TUBING, ASTM D2846 ~~and F442~~, SDR 11; (C=150)** Justification: ASTM F442 SDR11 pipe dimensions. ¾" OD=1.050 Min wall=.095X2=.190 1.050-.190=.860 1" OD =1.315 Min wall=.119X2=.238 1.315-.238= 1.077 ASTM D2846 SDR11 pipe dimensions. ¾" OD=.875 Min wall=.080X2=.160 .875-.160=.715 1" OD=1.125 Min wall=.102X2=.204 1.125-.204=.921	none	*4/3/2019 – Motion to*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
51 a3.	Table 382.40-12	Create, Delete table from Appendix and move with the other 11 tables showing similar information	DIS	**Table 382.40-12** **Maximum Allowable Load for PVC SDR 80, ASTM 1785 (½ to 2 inches)**	none	*4/3/2019 – Motion to*
51a4.	Table 382.40-13 Create	Create, Delete table from Appendix and move with the other 11 tables showing similar information	DIS	**Table 382.40-13** **Maximum Allowable Load for PVC SDR 80, ASTM 1785 (2 ½ to 6 inches)**	none	*4/3/2019 – Motion to*
51a5.	Table 382.40-14 Create	Create, Delete table from Appendix and move with the other 11 tables showing similar information		**Table 382.40-14** **Maximum Allowable Load for CPVC SDR 80, ASTM F 441 (½ to 2 inches)** NOTE: This table has a column for 3/8", this column should be removed so there is no confusion on allowing 3/8" water distribution piping.	none	*4/3/2019 – Motion to*
51a6.	Table 382.40-15 Create	Create, Delete table from Appendix and move with the other 11 tables		**Table 382.40-15** **Maximum Allowable Load for CPVC SDR 80, ASTM F 441 (2 ½ to 10 inches)**	n/a	*4/3/2019 – Motion to*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		showing similar information				
51 a7.	382.41 (1) Note	Correct language notes to match DNR current code	DIS	Note: The Department of Natural Resources governs the operation and design of community water systems and under s. NR ~~811.09~~ 810.15 requires the supplier of water to develop and implement a comprehensive cross connection control program.	None	*4/3/2019 – Motion to*
51 a8.	382.41 (2) (a)	Amend for consistency.	DIS	All methods, devices, and assemblies ~~and mechanisms~~ intended to protect water ~~supplies relative to~~ supply systems from cross ~~connection or backflow~~ connections shall be of a type recognized and approved in accordance with ch. SPS 384 and as described in sub. (4).	n/a	*4/3/2019 – Motion to*
51 a9.	382.41 (3) (b) 5.	DNR does not allow threads on sample taps. Individual dialysis machines are provided with cross connection control through another process. Language was proposed for 382.50 also.	DIS	5. A cross connection ~~shall~~ may not be considered to exist at the hose threaded outlet installed for the sole purpose of any of the following: a. Draining a water supply system or any portion thereof~~;~~. ~~b. Obtaining water quality samples of the water supply system or any portion thereof; or~~ bm. Connecting individual portable dialysis machines when enclosed in a lockable box. c. Connecting individual residential-type automatic clothes washers.	n/a	*4/3/2019 – Motion to*
51 a10.	382.41 (3) (b) 6. a. Note	Correct note to match current DNR code	DIS	Note: The interconnection of a public water supply system and another source of water is addressed in ss. NR ~~811.09~~ 811.06 and 811.07 and must be approved by the Department of Natural Resources.	None	*4/3/2019 – Motion to*
51 a11.	382.41 (3) (b) 6. b.	Revise to clarify	DIS	b. Except as provided in subd. 7., a low hazard situation shall be considered to exist for the connection of a piping system, including ~~but not limited to~~ automatic fire sprinkler	None	*4/3/2019 – Motion to*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		confusing language		systems, standpipe systems, and systems for processing purposes~~, which provides potable~~ that provide water for nonrequired potable water use~~s~~.		
51 a12.	382.41 (3) (d) Create 1. and 2.	Revise to clarify confusion whether a cross connection control method, device, or assembly could be bypassed.	DIS	*Prohibitions.* 1.The use of a toxic solution as a heat transfer fluid in single−wall heat exchanger for potable water is prohibited. 2. A cross connection control method, device, or assembly may not be bypassed without a cross connection control method, device, or assembly of at least equal protection.	n/a	*4/3/2019 – Motion to*
51 a13.	382.41 (4) (b) 1.	Update code to reflect terminology in the adopted standard.	DIS	Except for a deck−mounted device, ~~a pipe applied~~ an atmospheric type vacuum breaker shall be installed such that the bottom of the device or the critical level mark on the device is at least 6~~"~~ inches above all of the following:	n/a	*4/3/2019 – Motion to*
51 a14.	382.41 (4) (b) 2.	Update code to reflect terminology in the adopted standard.	DIS	A deck−mounted ~~pipe applied~~ atmospheric type vacuum breaker shall be installed such that the bottom of the device or the critical level mark on the device is at least one inch above all of the following:	n/a	*4/3/2019 – Motion to*
51 a15.	382.41 (4) (k) 2.	Update code to reflect terminology in the adopted standard.	DIS	~~A pressure vacuum breaker assembly shall be located only outside.~~ Due to the probability of water discharge from the atmospheric air inlet valve, a pressure vacuum breaker assembly shall be installed in a location where the discharge does not cause damage. Note to DPD: Repeal (4) (k) 2. and create (4) (k) 2m.	n/a	*4/3/2019 – Motion to*
51 a16.	382.41 (5) (h)	Update code to reflect terminology in the adopted standard.	DIS	No control valve may be placed downstream from ~~a pipe applied~~ an atmospheric type vacuum breaker or a laboratory faucet backflow preventer.	n/a	*4/3/2019 – Motion to*

NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
51 a17.	Table 382.41-1	Revise Table (The titles in green are superseded or withdrawn and will be updated to match tables in SPS 381.)	DIS	**Table 382.41-1** **Acceptable Cross Connection Control Methods, Devices, or Assemblies**		*4/3/2019 – Motion to*

Methods or Assemblies of Cross Connection Control (Standard)	Situations and Conditions							
	Backpressure				Backsiphonage			
	Low Hazard		High Hazard		Low Hazard	High Hazard		
	Continuous Pressure	Noncontinuous Pressure	Continuous Pressure	Noncontinuous Pressure	Continuous Pressure	Noncontinuous Pressure	Continuous	Noncontinuous
Air-gap Fittings for use with Plumbing Fixtures, Appliances, and Appurtenances (ASME A112.1.3)					X	X	X	X
Air Gaps (ASME A112.1.2)	X	X	X	X	X	X	X	X
Atmospheric Vacuum Breaker (CAN/CSA B64.1.1)						X		X
Backflow Preventers with an Intermediate Atmospheric Vent (ASSE 1012)	X	X			X	X		
Barometric Loops					X	X	X	X
Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies	X	X						
Dual Check Valve Type with Atmospheric Port	X	X			X	X		

