

Chapter H 62

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

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H 62.01 Basic plumbing principles. (1) The basic principles of this code are enunciated as basic goals in environmental sanitation and safety worthy of accomplishment through properly designed, acceptably installed, and adequately maintained plumbing systems. Some of the details of plumbing construction must vary, but the basic sanitary and safety principles are the same. The results necessary to obtain the desired protection for the health of the people are the same everywhere. As unforeseen situations arise which are not specifically covered in the body of this code, the following principles shall serve to define the intent.

(2) Plumbing in all buildings, public and private, intended for human occupation or occupancy, shall at all times be installed in such manner so as to protect the health, safety and welfare of the public or occupants.

(3) Every building intended for human habitation or occupancy shall be provided with a supply of potable water; such supply shall not be cross connected with an unsafe water supply or with a waste pipe nor be subjected to any hazards of backflow or back-siphonage. When the premises abut on a street in which there is a public watermain, there shall be an individual connection to the public system.

(4) Buildings in which water closets and other plumbing fixtures, devices and appurtenances exist or are to be installed shall be provided with a supply of water adequate in volume and pressure by means of proper pipe sizing to insure that efficient use of the fixture is possible at all times.

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

(6) Every building intended for human habitation or occupancy on premises abutting on a street in which there is a public sewer shall have an individual connection with the public sewer.

(7) Each family dwelling unit provided with a drainage system shall have at least one water closet, one wash basin, one kitchen sink and one bathtub or shower to meet the basic requirements of sanitation and personal hygiene. All other structures for human occupancy or use shall be equipped with sufficient sanitary facilities as prescribed in this chapter or other applicable Wis. Adm. Code chapters and in no case no less than one water closet and one wash basin shall be provided.

(8) The entire building drainage system shall be so designed, constructed, and maintained as to conduct the waste water or sewage quickly from the fixture to the place of disposal, with velocities which will prevent clogging, fouling and the depositing of solids and shall have adequate cleanouts so arranged that the pipes may be readily cleaned.

(9) The drainage pipes should be so designed and constructed as to be proof for a reasonable life of the building against leakage of water or sewer drain air and offensive odors due to defective materials, imperfect connections, corrosion, settlements or vibrations of the ground or building, temperatures changes, freezing or other causes.

(10) The drainage system shall be so designed that there will be an adequate circulation of air in all pipes, no danger of siphonage, aspiration or forcing of trap seals under conditions of ordinary use.

(11) All rooms in which water closets, urinals or similar fixtures are installed shall have adequate lighting and have proper ventilation to the outer air.

(12) Hot water shall be supplied to all plumbing fixtures which normally need or require hot water for their proper use and function.

(13) Plumbing fixtures shall be made of durable, smooth, nonabsorbent and corrosion resistant material and shall be free from concealed fouling surfaces.

(14) If water closets or other plumbing fixtures exist in buildings where there is no sewer within a reasonable distance, suitable provision shall be made for disposing of the building sewage by some method of sewage treatment or disposal satisfactory to the department and local health authority having jurisdiction.

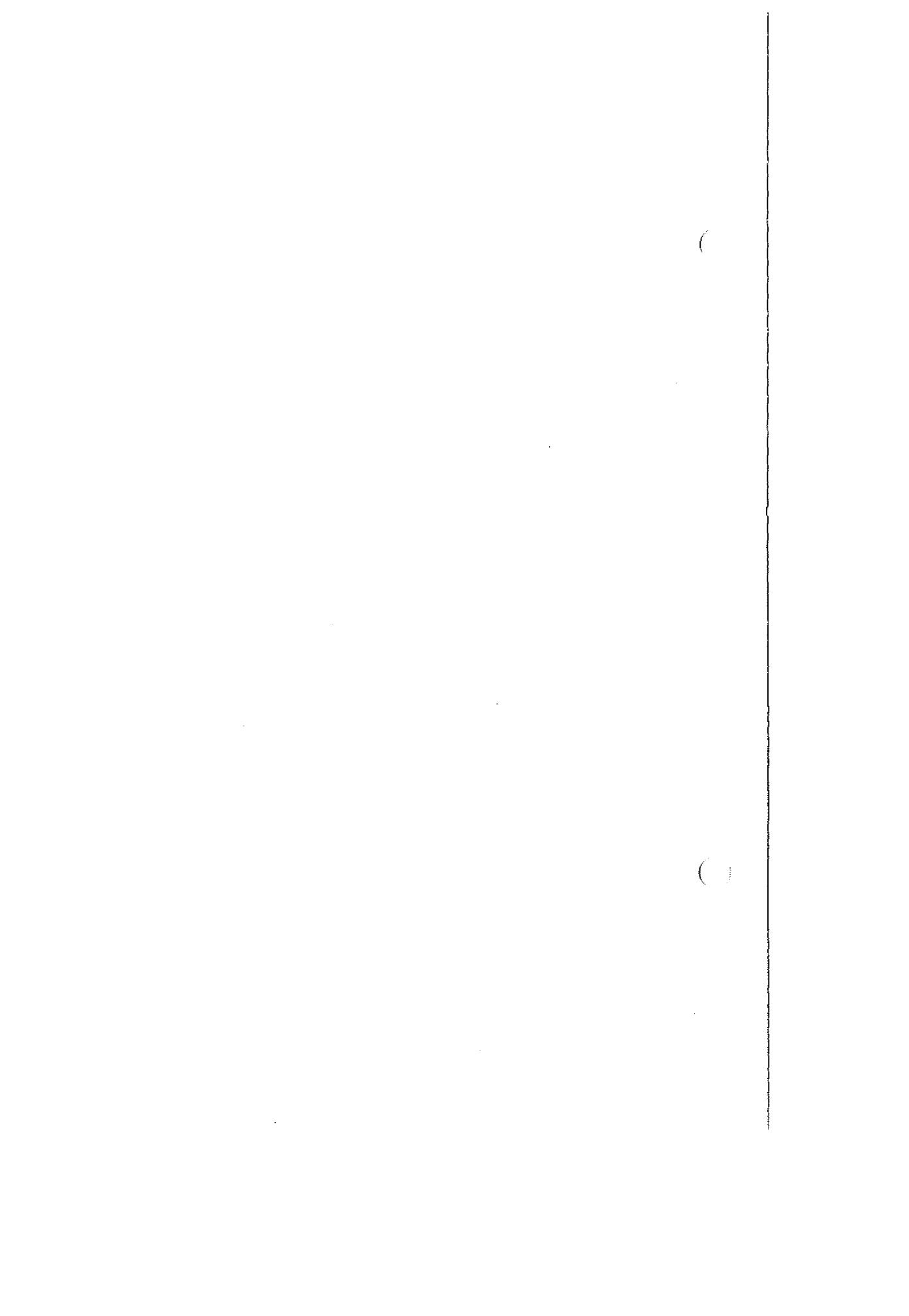
(15) Plumbing systems shall be maintained in a sanitary condition.

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

(17) Plumbing shall be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

(18) Fixtures, devices, appliances and appurtenances shall be supplied with water sufficient in volume and at pressures adequate to enable them to function satisfactorily and without undue noise under all normal conditions of use.

(19) All plumbing fixtures shall be so installed as to provide adequate spacing and shall be reasonably accessible for their intended use and for cleaning.

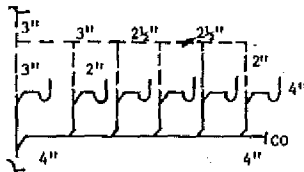


fold with standpipes served by properly sized and vented water sealed traps. The traps may be individually vented or circuit vented. Acceptable methods of installation are indicated in sketches. The following number of washers shall be the maximum to be connected to each size trap:

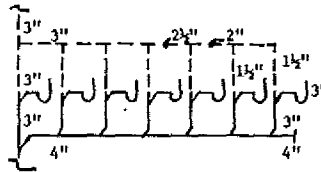
Table 6

TRAP SIZE (Minimum)	NO. OF WASHERS (Maximum)
2 inch trap	2 machines
3 inch trap	3 machines
4 inch trap	4 machines

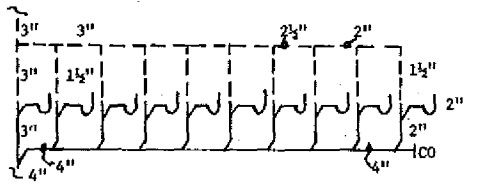
Installation of gutters, troughs, local wastes, indirect manifold waste or other such connections are prohibited installations for the above type equipment. See following sketches.



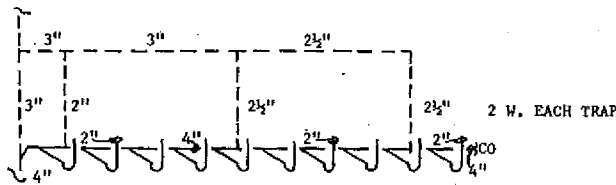
4" TRAP SERVING 4 WASHERS



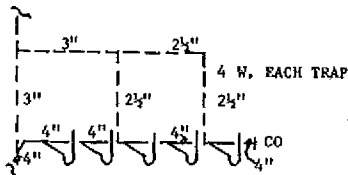
3" TRAP SERVING 3 WASHERS



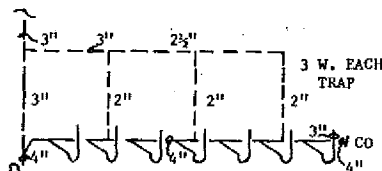
2" TRAP SERVING 2 WASHERS 20 TOTAL - 2 EACH TRAP



2" TRAP SERVING 2 WASHERS



4" TRAP SERVING 4 WASHERS



3" TRAP SERVING 3 WASHERS

(m) *Vacuum cleaners (central units)*. Plumbing connected central vacuum power cleaning units shall be provided with an acceptable air-gap connection in the water intake pipe. The unit shall be connected to the waste piping system through an air-gap or air-break type connection.

(11) **URINALS** (a) *Women*. Urinals for women may be installed as an auxiliary or supplementary fixture. This fixture is not to be used as a substitute for water closets. In all cases, the minimum number of water closets shall be provided.

1. **Enclosure**. The urinal shall be enclosed with a standard size water closet compartment with a door. An instruction card explaining how to use the fixture shall be posted in each such compartment.

2. **Installation**. The fixture shall be installed in accord with all code requirements applicable to water closets. A floor drain shall be installed within the compartment. Each individual fixture shall be equipped with a hand-operated flush tank, satisfactory foot or hand-operated flush valve or other approved device. The water supply to each urinal shall be protected by an approved type vacuum breaker or other acceptable device.

(b) *Men*. 1. **Stall type urinals**. Stall type urinals shall be set into the floor and the floor shall be graded toward the fixture. Each urinal shall be flushed individually by an approved foot or hand-operated flush valve or other approved flushing device which is limited to a maximum of 1.5 gallons per flush. The water supply to a urinal(s) shall be protected by an approved type vacuum breaker or other acceptable device. Urinals in batteries shall be spaced not less than 30 inches center to center. The center line of a single urinal shall be at least 16 inches from the nearest side wall or partition. When the space between stall type urinals or a urinal and a side wall is less than 12 inches, such space shall be filled flush with the front and top of the urinal with nonabsorbent material.

2. **Wall type**. a. Wall hanging men's urinals approved by the department may be installed in all buildings except elementary schools (kindergarten through 8th grade).

Note 1: The definitions and general classifications for schools are found in s. 115.01, Stats.

Note 2: The department recommends that wall hanging urinals for adults be installed at a height between 22 and 24 inches above the floor.

b. Each wall hanging urinal shall be flushed individually by an approved foot or hand-operated flush valve or other approved flushing device which is limited to a maximum of 1.5 gallons per flush. The water supply to a urinal(s) shall be protected by an approved type vacuum breaker or other acceptable device.

c. Wall hanging urinals in batteries shall be spaced not less than 30 inches center to center. The center line of a single urinal shall be at least 16 inches from the nearest side wall or partition.

d. Wall hanging urinals shall be supported by a carrier fitting.

e. Combinations of stall type and wall hanging urinals may be installed.

f. A floor drain shall be located not more than 12 inches from the wall supporting wall hanging urinals. A floor drain shall be provided for each group of 4 or less urinals or a stall type urinal may be used as a substitute for a floor drain.