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing													
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change									Potential Impact/Cost	Comments/Status
				Backflow Preventer (CAN/CSA B64.3)										
				Hose Connection Backflow Preventers (ASSE 1052)	X[a]	X	X[a]	X	X[a]	X	X[a]	X		
				Hose Connection Vacuum Breakers (CAN/CSA B64.2 and B64.2.2)	X[a]	X	X[a]	X	X[a]	X	X[a]	X		
				Hose Connection Vacuum Breakers (ASSE 1011)	X[a]	X	X[a]	X	X[a]	X	X[a]	X		
				~~Pipe Applied~~ Atmospheric Type Vacuum Breakers (ASSE 1001)						X		X		
				Pressure Vacuum Breaker Assembly (ASSE 1020)					X	X	X	X		
				Reduced Pressure Principle Backflow Preventers ~~And~~ and Reduced Pressure Principle Fire Protection ~~Principle~~ Backflow Preventers (ASSE 1013)	X	X	X	X	X	X	X	X		
				Reduced Pressure Principle Backflow Preventer (CAN/CSA B64.4)	X	X	X	X	X	X	X	X		
				Spill Resistant Vacuum Breaker					X	X	X	X		

NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				(ASSE 1056 and CAN/CSA B64.1.3) | | | | | | | | | Vacuum Breaker (CAN/CSA B64.1.2) | | | | | X | X | X | X [a] See limitation listed under s. SPS 382.41 (4) (c) 1. a.		
51 a18.	Table 382.41-2 (left-side column)	Revise/add to table	DIS	**Table 382.41-2** **Acceptable Cross Connection Control Methods, Devices or Assemblies for Specific Applications** **Methods or Assemblies (Standard)** ~~Water Closet Flush Tank Ball Cocks (ASSE 1002)~~ Anti-siphon fill valves for water closet tanks (ASSE 1002) Commercial Dishwashing Machines (ASSE 1004) 1001, ASSE 1011, ASSE 1020, ASSE 1052, or ASSE 1056. Wall Hydrants, Frost Proof Automatic Draining Anti−Backflow Type (ASSE 1019), types A, ~~or~~ B, or C		*4/3/2019 – Motion to*
51 a19.	382.41 (3) (b) 5. c.	Revise	DIS	Connecting individual residential-type automatic clothes washers. OR Connecting individual ~~residential automatic clothes washers~~ home laundry equipment. OR Connecting ~~individual residential~~ automatic clothes washers.		*4/3/2019 – Motion to*
51 a20.	382.41 (3) (b) 6. b.	Repeal (b) 6. b. and incorporate 6. note into code language.	DIS	~~(b) 6. b. Except as provided in subd. 7., a low hazard situation shall be considered to exist for the connection of a piping system, including but not limited to automatic fire sprinkler systems, standpipe systems, and processing purposes, which provides potable water for nonrequired potable water uses.~~ (b) 6. ~~Note~~ bm. Cross connection control devices used in conjunction with automatic fire sprinkler systems ~~are to~~ shall be listed by an acceptable testing agency for such an application under the standards governing the design and installation of automatic fire sprinkler systems. Note to DPD: renumber 6. b. (Note) to 6. bm. and amend.		*4/3/2019 – Motion to*
51 a21.	382.41 (4) (g) 2.	Repeal	DIS	~~A double check backflow prevention assembly and a double check detector assembly backflow preventer which serve a water−based fire protection system may have a test outlet located between the number 2 check valve and the number 2 listed indicating control valve.~~		*4/3/2019 – Motion to*
51 a22.	382.41 (5) (f)	Revise	DIS	The installation of a reduced pressure principle backflow preventer, a reduced pressure principle fire protection ~~principle~~ backflow preventer, ~~a reduced pressure detector~~		*4/3/2019 – Motion to*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				~~backflow preventer,~~ a reduced pressure detector fire protection backflow prevention assembly, a double check backflow prevention assembly, a double check fire protection backflow prevention assembly, a double check detector fire protection backflow prevention assembly ~~backflow preventer~~, a pressure vacuum breaker assembly, and a spill resistant vacuum beaker shall conform to all of the following limitations:		
51 a23.	382.50 (2) (b) 1. a.	Create 1. a.	DIS	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. ~~a.~~ Spouts shall have laminar flow in facilities listed in par. (3) (b).	Minimal	*12/18/2018 – Motion to adopt.*
51a.	382.50 (2) (b) 2. a. and b.	Renumber to a. and create b. (Related provision: See 51b.)	DIS, amended by PAC	382.50 (2) (b) 2. 'Actions.' All fixtures used by medical and nursing staff, ~~and all lavatories used by~~ patients or residents, and food handlers shall be equipped with valves that can be operated without the use of hands. a. Where wrist blade handles are used for this purpose, the handles shall not exceed 4 1/2" in length, except handles on scrub sinks and clinical sinks shall be no less than 6" long. b. A single lever faucet handle may be used in lieu of wrist blades. 5/30/18 Discussion: Per DIS, DSPS does not have an MOU with DHS and is developing a guidance document.		*5/30/2018 – Motion to add "residents" and adopt as amended.*
51b.	382.50 (2) (b) 2. c.	Create c. (Related: See 51a.) Intent is to control legionella.	DIS, amended by PAC	c. ~~Where tempered water is provided at lavatories~~ Lavatories with self-closing faucets accessible to patients, the flow of the hot water shall be calculated to evacuate the water distribution piping from the faucet to the recirculated hot water supply.	Minimal	*12/18/2018 – Motion to adopt as amended.*
51c.	382.50 (3) (a) 2.	All services are required as written. Without language, hospitals not in compliance	DIS	(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. SPS 382.40(7), except for additional services supplying water to additions deemed non-essential as defined in a hospital water management plan.	Less restrictive	*12/18/2018 – Motion to adopt.*
51d.	382.50 (3) (b) intro. and 1.	Revise 1. and create a. and 1. to 5.	DIS	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, or additions to the facilities		*12/18/2018 – Motion to adopt.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
		Based on former MOU with DHS, codifies requirements		without a building division as defined by the department of health services, shall comply with all of the following: a. Facilities with a population exceeding 250 occupants shall have a water management plan. The management plan shall include all of the following: 1. An emergency water contingency plan on the loss or contamination of the water supply. 2. A bacterial control plan. 3. The emergency and routine disinfection procedures. 4. The identity of the individual responsible for the water quality. 5. The provisions for the periodic flushing of the water supply system. (DPD to renumber in accordance with drafting rules)		
51e.	382.50(3) (b) 7. b. (see also #57a and 51f)	Prevent adult day care patients from being burned	DIS	b. A water distribution system may not be designed, installed, or maintained so that the ~~maximum temperature to~~ fixture fitting outlets accessible to patients of an adult day care exceeds 115 degrees F. Note to DPD: Renumber (intro.) to a. in order to create b. (?)	Minimal	*12/18/2018 – Motion to adopt.*
51f.	382.50(3) (b) 7. c. (see also #57a and 51e)	Create new subd. .		c. The use of limit stops in faucets to achieve a maximum temperature of 115 degrees F is prohibited.	Cost-savings for customers. Saves customers the expense of adding thermostatic mixers after they have already purchased limit stop faucets that do not perform	*12/18/2018 – Motion to adopt.*
52.	382.50 (3) (b) 9. (See also #53	Issues w/ bacterial control. Relates to HC facilities. Goal is to minimize/prevent stagnation of water. (See related #53, 57b, 57c)	DIS, amended by PAC	Create 382.50(3) (b) 9. and 382.40 (8) (i) 5. 9. Dead ends within the water distribution systems cannot exceed 10 pipe diameters. Amend 381.01 (68) definition for "dead end" and create 2. 1.a branch leading to…(no amendment to 1.) 2. Any portion of the water distribution system terminating by means of a plug, cap or closed fitting and with no outlet. 8/9/17 Discussion: Consider stagnation prevention in healthcare section. Consider defining & eliminating dead ends.	Major - Long-term benefit [Need cost]	*8/9/2017 - Motion to amend definition for 'dead ends' as shown.* *8/9/2017 - Motion to create 382.40 (8) (i) 5. and 382.50 (3) (b) 9. to read as shown.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
53.	382.50 (3) (b) 10.	Issues of bacterial control. CBRFs under DHS rule. (See related #52, 57b, 57c.)	DIS, amended by PAC	Create 382.50(3) (b) 10. 10. Water outlets accessible to patients shall have laminar flow. ~~without the use of an aerator.~~	Major	*8/9/2017 - Left off here.* *9/19/2017 - Motion to create SPS 382.50 (3) (B) 10. and adopt as amended.*
54.	382.50 (3) (b) 4.	greater legionella control (See related: #54a.)	DHS to DIS, amended by PAC	Amend 382.50 (3) (b) 4. ~~a.~~ 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 ~~3~~ feet in developed length. ~~b~~ a. A hot water distribution system using temperature maintenance for bacterial control 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 3 feet in developed length. Discussion: Relates to healthcare facilities. This is a national push, new order out re: to Legionella, guidelines for hospitals as recommended by CDC. Will require more piping for cooling of pipes. When running water, users doesn't wait for water to get hot enough (140^0F) to stagnate the growth of legionella, which causes illnesses in patients – often seen as pneumonia. DIS rationale for 3' recommendation: Most using copper pipes, water would get hot enough within 3 feet. Increased costs could be offset by mitigating costs to treat illnesses. 9/19/17: DIS recommendation is to amend 4. a. from 25 feet to 3 feet. Committee did not make motion to adopt 3-foot recommendation. 10/10/17: When adding daisy-chain, circuit setters, pumps, etc. – if not balanced, have more piping than before, making it difficult to maintain and balance.	Significant impact, added expense [Need costs and data to support proposal]	*9/19/2017 - Motion to table until next meeting pending supporting data & information.* *10/10/2017 - Motion to create 328.50 (3) (b) 4. b.*
54a.	382.50 (3) (b) 4. ~~c.~~ b	Create c. (See related: #54)	DIS	~~c~~ b. Control valves shall automatically regulate the temperature of the water supply of the distribution system that exceeds 140 degrees to patient areas.		*12/18/2018 – Motion to adopt.*
55.	382.50 (3) (b) 5.	Temperature maintenance issues	DIS	Water provided to patient showers, therapeutic equipment, and all types of baths shall be installed with pressure balanced and thermostatically controlled control valves ~~that are pressure balanced and thermostatically controlled~~ which automatically regulate the	More cost initially, offset w/lower	9/19/2017 - Left off here.