(c) *Automatic siphon flush tanks.* The use of automatic siphon flush tanks shall be prohibited on stall and wall type urinals.

(12) **WATER CLOSETS.** (a) *Floor outlet.* One floor outlet water closet may connect to a 3 inch horizontal or vertical soil pipe through a 4 x 3 inch bend. Not more than 2 water closets shall be connected to a 3 inch vertical soil pipe. Offset or 3 x 4 inch closet collar connections are prohibited.

(b) *Back to back floor outlet.* Two water closets located back to back shall be connected to a vertical 3 inch pipe with a 3 inch tee-wye cross. Two floor outlet water closets located back to back may connect to a vertical 4 inch stack through a 4 x 3 inch sanitary cross or through a 4 inch sanitary cross fitting. When fixtures discharge into the same soil pipe above the water closets, all fixtures shall be properly vented. Back to back floor outlet water closets connecting to a horizontal soil pipe shall be connected by the proper use of 45° wyes, double wyes, tee-wye combinations or with fittings producing a like radius and may be circuit vented or individually back vented. See section H 62.08 (1) (c) for vertical limitations.

(c) *Side by side floor outlet.* Floor outlet water closets installed side by side or in batteries shall connect to the horizontal soil pipe through a horizontally installed wye, tee-wye or wye and 1/4 bend. The fixtures may be individually back vented or circuit vented. Where circuit vents are used, the size shall be: 3 inch for a battery of 2 to 6 fixtures and 4 inch for a battery of 7 or 8 fixtures.

(d) *Wall outlet floor mounted water closets.* Wall outlet floor mounted type water closet fixtures may be connected to a vertical or horizontal soil pipe through an approved type carrier fitting or 4 inch closet collar. When the soil piping is 3 inches in diameter, the pipe connection shall be increased to 4 inch inside diameter between the fixture and soil pipe fitting connections.

(e) *Back to back wall outlet.* Wall outlet, floor mounted type water closets connected to the same vertical soil pipe shall be installed with a fitting so designed as to prevent cross-flow of wastes or air pressures to the opposite fixture, or through an approved type carrier fitting. Where fixtures discharge into the same vertical pipe on floors above, all fixtures shall be properly vented. Wall outlet, floor mounted water closets may discharge into a horizontal soil pipe through an approved type carrier fitting. The water closets may be individually back vented, served by a 3 inch diameter common vent or a 2 inch diameter common vent increased to 3 inches in diameter a maximum vertical distance of 18 inches above the center line of the fixture opening, with no horizontal offset in the vent pipe below a point 38 inches above the floor line.

(f) *Side by side wall outlet.* Wall outlet floor mounted water closet fixtures installed side by side or in batteries shall connect to the horizontal or vertical soil pipe through an approved carrier type fitting, a wye, tee-wye or wye and 1/4 bend connection. The fixtures shall be individually dry vented.

(g) *Off the floor water closets.* 1. Batteries of side by side off the floor type fixtures shall connect to a horizontal or vertical soil pipe through department approved horizontal or vertical carrier type fittings and shall be individually dry vented.

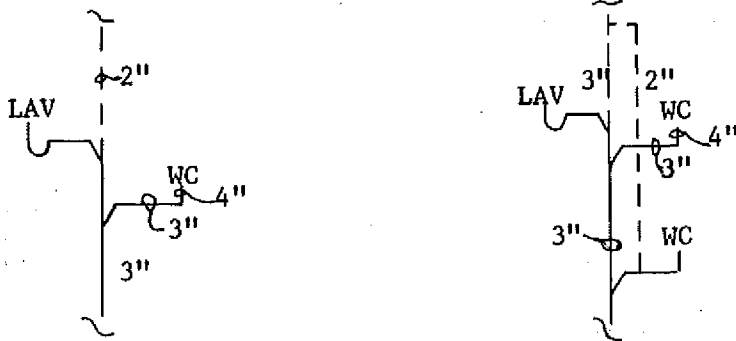
2. Off the floor type water closets installed back to back shall connect to horizontal soil pipe through a department approved type carrier fitting. The water closets may be individually back vented, served by a 3 inch diameter common vent or a 2 inch diameter common vent increased to 3 inches in diameter a maximum vertical distance of 18 inches above the center line of the fixture opening with no horizontal offset in the vent pipe below a point 38 inches above the floor line.

(h) *Stack offsets.* Off the floor type water closets shall be connected to a stack offset through an approved back to back carrier type fitting. The installation shall be served by a unit vent of 3 inch or larger diameter, or may be individually back vented in accord with section H 62.03 (1), table 1. Also see section H 62.06 (1) (c).

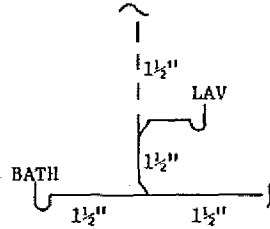
(i) *Multi-story stacks.* Back to back off the floor water closets shall connect to a vertical soil stack through a department approved back to back carrier type fitting. The water closets may be individually back vented, served by a 3 inch diameter common vent or a 2 inch diameter common vent increased to 3 inches in diameter a minimum vertical distance of 18 inches above the center line of the fixture opening with no horizontal offset in the vent pipe below a point 38 inches above the floor line.

(13) **BATHROOM GROUPS.** (a) *Bathroom group (single).* A single group of bathroom fixtures may be installed without individual fixture vents in a one story building or on the top floor of a building provided that:

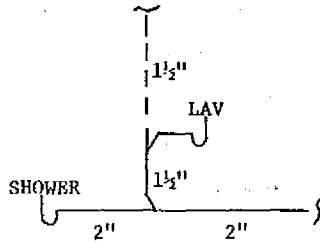
1. The water closet is independently connected to a stack 3 inches or larger with no more than 1 D.F.U. connection above. See following sketch.