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**Proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
				temperature of the water supply to the fixture fitting outlet within a temperature range of 110^{0}F to 115^{0}F. Such control valves shall automatically reduce flow to 0.5 gpm or less when the water supply to the fitting outlet exceeds 115^{0}F or when loss of cold water pressure occurs. Discussion: Currently 3 choices. Maintenance challenges to readjust. Not practical. Eliminate pressure balance.	maintenance cost. Reduces staff time.	*10/10/2017 - Motion to adopt as proposed.* [Note to DPD: Need to revise appendices accordingly.]
56.	382.50 (3) (b) 6.	Codifying current practice. ASHRAE has new standards and needs further review. Create note. ~~Section in Yellow added after 10/10/17 motion. Revision added under 56a.~~ Note to DPD: Repeal b., create bm. to e., and renumber c. to f.	DIS, amended by PAC	6. Hot water distribution systems may not include a heat recovery system and 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^{0}F and with a return of a minimum of 124^{0}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: (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.~~ f. Another disinfection system approved by the department ~~but may not include a heat recovery system.~~ Note: See explanatory information for further information. Discussion: "Shocking system". H^{2}O chlorinated at 2 mg/L is used for hyper-chlorination of water supply system prior to being put in use, not for maintaining bacterial control. Could keep in guidance documents for approved variances or could incorporate into appendix. Section shown as struck is not being used. ASHRAE has new standards. ASHRAE has been revised and needs further review before being cited. - Recommend use of redundant systems. - Guidance Documents to be incorporated in appendices, in addition to a new guidance document relating to Chloramines. - [Note to DPD: Add related guidance documents in appendix. i.e. 0.5 Chlorine Residual Disinfection, Chloride Dioxide Disinfection, Copper-Silver Ion Disinfection, UV Disinfection, Chloramines (new)] DONE - Click HERE to review plumbing related guidance documents posted on DSPS website.	Significant impact - added expense	*10/10/2017 - Motion to adopt with added note.* *12/18/2018 – Red section added. Motion to approve as amended.*