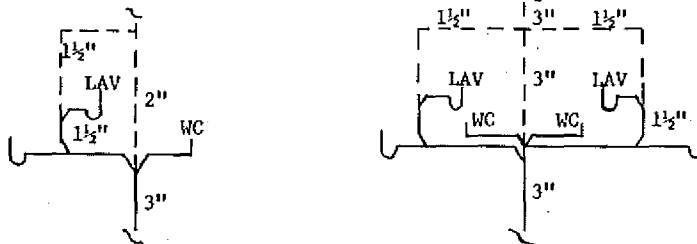
2. The drain from a back vented lavatory serves as a wet vent for a bathtub or shower stall. See following sketch.



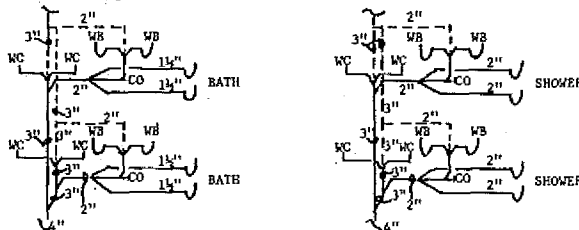
3. Not more than 1 D.F.U. is drained into the 1 1/2 inch vertical vent or not more than 5 D.F.U. drain into the horizontal wet vented pipe. See following sketch.



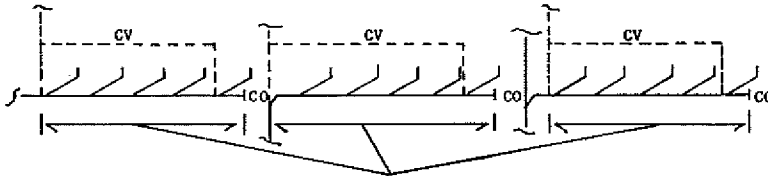
4. The horizontal wet vented pipe shall connect to the stack at or below the same level as the water closet drain when installed on the top floor. See following sketch.



(b) *Double bathroom groups.* Back to back bathroom groups consisting of 2 lavatories and 2 bathtubs or shower stalls may be installed on the same horizontal pipe when served by a 2 inch diameter unit vent provided the water closets (2) connect independently to a 3 inch or larger diameter stack which extends full size without fixture connections above. See following sketches.



(c) *Other fixtures.* A horizontal soil or waste pipe to which 2 and not more than 8 like fixtures are connected may be vented by a circuit vent. The horizontal soil or waste pipe shall be carried full diameter to the last fixture connection and terminate with a cleanout. See following sketch.



NO CONNECTIONS IN THIS AREA EXCEPT LIKE FIXTURES SERVED BY CIRCUIT VENT.

NO CONNECTIONS IN THIS AREA EXCEPT LIKE FIXTURES
SERVED BY CIRCUIT VENT

(d) *Prohibited fixture connections.* There shall be no fixture connection other than the circuit vented fixtures connected to the circuit vented horizontal soil or waste pipe.

(e) *Juvenile fixtures.* Water closets and other fixtures for the use of juveniles shall be of a size and shall be installed at a height suitable for juveniles use. Drain connections shall be provided at height required to serve the fixtures.

(14) **UNLISTED FIXTURES, EQUIPMENT, DEVICES AND APPLIANCES.** For items not included in this section, refer to other applicable sections of this chapter or contact the department for information and proposed installation review.

(15) **INDIRECT WASTE PIPING AND SPECIAL WASTES. SPECIAL EQUIPMENT, INDIRECT WASTE PIPING.** (a) *Piping by plumber.* The indirect waste piping serving any refrigerator, refrigerator case, icebox, ice compartment, vending machine, rinse sinks, steam tables, steam kettles, potato peelers, egg boilers, coffee urns, appliances, devices or appurtenances in which food or provisions are stored or processed, baptismal fountains, clothes washers and extractors, dishwashers, dental cuspidors, garbage can washers, appliances, devices or appurtenances such as stills, sterilizers, bar and soda fountains, boiler blow-off basin outlet drains and similar equipment having public health concern shall be installed by licensed plumbers.

(b) *Piping by equipment installers.* Indirect waste piping serving air-conditioning, cooling coils, air-handling condensate waste, expansion tank overflow and equipment serving steam, power, heating, such as flash tanks, boiler to blow-off basins, machinery wastes, process piping and similar waste piping may be installed by the equipment installer.

History: 1-2-56; r. and recr. Register, October, 1971, No. 190, eff. 11-1-71; am. (1) (b), (d), (2) (c), (3), (8) (c), (11) (b) 2. d. e. f. g. h., (12) (e), (g) 2., r. and recr. (5), Register, November, 1972, No. 203, eff. 12-1-72; r. and recr. (11) (b) 2., Register, January, 1979, No. 277, eff. 2-1-79; r. and recr. (11), Register, April, 1980, No. 292, eff. 5-1-80.

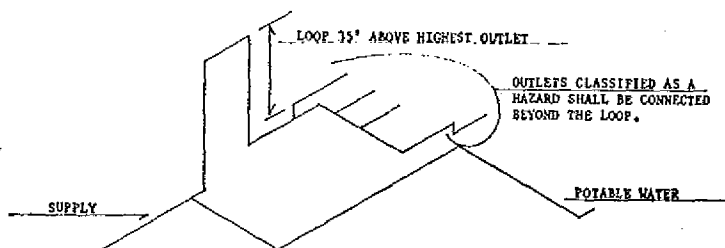
H 62.09 Fixtures. (1) CONSTRUCTION AND DESIGN. All fixtures, appliances, equipment, devices and appurtenances shall be of such design, materials and construction as to comply with applicable standards to

control valve to the fixture. No shut-off valve or faucet shall be installed beyond the vacuum breaker.

2. Reduced pressure zone backflow preventer. A reduced pressure zone type backflow preventer may be installed subject to full static pressure.

3. Devices of all types. Backflow and back-siphonage preventing devices shall be accessibly located, preferably in the same room with the fixture they serve. Installation in utility or service spaces, provided they are readily accessible is also permitted.

4. Barometric loop. Water connections not subject to back pressure where an actual or potential backflow or back-siphonage hazard exists may in lieu of devices specified, be provided with a barometric loop. See following sketch.



(q) *Turf sprinklers.* Turf sprinkler systems, when connected to a potable water system, shall be installed in accordance with these regulations. Adequate and proper provisions shall be made for control and drainage and to prevent back-siphonage or backflow. Water shall not be turned on to any turf sprinkler system until it has been inspected and approved. Materials used in turf sprinkler systems shall be submitted for evaluation and approval prior to installation.

(2) IMPROPER LOCATION OF SEWERS AND DRAINS AND OTHER PIPING. (a) Sewer or drain pipes, wherever possible, shall not pass directly over areas where food, ice or potable liquids are prepared, handled, stored or displayed. Where building design requires that soil or drain pipes be located below the ceiling of such areas, the installation shall be made with the least possible number of joints and shall be installed so as to connect to a vertical stack at the nearest wall or vertical building support and the construction shall be performed as follows:

1. All openings through floors over such areas shall be provided with sleeves securely bonded to the floor construction and projecting not less than $\frac{3}{4}$ inch above top of finished floor with space between sleeve and pipe or duct sealed.

2. Floor and shower drains installed above such areas shall be equipped with integral seepage pans.

3. Plumbing fixtures in rooms located above such areas shall be of the wall mounted type except bathtubs. Tubs shall have waste and overflow connections made above the floor and piped to trap below floor. All connections through floor and to trap shall conform with all other provi-

sions of this regulation. No floor openings other than sleeve for waste pipe will be permitted for tubs.

4. All other soil or drain pipes shall be galvanized steel or cast iron with screwed joints sealed with litharge and glycerine or copper tube with soldered joints. Cleanouts shall be extended through the floor construction above.

5. All soil and drain pipes located above such areas shall be subjected to a standing water test of not less than 25 feet.

6. All piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be thermally insulated.

7. Where pipes are run in ceilings above such areas, the ceiling shall be of the removable type, or shall be provided with access panels in order to form a ready access for inspection of piping unless a lath and plaster ceiling is provided.

8. In lieu of the above, other methods may be approved by the department.

(b) Exposed soil, waste and other drainage pipe lines in a pool or equipment room shall not pass over the pool, surge tank or open filter.

History: 1-2-56; r. (2) through (7), Register, October, 1971, No. 190, eff. 11-1-71; r. and rec. Register, November, 1972, No. 203, eff. 12-1-72.

H 62.15 Water conserving fixtures. (s. 145.25, Stats.) (1) TYPES OF WATER CONSERVING FIXTURES. (a) All water closets, lavatory faucets, urinals and shower heads shall meet the requirements of the following subsections and be of an approved type. Test data shall be submitted based on 50 pounds per square inch water pressure.

(2) PROHIBITIONS. (a) *All buildings.* "No person may sell at retail or install in or cause to be installed in any building:"

1. "A water closet which uses more than 4 gallons of water per flush."

2. "A shower head which uses more than 3 gallons of water per minute."

(b) *Public restrooms and public buildings.* No person may install or cause to be installed in any public restroom or public building:

1. "Any urinal intended for use by male persons which is operated by an automatic urinal flush valve or hand-operated flush valve which uses more than 1.5 gallons of water per flush per use."

2. "Any automatic siphon urinal flush tanks."

3. "Any wash basin faucet which allows more than 1 gallon of water to flow through the faucet after the handle is released."

Note: Quotation marks indicate statutory language taken verbatim or paraphrased from s. 145.25, Stats.

(c) *One and 2 family dwelling.* No person may install or cause to be installed, any faucet connected to a wash basin in any private dwelling which allows more than 3 gallons of water per minute to flow through the faucet.

Register, April, 1980, No. 292
Health

(3) LISTING OF ACCEPTABLE WATER CLOSETS. (a) *Publish*. The department shall publish a list of water closet models which have been manufactured and tested in accordance with recognized standards and which have been certified by the manufacturer to use no more than 4 gallons per flush.

(b) *Manufacturer's responsibilities*. Manufacturers desiring to have their product included on the published list shall submit for each water closet model laboratory test data, engineering data, a certification by the manufacturer that the product meets the standards set forth above and a copy of the sales brochure.

(c) *Manufacturer's listing*. The manufacturer shall submit a list of the make and model of all water closets tested and offered for sale in Wisconsin, regardless of water use.

(d) *Identification*. Each closet shall be permanently marked for identification as required by H 62.19.

(4) LISTING OF OTHER WATER SAVING DEVICES. (a) *Shower heads*. The department shall publish a list of shower heads which have been manufactured, tested and certified by the manufacturer to permit not more than 3 gallons per minute to flow through the head.

(b) *Urinals and urinal flushing devices*. The department shall publish a list of all Wisconsin approved urinals and urinal flushing devices which have been manufactured, tested and certified by the manufacturer to permit not more than 1.5 gallons per flush per use to flow through the valve or fixture.

(c) *Faucets in public restrooms and public buildings*. The department shall publish a list of all faucets which have been manufactured, tested and certified by the manufacturer to permit not more than 1 gallon of water to flow through the faucet after release of the handle.

(d) *Faucets for lavatories or wash basins installed in private dwellings*. The department shall publish a list of all faucets which have been manufactured, tested and certified by the manufacturer to permit not more than 3 gallons of water per minute to flow through the faucet.

(e) *Flow control and flow restrictor devices*. 1. Flow control or restricting devices should be installed on the water inlet side of the faucet or have an integral flow control or restrictor.

2. Flow controlling aerators. Flow controlling or restricting aerators may be used in lieu of the recommended control or restricting device when approved by the department.

3. All items listed under H 62.15 (4) shall have a permanent means of identification as required by H 62.19.

4. All flow control and flow restrictive devices manufactured, tested and certified by the manufacturer shall limit the flow through the unit to the test and certification rate. They shall not be removable without special knowledge or effort.

(5) EXEMPTIONS. (a) *Availability*. When a water conserving device or fixture is required, the item (s) shall be available from 2 or more manufacturers. When a required water conserving device or fixture is not

available from 2 or more manufacturers, the requirement may be waived subject to departmental approval.

(b) *Waiver.* The department, upon request, may waive compliance with flushing requirements established by s. 145.25, Stats., and this section if the following conditions prevail:

1. Existing buildings. Any building in existence or under construction on or before January 1, 1979, if its drainage system design or installation requires a greater quantity of water to function properly.