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	**Rule provision**	**Issue/Reason for change**	**proposed by**	**Existing Language and Proposed change**	**Potential Impact/Cost**	**Comments/Status**
56a.	382.50 (3) (b) 6. bm. to ~~e.~~ f.	Create bm. to ~~e.~~ f. (See related: #56)	DIS, amended by PAC	bm. Chloride dioxide. m. Ultraviolet. d. Copper-silver ion. e. Chloramine. f. Chlorine. ~~c.~~ f. ~~Another disinfection system approved by the department but may not include a heat recovery system.~~ Discussion: Other methods being considered and may be added when approved. (Ozone, ultra-filtration)		*12/18/2018 – Motion to adopt as amended.*
57.	382.50 (3) (b) 8.	Clarification	DIS, amended by PAC	~~Except as provided in subd. 7., a~~ A water distribution system may not be designed, installed, and maintained so that the maximum temperature ~~to fixture fitting outlets~~ exceeds 180^{0}F. The hot water distribution system ~~to patient areas~~ shall be provided with an automatic control valve to ensure complete shut-down of flow if the temperature exceeds 180 degrees F. ~~protected by a fail-safe control valve.~~ 10/10/17 Discussion: Clarify that failsafe needs to be in place. Prevents hot water creep/malfunction.		*10/10/2017 - Motion to amend as shown.*
57a.	382.50 (3) (b) 7. (see also 51e & 51f)		PAC	**~~7. A water distribution system may not be designed, installed and maintained so that the maximum temperature to fixture fitting outlets~~** Water discharged from a fixture fitting outlet accessible to patients may not ~~exceeds~~ exceed 115°F.		*10/10/2017 - Motion to amend as shown.*
57b.	382.50 (3) (b) 11.	Create 11. (See related: #52, 53, 57c)	DIS	11. Hot water bacterial controlled distribution piping shall be labeled with bacterial control measure when other than thermal disinfection is used.	Minimal	*12/18/2018 – Motion to adopt.*
57c.	382.50 (3) (b) 12. (See also #23)	(See related: #52, 53, 57b)	DIS	12. Where a dialysis box~~es may be~~ is installed in a patient room or a patient toilet room, all of the following shall apply: a. The dialysis box~~es~~ shall be lockable. b. Hose threads located within a lockable dialysis box used exclusively for the connection of portable dialysis equipment do not require a cross connection control device. c. A receptor located within a dialysis box shall be sealed when not in use.		*12/18/2018 – Motion to adopt.*
57d.	Table 382.50-1 Title	Revise Title in table - 2nd column under	DIS	**~~Gooseneck or provide a~~ 5–inch minimum clearance**		*12/18/2018 – Motion to adopt.*

<table>
<tr><th colspan="7">SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing</th></tr>
<tr><th>NO.</th><th>Rule provision</th><th>Issue/Reason for change</th><th>Proposed by</th><th>Existing Language and Proposed change</th><th>Potential Impact/Cost</th><th>Comments/Status</th></tr>
<tr><td></td><td></td><td>heading “Type of Spout”</td><td></td><td></td><td></td><td></td></tr>
<tr><td>57e.</td><td>Table 382.50-1</td><td>Create new section in table</td><td>DIS</td><td>Table 382.50 – 1
Spouts and Actions Required in Health Care and Related Facilities
<table>
<tr><th>Fixture Location</th><th>Standard</th><th>5-inch Minimum Clearance</th><th>Hand</th><th>Wrist</th><th>Foot, Knee, or Electronic Sensor</th></tr>
<tr><td>COMMON AREAS</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Day rooms</td><td></td><td>X</td><td></td><td>X</td><td>X</td></tr>
<tr><td>Hallways</td><td></td><td>X</td><td></td><td>X</td><td>X</td></tr>
<tr><td>Patient waiting area</td><td></td><td>X</td><td></td><td>X</td><td>X</td></tr>
<tr><td>Vestibule waiting area</td><td>X</td><td></td><td></td><td></td><td></td></tr>
</table></td><td></td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>57f.</td><td>382.51 (2) (e)</td><td>Create (e)</td><td>DIS</td><td>(2) (e) The entire water supply system shall be designed for periodic flushing.</td><td>Minimal</td><td>12/18/2018 – Motion to adopt.</td></tr>
<tr><td>58.</td><td>382.41 (5) (d) 1.</td><td>Alternate standard. Creation of “b” is an exception to existing code.</td><td>DIS, amended by PAC</td><td>~~a.~~ 1. A cross connection control device or cross connection control assembly may not be located in uninhabitable spaces susceptible to flooding.
~~b.~~ 1m. A cross connection control device or cross connection control assembly that does not incorporate a vent port may be installed in an uninhabited location susceptible to flooding.

10/10/17 Discussion: If vent, can be in pit. Flooding of control device is not a factor in the operation for the protection of potable water.</td><td>Less restrictive.</td><td>10/10/2017 - Motion to adopt.
3/20/2018 - Ryan to create definition for method and better definition for cross connection control assembly. [complete]</td></tr>
<tr><td>58a.</td><td>382.60 (2)</td><td>Venting</td><td>DIS</td><td>382.60 (2) INSTALLATION. (a) Piping hangers and anchors shall be securely attached to the building’s structure at intervals to support the piping and its contents, but not at intervals greater than those specified in Table 382.60, except PVC used for venting may have a maximum horizontal spacing of 5 feet. The connection of drain piping to a fixture or appliance shall be considered a point of support.

5/30/18 – Discussion of incident where J-hooks weren’t spaced every 4’ and failed/broke when full of water. Hangers used should anticipate contents and load as specified in rule.</td><td></td><td>5/30/2018 - Motion to adopt.</td></tr>
<tr><td>59.</td><td>382.70 (4)</td><td>Alternate standard. Infiltration is</td><td>DIS</td><td>Table 382.70-1 Number 8: Subsurface i~~nfiltration and~~ irrigation, using reuse as the source [c]</td><td></td><td>10/10/2017: Motion to adopt.</td></tr>
</table>

SPS 382 Design, Construction, Installation, Supervision, Maintenance, and Inspection of Plumbing						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
		covered within 382.365		10/10/17 Discussion: SPS 382.70 is total performance-based provision.		
		EPA requirements relating to Legionnaires		Future Discussion: Need to look at sensors on water faucets. How long should flow remain on? Should be enough to replace stagnant water. Hot vs. Cold water considerations. May need to provide a calculation. Ex. How many gpm needed for 3' of pipe?	Need Data	

SPS 383 Private Onsite Wastewater Treatment Systems						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
	383.71 (3) and (5) (d)	Act 59	DPD	Amend (w/delayed implementation date) pursuant to Wis. Act 59 elimination of the Wisconsin Fund		[No committee action required]
	383.71 (7) (c)	Repeal (obsolete)	DPD			[No committee action required]

SPS 384 Plumbing products						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
1.	Table 384.10	Revise row 3	DIS	**Table 384.10** **SUBMITTALS TO DEPARTMENT** Product Categories 3. Health care plumbing <u>and laboratory</u> appliances Discussion: DIS explained ways to gain product approval 1. Product is listed 2. Alternate approval – requires product approval 3. Submission per Table 384.10 4. Voluntary submission under SPS 384.10 (3)		5/30/2018 – Motion to adopt.
1a.	Table 384.10	Revise row 7	DIS	**Table 384.10** **SUBMITTALS TO DEPARTMENT** Product Categories 7. ~~Wastewater~~ <u>Water</u> treatment devices used to meet the requirements in s. SPS 382.70		*4/3/2019 – Motion to*

<table>
<tr><th colspan="7">SPS 384 PLUMBING PRODUCTS</th></tr>
<tr><th>NO.</th><th>RULE PROVISION</th><th>ISSUE/REASON FOR CHANGE</th><th>PROPOSED BY</th><th>EXISTING LANGUAGE AND PROPOSED CHANGE</th><th>POTENTIAL IMPACT/COST</th><th>COMMENTS/STATUS</th></tr>
<tr><td>2.</td><td>384.10 (3) (d)</td><td></td><td>DIS</td><td>384.10 (3) (d) 1. The department ~~shall~~ may review a submittal under this subsection with input from a technical advisory committee.