2. Public sewer design. If any building is served by a public sewer which requires a greater quantity of water to maintain flow.

History: Cr. Register, April, 1980, No. 292, eff. 5-1-80.

H 62.16 Health care and related facilities. (1) **PLAN APPROVAL REQUIRED.** Plans for plumbing and equipment for health care facilities shall be approved by the department.

(2) **SCOPE.** The scope of this section shall cover devices, fixtures and equipment which are installed and maintained in health care facilities such as hospitals, nursing or rest homes, homes for the aged, infirmaries, residential care facilities, orphanages, sanitariums, sanatoriums, clinics, mortuaries, and schools of medicine, surgery, dentistry, and research and testing laboratories whether enumerated or not. This section may also apply to offices of dentists and doctors.

(3) **INTENT.** The primary intent of the following minimum requirements is to protect public health by eliminating either potential health or safety hazards to patients and institutional personnel, and to promote the efficient use, operation and maintenance of the equipment used in the institution or establishment. Fixtures, devices and/or equipment in addition to those prescribed herein may be required dependent upon the type of occupancy, treatment, care or layout. Such additional facilities shall be installed in accord with the provisions of this chapter.

(4) **PLUMBING IN MENTAL HOSPITALS.** Special consideration shall be given to the design and installation of plumbing fixtures in areas where disturbed patients are housed. No pipes or traps shall be exposed and all fixtures shall be securely bolted through walls or floors.

(5) **SPECIAL FIXTURES AND EQUIPMENT ACCEPTABILITY.** (a) *Special fixtures.* Fixtures which are designed for any special use such as, therapy, special cleansing and/or disposal of waste materials shall be smooth, impervious, corrosion resistant materials and, if subject to temperatures in excess of 180° F., shall be able to withstand without damage, higher temperatures as may be specified. Scrub-up sinks, lavatories and sinks in patient care areas, and fixtures used by medical and nursing staff, shall have the water supply spout terminate a minimum of 5 inches above the rim of the fixture. These fixtures shall be equipped with valves or faucets which can be operated without use of the hands.

(b) *Special equipment.* All devices, appurtenances, appliances and apparatus intended to serve a special function such as sterilization, distillation, processing, cooling, storage of ice or foods, etc., which may be connected to either the water supply distribution or drainage systems or both, shall be provided with protection against back-siphonage, back-

flow, flooding, fouling, or any possibility of contaminating any portion of the water supply system, or equipment, or the misuse of any drain.

(c) *Therapeutic equipment.* Therapeutic equipment shall not be counted as a patient bathing fixture to meet the required patient bath ratio.

(6) **FIXTURE AND EQUIPMENT INSTALLATION.** (a) *Clinic sinks.* Such fixtures shall have an integral trap in which the upper portion of a visible trap seal provides a water surface. The fixture shall be designed so as to permit complete removal of the contents by siphonic and/or blow-out action, and to reseal the trap in a single flushing operation. A flushing rim shall provide water to cleanse the interior surface. The fixtures shall have flushing and cleansing characteristics similar to a water closet.

(b) *Prohibited use of clinic sinks and service sinks.* A clinic sink shall not be used as a janitor's service sink. A janitor's service sink shall not be used for the disposal of urine, fecal matter, or other human wastes.

(c) *Special requirement for ice manufacture and storage.* 1. No machines for manufacturing ice, or any device for handling or storing ice, shall be located in a room containing a bedpan hopper, clinic sink, bedpan washer, or similar fixture. Machines for manufacturing ice, or devices for handling or storing ice intended for either human consumption or packs, shall be located in a clean utility room, a floor pantry, a diet kitchen, or in other similar locations.

2. Each drain serving an ice chest or box shall discharge into an indirect waste receptor. Each drain shall discharge through an air-break above the receptor. The end of the drain shall be covered with a removable 10 mesh per inch noncorrosive screen.

(7) **STERILIZERS.** (a) *Descaling prohibited.* The interior of water sterilizers, stills, or similar equipment shall not be descaled or otherwise treated by acid or other chemical solutions while the equipment is connected to the water and/or drainage systems.

(b) *Compliance with boiler and unfired pressure vessel code.* Pressure sterilizers and pressure type instrument washer sterilizers installed after the effective date of this code shall be constructed and stamped in accordance with the provisions of Wis. Adm. Code s. Ind 41.50 (1) (e). All pressure sterilizers and pressure type instrument washer sterilizers regardless of size shall be equipped with pressure relief devices in accordance with the provisions of s. Ind 41.50 (1) (e).

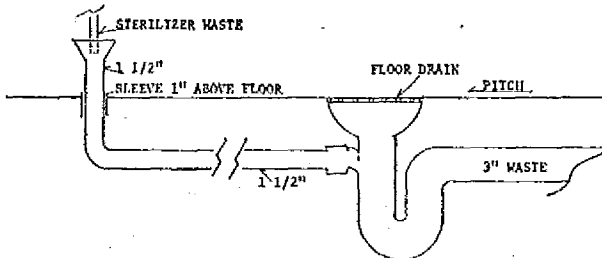
(c) *Sterilizer piping.* The connecting piping and/or devices for sterilizers shall be accessible for inspection and maintenance.

(d) *Bedpan washers and clinic sinks.* Bedpan washers and clinic sinks shall be connected to the sanitary drainage system and vented in accordance with the requirements for water closets. Vapor vents serving bedpan washers shall not connect to the plumbing system.

(8) **DRAINAGE AND VENTING.** (a) *Sterilizer wastes.* 1. Indirect wastes required. All sterilizers shall be provided with individual and separate indirect wastes, with air-gaps of not less than 2 diameters of the waste tailpiece. The upper rim of the receptor, funnel, or basket type waste fitting shall be not less than 2 inches below the vessel or piping, whichever is lower. Except as provided in sections H 62.15 [62.16] (8) (a) 3.

and 5., a "P" trap shall be installed on the discharge side of and immediately below the indirect waste connection serving each sterilizer.