[This provision was addressed in the POWTS rule project.]</td><td></td><td>5/30/2018 – Motion to table. [Recommendation withdrawn. [No further action required.]</td></tr>
<tr><td>2a.</td><td>Table 384.11</td><td>Revise

(The items in green are superseded by the CSA B64-11 series.)</td><td>DIS</td><td>Table 384.11
DEVICE LISTINGS

<table><tr><th>Device</th><th>Referenced Standard</th></tr><tr><td>Anti-siphon Fill Valves ~~(Ballcocks)~~ for ~~Gravity~~ Water Closet ~~Flush~~ Tanks</td><td>ASSE 1002</td></tr><tr><td>Atmospheric Type Vacuum Breakers</td><td>ASSE 1001</td></tr><tr><td>Atmospheric Vacuum Breakers</td><td>CAN/CSA B64.1.1</td></tr><tr><td>Backflow Preventers for Beverage Dispensing Equipment</td><td>ASSE 1022</td></tr><tr><td>Backflow Preventer with Intermediate Atmospheric Vent</td><td>ASSE 1012</td></tr><tr><td>Backflow Prevention Devices for Hand-Held Showers</td><td>ASSE 1014</td></tr><tr><td>Chemical Dispensing Systems</td><td>ASSE 1055</td></tr><tr><td>Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies</td><td>ASSE 1015</td></tr><tr><td>Double Check Detector Fire Protection Backflow Prevention Assemblies</td><td>ASSE 1048</td></tr><tr><td>Double Check Valve Backflow Preventers</td><td>CAN/CSA B64.5</td></tr><tr><td>Dual Check Valve Backflow Preventers with Atmospheric Port</td><td>CAN/CSA B64.3</td></tr><tr><td>Hose Connection Backflow Preventers</td><td>ASSE 1052</td></tr><tr><td>Hose Connection Vacuum Breakers</td><td>CAN/CSA B64.2</td></tr><tr><td>Hose Connection Vacuum Breakers</td><td>ASSE 1011</td></tr><tr><td>Laboratory Faucet Backflow Preventers</td><td>ASSE 1035</td></tr><tr><td>Laboratory Faucet Type Vacuum Breakers</td><td>CAN/CSA B64.7</td></tr><tr><td>Pressure Vacuum Breakers</td><td>CAN/CSA B64.1.2</td></tr><tr><td>Pressure Vacuum Breaker Assembly</td><td>ASSE 1020</td></tr><tr><td>Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures</td><td>ASSE 1037</td></tr><tr><td>Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies</td><td>ASSE 1047</td></tr></table></td><td></td><td>4/3/2019 – Motion to</td></tr>
</table>

NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection ~~Principle~~ Backflow Preventers — ASSE 1013 Reduced Pressure Principle Backflow Preventers — CAN/CSA B64.4 Spill Resistant Vacuum Breakers Assemblies — ASSE 1056 ~~Vacuum Breaker~~ Wall ~~Hydrants,~~ Hydrant with Backflow Protection and Freeze Resistant ~~Automatic Draining Type~~ — ASSE 1019 Residential Cation Exchange Water Softeners — NSF 44		
2b.	384.12	Revise	DIS	384.12 Identification. Each length of pipe and each pipe fitting, trap, fixture, material, device and product to be used in plumbing shall be marked as required by the applicable standard specified by reference in this chapter or as specified by rule in this chapter. Cross connection control devices and assemblies shall be labeled with the appropriate applicable standard.		*4/3/2019 – Motion to*
2c.	384.20 (5) (a)	Repeal and recreate new provision Use consistent terminology	DIS	Repeal: ~~(a) *Automatic clothes washers.* Residential type automatic clothes washers shall conform to ASSE 1007.~~ Recreate: (5) (a) *Home laundry equipment.* Residential-type automatic and semi-automatic clothes washers, combination washer-dryers, and dryers including those residential-types that are coin-operated, shall conform to ASSE 1007.		*4/3/2019 – Motion to*
2d.	384.20 (5) (e)	Revise Use consistent terminology	DIS	(e) *Dishwashing machines.* 1. Residential-type dishwashing machines shall conform to ASSE 1006. 2. Commercial type dishwashing machines shall conform to ASSE 1004.		*4/3/2019 – Motion to*
2e.	384.20 (5) (h) 2.	Revise	DIS	2. Food waste grinders shall be trapped separately and connected to a drain of sufficient size to serve the unit, but not less than 1 ½ inches in diameter.		*4/3/2019 – Motion to*
3.	384.20 (5) (L) 2.		DIS, amended by PAC	384.20 (5) (L) 2. Except for combination bathtub–shower units, and a shower replacing an existing non-public bathtub that is served by one showerhead, waste outlets serving showers shall be at least 2 inches in diameter and shall have removable strainers of sufficient strength for the anticipated loads.		5/30/2018 – Motion to amend and adopt as shown.
3a.	384.20 (5) (L) 4. a	Revise, Create a.	DIS	~~All~~ Except as specified in subd. a., all shower compartments, regardless of shape, shall have a minimum finished interior of 900 square inches and shall be capable of encompassing a circle with a diameter of 30 inches. The minimum required area and dimension shall be measured in a horizontal plane 24 inches above the top of the threshold and may not extend beyond the centerline of the threshold. The minimum area and dimensions shall be maintained to a point 70 inches above the shower waste outlet with no protrusions other than the fixture valve		*4/3/2019 – Motion to*