2. Floor drain required. In any room containing the recessed, or concealed portions of sterilizers, not less than one acceptable floor drain, connecting to the drainage system, shall be installed in a manner to drain the entire floor area. The floor drain waste and trap shall be a minimum diameter of 3 inches. It shall receive the drainage from at least one sterilizer within the room to assure maintenance of the floor drain trap seal. The sterilizer drain may be installed on a branch taken off between the floor drain trap and the strainer. No individual sterilizer waste trap shall be required on this type of installation. See following sketch.



3. Battery assemblies. A battery assembly of not more than 3 sterilizer wastes may drain to one trap, provided the trap and waste are sized according to the combined fixture unit rating; the trap is located immediately below one of the indirect waste connections; the developed distance of a branch does not exceed 8 feet; and the branches change direction through a tee-wye or wye pattern fitting.

4. Bedpan steamers, additional trap required. A trap with a minimum seal of 3 inches shall be provided in a bedpan steamer drain located between the fixture and the indirect waste connection.

5. Pressure sterilizer. Except when an exhaust condenser is used, a pressure sterilizer chamber drain may be connected to the exhaust drip tube before terminating at the indirect waste connection. If a vapor trap is used, it shall be designed and installed to prevent moisture being aspirated into the sterilizer chamber. The jacket steam condensate return, if not connected to a gravity steam condensate return, shall be separately and indirectly wasted. If necessary to cool a high temperature discharge, a cooling receiver, trapped on its discharge side, may serve as the fixture trap.

6. Pressure sterilizer exhaust condensers. The drain from the condenser shall be installed with an indirect waste. If condensers are used on pressure sterilizers, the chamber drain shall have a separate indirect waste connection.

7. Water sterilizer. All water sterilizer drains, including tank, valve leakage, condenser, filter and cooling, shall be installed with indirect waste or according to section H 62.15 [62.16] (8) (a) 2.

8. Pressure instrument washer-sterilizer. The pressure instrument washer-sterilizer chamber drain and overflow may be interconnected. Also, they may be interconnected with the condenser.

(b) *Vapor vent material.* Material for vapor vents serving bedpan washers and sterilizer vents serving sterilizers shall be materials approved for vent piping.

(c) *Vent connections prohibited.* Connections between vapor vents serving bedpan washers, sterilizing apparatus, and/or normal sanitary plumbing systems, are prohibited.

(d) *Vapor vents and stacks.* 1. Bedpan washers shall be vented to the outer atmosphere above the roof by means of one or more vapor vents. The vapor vent for a bedpan washer shall be not less than a 2-inch diameter pipe. A vapor vent serving a single bedpan washer may drain to the fixture served.

2. Multiple installations. Where bedpan washers are located above each other on more than one floor, a vapor vent stack may be installed to receive the vapor vent on the various floors. Not more than 3 bedpan washers shall be connected to a 2-inch vapor vent stack, 6 to a 3-inch vapor vent stack, and 12 to a 4-inch vapor vent stack. In multiple installations, the connections between a bedpan washer vapor vent and a vapor vent stack shall be made by use of a tee or tee-wye sanitary pattern drainage fittings, installed in an upright position.

3. Trap required. The bottom of the vapor vent stack, except when serving only one bedpan washer, shall be drained by means of a trapped and vented waste connection to the plumbing sanitary drainage system. The trap and waste shall be the same size as the vapor vent stack.

4. Trap seal maintenance. A water supply of not less than ¼ inch minimum tubing shall be taken from the flush supply of each bedpan washer on the discharge or fixture side of the vacuum breaker, trapped to form not less than a 3-inch seal, and connected to the vapor vent stack on each floor. The water supply shall be so installed as to provide a supply of water to the vapor vent stack for cleansing and drain trap seal maintenance each time a bedpan washer is flushed.

(e) *Sterilizer vapor vent and stacks.* 1. Connections. Multiple installations of pressure and nonpressure sterilizers shall have their vent connections to the sterilizer vent stack made by means of inverted wye fittings. Such vent connections shall be accessible for inspection and maintenance.

2. Drainage. The connection between sterilizer vent and/or exhaust openings and the sterilizer vent stack shall be designed and installed to drain to the funnel or basket-type waste fitting. In multiple installations, the sterilizer vent stack shall be drained separately to the lowest sterilizer funnel or basket-type waste fitting or receptor.

(f) *Sterilizer vapor vent stack sizes.* 1. Bedpan steamers. The minimum size of a sterilizer vent serving a bedpan steamer shall be 1½ inches in diameter. Multiple installation shall be sized according to table 22.

Table 22

**VAPOR VENT STACK SIZES FOR BEDPAN STEAMERS
AND BOILING TYPE STERILIZERS**
(Number of connections of various sizes permitted
to various sized sterilizer vent stacks)

Stack size	Connection size	
	1½"	2"
1½-inch'	1 or	0
2-inch'	2 or	1
2-inch'	1 and	1
3-inch'	4 or	2
3-inch'	2 and	2
4-inch'	3 or	4
4-inch'	4 and	4

*Total of each size.

*Combination of sizes.

2. Boiling type sterilizers. The minimum size of a sterilizer vent stack shall be 2 inches in diameter when serving a utensil sterilizer, and 1½ inches in diameter when serving an instrument sterilizer. Combinations of boiling type sterilizer vent connections shall be based on table 22.

3. Pressure sterilizers. Sterilizer vent stacks shall be 2½ inches minimum; those serving combinations of pressure sterilizer exhaust connections shall be sized according to table 23.

Table 23

VAPOR VENT STACK SIZES FOR PRESSURE STERILIZERS
(Number of connections of various sizes permitted to various sized vent stacks)

Stack size	Connection size			
	¾"	1"	1¼"	1½"
1½-inch'	3 or	2 or	1	
1½-inch'	2 and	1		
2-inch'	6 or	3 or	2 or	1
2-inch'	3 and	2		
2-inch'	2 and	1 and	1	
2-inch'	1 and	1 and		1
3-inch'	15 or	7 or	5 or	3
3-inch'		1 and	2 and	2
3-inch'	1 and	5 and		1

*Combination of sizes.

*Total of each size.

4. Pressure instrument washer-sterilizer sizes. The minimum size of a sterilizer vent stack serving an instrument washer-sterilizer shall be 2 inches in diameter. Not more than 2 sterilizers shall be installed on a 2-inch stack, and not more than 4 on a 3-inch stack.