SPS 384 PLUMBING PRODUCTS						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				or valves, showerheads, soap dishes, retractable seats, and safety grab bars or rails. a. Shower stalls may not be less than 25 inches in minimum width measured from the finished interior to the center of the threshold provided the stall is not less than 1,300 square inches.		
3b.	384.20 (5) (n) 6.	Create 6.	DIS	(n) 6. Trough urinals are prohibited.		*4/3/2019 – Motion to*
3c.	384.20 (5) (n) 7.	Create 7.	DIS	(n) 7. Urinals requiring water shall have an individual equipped flushing device.		*4/3/2019 – Motion to*
4.	384.20 (5) (o)		DIS	384.20 (5)(o) 1.c. Water closet materials not listed must meet the provisions of s. SPS 384.20 (3) (b) 7.		5/30/2018 – Motion to table.
4a.	384.20 (5) (o) 1. c.	Create c.	DIS	(o) 1. c. Water closet materials not listed shall meet the provisions of subd. (3) 7. and sub. (4).		*4/3/2019 – Motion to*
4b.	384.20 (5) (o) 6.	Revise	DIS	6. Each water closet shall be individually equipped with a flushing device. Pressurized flushing devices shall conform to ASSE 1037. All flushing devices shall be readily accessible for maintenance and repair. ~~Ballcocks and fill~~ Fill valves shall be of the anti−siphon type and shall conform to ASSE 1002. The critical level mark on the ~~ballcock and~~ fill valve shall be located at least one inch above the full opening of the overflow pipe.		*4/3/2019 – Motion to*
4c.	384.20 (5) (p)	Create, Placement?	DIS	Temperature and pressure relief valve discharge pipe shall comply with ASTM A112.4 or materials listed in Table 384.30-8.	Less restrictive	*4/3/2019 – Motion to*
5.	384.25 (title)	Expands this section to apply to all types of water	DIS	SPS 384.25 (title) ~~POWTS~~ Water holding components or treatment components.		5/30/2018 – Motion to adopt.
6.	384.25 (1)	Same as #5 above.	DIS	384.25 (1) GENERAL. All ~~POWTS~~ water holding components or treatment components shall conform to the requirements of this section.		5/30/2018 – Motion to adopt.
6a.	384.25 (2) (e)	Create e. Title, 1., 2., and 3. DPD to renumber in accordance with drafting rules)	DIS	e. *Potable water storage tanks.* 1. Materials and designs for finished water storage tanks or structures shall be stable and durable as well as protecting the quality of stored water. 2.Tanks shall be constructed in accordance with AWWA standards D100, D102, D103, D104, D110, D115, D120, and D130. 3.These standards apply to concrete or fiberglass tanks, standpipes, reservoirs, and elevated tanks. Poly tanks shall be listed as per NSF 61.		*12/18/2018 – Motion to adopt.*

<table>
<tr><th colspan="7">SPS 384 PLUMBING PRODUCTS</th></tr>
<tr><th>NO.</th><th>RULE PROVISION</th><th>ISSUE/REASON FOR CHANGE</th><th>PROPOSED BY</th><th>EXISTING LANGUAGE AND PROPOSED CHANGE</th><th>POTENTIAL IMPACT/COST</th><th>COMMENTS/STATUS</th></tr>
<tr><td>6b.</td><td>384.25 (10)</td><td>Revise</td><td>DIS</td><td>ALARM SYSTEM. All pump and alarm controls ~~for POWTS~~ shall be specifically designed by the manufacturer for such use.</td><td>None</td><td>4/3/2019 – Motion to</td></tr>
<tr><td>6c.</td><td>384.25 (11) (c)</td><td>Revise</td><td>DIS</td><td>Other treatment, holding, ~~and~~ combination treatment–holding tanks, reservoirs, and cisterns. Except as required in par. (a) or (b), each treatment tank and holding tank shall be labeled with a permanent label located near an inlet or outlet opening. The label shall be embossed, impressed, or securely attached to the tank. The label shall include all of the following information:</td><td>None</td><td>4/3/2019 – Motion to</td></tr>
<tr><td>7.</td><td>Tables 384.30-1 384.30-2</td><td>Allows option to eliminate need for petition.</td><td>DIS</td><td>Add to tables 384.30-1 & 384.30-2:<table><tr><th>Material</th><th>Standard</th></tr><tr><td>Stainless Steel</td><td>ANSI B36.19M; ASTM A269; 312/A312M; ASTM A450; A778; AWWA C220</td></tr></table></td><td></td><td>5/30/2018 – Motion to adopt.</td></tr>
<tr><td>7a.</td><td>Table 384.30-4</td><td>Add standard to table</td><td>DIS</td><td>Table 384.30-4
PERFORATED EFFLUENT DISTRIBUTION PIPING FOR NONPRESSURIZED SOIL ABSORPTION SYSTEMS<table><tr><th>Material</th><th>Standard</th></tr><tr><td>Polyethylene (PE)[a]</td><td>ASTM F405; ASTM F810</td></tr><tr><td>Polyvinyl chloride (PVC)[a]</td><td>ASTM D2729; ASTM D3034</td></tr></table></td><td></td><td>4/3/2019 – Motion to</td></tr>
<tr><td>7b.</td><td>Table 384.30-5 Title</td><td>Revise Title of Table</td><td>DIS</td><td>Table 384.30-5
PRESSURIZED SEWER, DRAIN PIPE, ~~AND~~ TUBING, AND SERVICE SUCTION LINES</td><td></td><td>4/3/2019 – Motion to</td></tr>
<tr><td>7c.</td><td>384.30 (3) (a)</td><td>Revise</td><td>DIS</td><td>(3) (a) Above ground drain and vent pipe. Drain pipe and vent pipe installed above ground and inside a building shall conform to one of the standards listed in SPS Table 384.30–1, ~~except black steel pipe conforming to ASTM A53 may be used for storm water conductors. Black steel conductors may not be embedded in concrete or masonry.~~</td><td></td><td>4/3/2019 – Motion to</td></tr>
<tr><td>7d.</td><td>384.30 (3) (e) 3.</td><td>Revise</td><td>DIS</td><td>Roof drains shall be sized in accordance with s. SPS 382.36 and the drain outlet ~~shall~~ may not be less than ~~21/2~~ 2 inches in diameter.</td><td></td><td>4/3/2019 – Motion to</td></tr>
<tr><td>7e.</td><td>384.30 (3) (d)</td><td>Repeal</td><td>DIS</td><td>~~Subsoil drain pipe. Subsoil drains shall be open jointed, horizontally split, or perforated pipe conforming to one of the standards listed in Table 384.30–7.~~</td><td></td><td>4/3/2019 – Motion to</td></tr>
<tr><td>7f.</td><td>Table 384.30-8</td><td>Repeal Table. Polybutylene no longer approved for</td><td>DIS</td><td>~~Table 384.30-9
MINIMUM BENDING RADIUS OF POLYBUTYLENE WATER DISTRIBUTION PIPE AND TUBING~~</td><td></td><td>4/3/2019 – Motion to</td></tr>
</table>

SPS 384 PLUMBING PRODUCTS						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
		water distribution.				
7g.	384.30 (5) (c) 4.	Update code to reflect terminology in the adopted standard.	DIS	~~Pipe applied atmospheric~~ Atmospheric type vacuum breakers shall conform to ASSE 1001~~,~~ and CAN/CSA B64.1.1.		*4/3/2019 – Motion to*
7h.	384.30 (5) (c) 7.	Revise	DIS	(c) 7. Backflow preventers with an intermediate atmospheric vent shall conform to ASSE 1012 and dual check type atmospheric port backflow preventers shall conform to CAN/CSA 64.3.		*4/3/2019 – Motion to*
7i.	384.30 (5) (c) 9. (Note)	Repeal Note to recognize the double check as an acceptable cross connection control assembly.	DIS	(c) 9. Double check backflow prevention assemblies shall conform to ASSE 1015 or CAN/CSA B64.5. ~~**Note:** Double check fire protection backflow preventer assemblies are not permitted for cross connection control.~~		*4/3/2019 – Motion to*
7j.	384.30 (5) (c) 12.	Revise	DIS	12. Vacuum breaker wall hydrants, freeze resistant automatic draining type shall conform to ASSE 1019, types A, ~~or~~ B, or C.		*4/3/2019 – Motion to*
7k.	384.30 (5) (c) 21.	New language will require all "yard hydrants" to comply with ASSE 1057	DIS	(c) 21. Yard hydrants shall conform to ASSE 1057.		*4/3/2019 – Motion to*
8.	384.30 (6) (b)		DIS	384.30 (6) (b) *Traps and fixture drain connection fittings.* 1. Copper or tubular brass traps and fixture drain connection fittings shall be at least of 20 ~~gage~~ gauge material. 2. Plastic tubular traps, continuous wastes, and trap adapters shall comply with s. SPS 384.40 (1) (a).		5/30/2018 – Motion to adopt.
				Considerations for further discussion: Air Admittance Valves (See #18) Add "fixtures shall drain dry"? Determine where this provision should be placed in SPS 384. (See #19)		

SPS 384 Plumbing products						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
				Labeling anchors, etc.		

SPS 385 Soil and Site Evaluations						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status

SPS 386 Boat And On-Shore Sewage Facilities						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status

Note: SPS 387 is repealed effective June 30, 2021, pursuant to 2017 Wisconsin Act 59 (Budget Bill).

Committee Member Items for Consideration						
NO.	Rule provision	Issue/Reason for change	Proposed by	Existing Language and Proposed change	Potential Impact/Cost	Comments/Status
1.	SPS 325	Incorporate/ consolidate plumbing related items in SPS 325 to Plumbing Code	Gardner	**Extent of problem:** Plumbers do not typically look outside the plumbing code for plumbing related issues. This section is best served by being in the plumbing code. **What will happen if change not made:** Potential code violations by plumbers unaware that this code exists.	Should be a cost savings as this ch. will be in the plumbing code w/other plumbing related items.	*9/19/2017 - Motion to repeal SPS 325.01 (2) to (4).* *[Department makes final determination whether to repeal these sections.]*
2.	SPS 382.22 (8)	Require the instruments used for	Sladky	**Description of problem:** Cross connection control assemblies are being tested with equipment that is out of tolerance and inaccurate. This can cause false passing results as well as false	Average cost to calibrate a test kit is	*10/10/2017 - Motion to table.* See #37a3.

COMMITTEE MEMBER ITEMS FOR CONSIDERATION						
NO.	**RULE PROVISION**	**ISSUE/REASON FOR CHANGE**	**PROPOSED BY**	**EXISTING LANGUAGE AND PROPOSED CHANGE**	**POTENTIAL IMPACT/COST**	**COMMENTS/STATUS**
		testing cross connection control assemblies (ccca) be tested and calibrated annually		fails. The suggestion is to make the testing equipment a registered object and track it in the same manner as a CCCA. In addition, add a line in the CCCA test report stating what instrument was used to perform the test. If the testing device is not compliant, the test would entry would be rejected. **Extent of problem:** According to one calibration contractor 70% of the instruments he services are out of the acceptable range to ensure safe results. Many of the people testing the devices perform a considerable number each year. If their testing device is off there is a real danger. Additionally, if an instrument is out of calibration they may be failing devices that should pass causing unwarranted expense to the owner. **What will happen if change not made:** Continued risk to the potable water supply as well as added cost to some BFP owners due to "false fails". **Committee Discussion:** Providers in the field are finding high failure/pass rates resulting in incorrect tests. Nothing in code. ASSE recommends annual calibration. Recommend that test kit is a regulated object. 70% of kits are not accurate. Q: How many test kits in the state? Q. How to enforce/track? Could adopt a ASSE 5000 series. Ryan currently reviewing the standards. Cross connection control assemblies shall be tested and calibrated annually. The department may require documentation of a test kit calibration analysis. The analysis shall be performed in accordance with acceptable nationally recognized practices.	$95.00 plus shipping cost of $30.00 while it is difficult to estimate, there may be expense caused by false fails as well as cost savings by false pass results.	
3.	382.20	Plan Review	Gardner	**382.20(8)** REVISIONS. ~~All changes~~ Changes or modifications involving 4 or more fixtures, which involve the provisions of chs. SPS 382 to 384, made to plumbing plans and specifications, which have been granted approval under sub. (1), shall be submitted to the department or agent municipality for examination. All changes and modifications shall be approved in writing by the department or agent municipality ~~prior to installation of the plumbing~~. **Proposed Change:** Define what constitutes a change or modification requiring revised drawings. Loosen up the existing requirement to allow jobs to move forward in a more efficient and productive way without sacrificing code conforming installations.	None	*12/18/2018 – Motion to table.* 12/18/2018: Discussion: Some changes are considered additions and not considered revisions.

COMMITTEE MEMBER ITEMS FOR CONSIDERATION						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				Description of problem: As it stands now the code says that ALL changes and modification involving provisions of SPS 382 to SPS 384 made to plumbing plans and specifications shall be submitted to the department or agent for examination. All changes and modifications shall be approved in writing PRIOR to installation. **Extent of Problem:** The problem with this is if we follow this as written, every single job would have the potential to have multiple revisions. There are a multitude of jobs such as remodeling jobs, strip malls etc. that would have never ending revisions due to existing unknown conditions, new tenants, etc. This would overwhelm the department or agent municipalities and slow down plan reviews and inspections. There are also discrepancies between inspectors on exactly what constitutes a change or a modification. Is it as focused as doing offsets around equipment in an attempt to coordinate with other trades? Is it a change if you use an approved equal fixture because the ones that were submitted were not readily available? Is it considered a change if you pipe a system to code more efficiently than the out of state engineer who back vented every single fixture just to get approvals in every state? Why can't an inspector and contractor allow changes without revised drawings when the installer and the inspector concur the revised installation meets code and doesn't cause any public risk? Another issue is when does an original job end and remodeling start? (remodeling, mall and strip mall scenario) Does that mean that every single store that comes into the mall would trigger revised drawings? What if there are 500 stores? **What will happen if change not made:** I am concerned that this is one of the areas in our code where the progress of a job can be negatively impacted by this procedure by causing the continuation of long lead review times while causing major schedule delays to everyone involved with the project. I believe this is an area where our plumbing code procedures could be questioned about having some flexibility in order to keep construction moving forward. What is the public risk if a licensed plumber makes a change within code requirements and has the change inspected and approved by the inspector? **What costs, in terms of time and money, are associated with implementing this change?**		In cases like strip malls, several amendments have taken place over several years and tenants involving several plumbers and the changes impossible to track.

COMMITTEE MEMBER ITEMS FOR CONSIDERATION						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				I feel this will have no extra costs to anyone involved whatsoever. It will allow construction to progress in a more efficient manner making contractors and owners less likely to complain or challenge our plumbing code. It will allow inspectors to spend more time out in the field inspecting installations and looking for code violators.		

NON-COMMITTEE ITEMS FOR CONSIDERATION						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
1.	SPS 382.40(7)(e) See #48c	Limits velocity to 8-ft per second in distribution piping	Wisconsin Fire Sprinkler Coalition	The intent of limiting the maximum velocity in distribution pipe is to reduce the noise of moving water and excessive wear & tear on pipe from daily use. Currently, designers installing a multi-purpose piping sprinkler/plumbing system need to up size distribution piping in order to stay below the velocity requirements when calculating the fire sprinkler demands which adds cost to the installation. I understand the need to address the excessive wear & tear and noise from water used on a daily basis; however, we hope the fire sprinklers never activate and if they do, it would be a once in a lifetime event. **Current:** (e) Maximum velocity. A water distribution system shall be designed so that the flow velocity does not exceed 8 feet per second except as provided in SPS 382.40 (3) (e). (*) **Exception proposed by submitter:** Except that the design flow velocity of the fire sprinkler system in a multi-purpose piping system shall not be limited. *Text of Reference: 382.40 (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.	Less restrictive, provides additional options	Must still meet system demand/volume. City of Madison seeing more stand-alone systems. *8/9/17 - Motion to amend 382.40 (7) (e) as shown.*

NON-COMMITTEE ITEMS FOR CONSIDERATION						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				Note: Pursuant to this subdivision and sub. (2), materials for multipurpose piping systems need to be acceptable under the NFPA 13D standard and s. SPS 384.30, Table 384.30–9. **Note:** See s. SPS 321.095 of the Dwelling Code and s. SPS 362.0903 (10) of the Commercial Building Code as to fire protection provisions for multipurpose piping systems. **2.** Fire department connections are prohibited in a multipurpose piping system.		
1a.	SPS 382.40(7)(e) See #48c	Consider allowing use of pex pipe	Fire Industry to DIS	10/10/17: Discussion: Multipurpose piping: Tom discussed with a fire chief to allow use of pex pipe. Pex pipe being burned as it heats and putting out fire. Cons: Material not readily available and expense of UL piping. (If permitted, would create note under (e))		10/10/2017 - Tabled.
2.	SPS 382.30 (13) 2.	Provision lacks performance requirements.	Tom Burke, Victoria+Albert Baths, United Kingdom Letter submitted to DSPS	Request is to change the standards to make a fair performance requirement for all products that feature an overflow. This provision references the requirement for an overflow on bathtubs without any reference to performance requirements. Concern that the existence of an overflow is pointless without minimal requirements set from performance standards. ASME Standard (A112.18.2/CSA B125.2) does not detail performance requirements for overflows. CSA B45.5/IAPMO Z124, Standard for Plastic plumbing fixtures, only refers to performance requirements for overflows in sinks and lavatories. Homeowners feel the overflows are capable of taking water away from the tub filler at the same rate the tub is filling at. Discussion: Was not intended for “overfilling” rather “overflow”.		*10/10/2017 - Motion to reject recommendation as requester may apply for an alternate approval.*
3.	SPS 384.11 A-384.11	Add ICC-ES as another viable third-party listing agency	Maribel Campos ICC Evaluation Services (ICC-ES) Submitted to DSPS	**SPS 381.20 (2) Alternate standards.** (c) Determination of approval shall be based on an analysis of the alternate standard and the standard referenced in this code, prepared by a qualified independent third party or the organization that published the standard contained in this code.	None	*3/20/2018 - Motion to table request to add ICC-ES as a third-party listing agency. Department would need to evaluate each approved product to ensure they align with current WI standards,*

NON-COMMITTEE ITEMS FOR CONSIDERATION						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	EXISTING LANGUAGE AND PROPOSED CHANGE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
				SPS 384.11 Device listing. Cross connection control devices and water treatment devices complying with the referenced standard in Table 384.11 shall be listed by a nationally recognized listing agency acceptable to the department. 3/20/18 Discussion: • ICC is accredited by ANSI and issue certifications for plumbing mechanical, and gas products. (Certificate included in agenda packet). ICC-ES has been evaluating for about a decade. • Testing included in scope of certification. • Have gone through 3 variances approvals within a year. Most states don't have lists of standards like Wisconsin because they adopt model codes. Request is to be added to list of approved Listing agencies in A384.11 and Table in ch. 381. • Tom – Do they list specific products or numbers? Wisconsin goes by DNR standards. • ICC doesn't have approval authority. They evaluate and list if meets criteria. DIS would still need to review products to approve. • Users of code would still need to refer to table to find standard number. Would require additional user steps. • DIS would most likely still need to look at every product. • ICC would need to come back with additional information for plumbing products with references to our specific tables and inclusive of specific criteria. Will require ICC number and ASTM number. • DPD to look at statutory authority for 384.11 re: what is "nationally recognized by the department". Review for processes for what is determined to be "acceptable" by the department – i.e. SPS 381.20. (Update: Research found that there are no statutory requirements regarding this issue.)		*at which point the testing agency could be added to specific tables within the code.* DIS recommends providing ICC with details of process and application to apply to be listed as an approved listing agency. The Dept. will communicate directly with ICC to address this issue since the request from ICC-ES does not require a code change or committee action/approval.

ADDITIONAL CONSIDERATIONS FOR DISCUSSION						
NO.	RULE PROVISION	ISSUE/REASON FOR CHANGE	PROPOSED BY	ISSUE	POTENTIAL IMPACT/COST	COMMENTS/STATUS
			DIS	Incorporate water tanks (elevated, below ground) – who is regulating? Incorporate DNR language.		
			DIS	CBRF and hospice, dialysis		
			R Dahmen, Bldg. Div.	Ensure there's a cross reference in Ch. 382 or appendix to 2015 IECC, plumbing shall be insulated. Also, point back to building code for accessibility of toilets.		