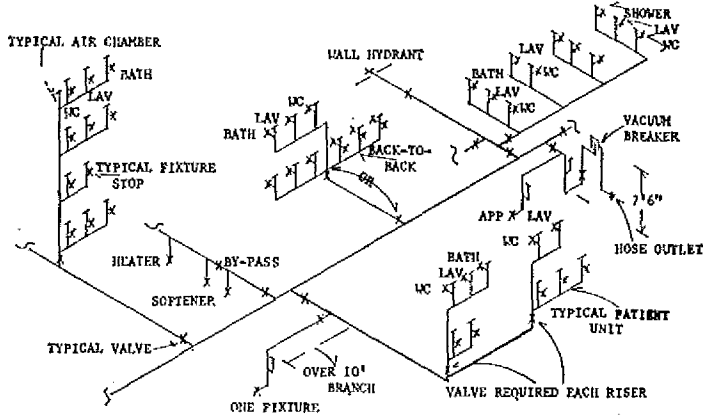
(9) FLOOR DRAINS PROHIBITED. Floor drains shall not be installed in operating or delivery rooms.

(10) WATER SUPPLY. (a) *Water services.* All hospitals shall be provided with at least 2 water service connections and whenever more than one street main is available, the connections shall be made to different street mains.

1. The water service pipe for all other health care facilities shall be of sufficient size to furnish water to the building in the quantities and at the pressures required in Wis. Adm. Code sections H 62.13 (4) (d) and (h) 3. [(4) and (5)] and H 62.15 [62.16] (10) (c).

2. Water services shall be in accord with the requirements of Wis. Adm. Code section H 62.15 (2).

(b) *Water distribution control valves.* 1. Four or less patient care units, containing not more than 2 persons per unit exclusive of intensive care coronary units, may be served with one branch control valve. All fixtures, appliances, appurtenances, lawn sprinkler faucets and wall hydrants shall be valved. See following sketch.



2. Control valves for risers, water heating equipment, water softeners and tank controls shall be in accord with Wis. Adm. Code section H 62.13 (4) (c), (d), (e) and (h) [(4) (j) 2. b. c. d. and g.]. Control valve accessibility and design shall be in accord with section H 62.13 (4) (f) and (g) [(4) (j) 2. e. and f.], Wis. Adm. Code. See above sketch.

(c) *Velocities and flow capacities.* Water supply piping shall be designed to provide service to upper floor installations at a minimum pressure of 15 (p.s.i.) pounds per square inch during maximum demand periods. Velocities shall not exceed 8 (f.p.s.) feet per second. Where static pressure exceeds 80 (p.s.i.) pounds per square inch, pressure reducing controls shall be installed to avoid fracture or other damage to the system. The supply demand in gallons per minute in the building water distribution system shall be determined on the basis of the load in terms of supply fixture units and of the relationship between load and supply demand as shown in table 24 and pertinent portions of tables 13 and 14.

Table 24
DATA FOR ESTIMATING WATER SUPPLY DEMAND AND WASTE REQUIREMENTS

Fixture	Fixture Units		Minimum Pipe Sizes, Inches					Remarks
	Water	Waste	Waste	Trap	Vent	Cold Water	Hot Water	
Water closet (tank) -----	6	6	3	2	2	¾	½	H.W. required with bedpan
Water closet (flush valve) -----	10	8	3	2	2	1	½	washer hose only
Lavatory -----	2	1	1½	1¼	1¼	½	½	
Urinal (tank) -----	3	4	2	2	1½	½	---	
Urinal (flush valve) -----	5	4	---	---	---	1	---	
Shower -----	4	2	3 FD	3	---	½	½	
Patient bath (public) -----	4	3	1½	1½	1½	½	½	
Patient bath (pvt.) -----	2	3	1½	1½	1½	½	½	
Drinking fountain -----	1	½	1¼	1¼	1¼	½	---	
Sitz bath -----	4	3	1½	1½	1½	½	½	
Clinical sink -----	10 CW	6	3	3	2	1	¾	
(Flushing rim) -----	4 HW	---	---	---	---	---	---	
Scrub sink -----	4	3	2	2	1½	¾	¾	2, 3 or 4 place sink
Single sink for misc. hospital use -----	3	3	1½	1½	1½	½	½	
Double sink for misc. hospital use -----	4	4	2	2	1½	¾	¾	
Laboratory sink -----	2	2	1½	1½	1½	½	½	
Ice machine -----	1	1	2 SD	2	1½	¾	---	
Plaster sink -----	6	4	2	2	1½	¾	¾	Use with plaster trap
X-ray tank -----	4	2	1½	1½	1½	½	½	Based on 18 x 30 x 22-inch tank
Bedpan sanitizer -----	10	6	3	2	2	1	---	½-inch STM connection
Autopsy table -----	4	4	1½	1½	1½	½	½	
Animal area sinks -----	4	4	2	2	1½	¾	¾	
Cup sink -----	1	1	1¼	1¼	1¼	½	---	

(d) *Piping insulation.* Circulating, hot, cold and chilled water piping shall be insulated. Cold and chilled water pipe insulation shall have an integral or separate vapor barrier.

(e) *Special piping systems.* Distilled water, ionized water, laboratory and other special piping systems shall be included in the plans submitted. The plans shall incorporate sufficient detail to clearly establish the installation proposed.

(f) *Water supply protection.* The installation of the water supply shall meet all the applicable requirements prescribed in Wis. Adm. Code sections H 62.13 and H 62.14, and as provided in table 25 including the corresponding reference number.

Table 25

Equipment	Protective Device	Location	Reference No.
Bath with shampoo nozzle	Vacuum breaker	6'0" above bottom of tub	1
Bedpan sanitizer	Vacuum breaker	Part of flush valve	1
Bedpan washer hose	Vacuum breaker	5'9" above floor	1
Hose and faucet at service sink	Vacuum breaker	6' above normal use of hose	1
Sterilizer condenser	Vacuum breaker	6' above unit	1
Flash washer	Vacuum breaker	6' above unit	1
Glove washer	Vacuum breaker	6' above unit	1
Stills	Air-gap	On discharge	5
Ultrasonic cleaner	Vacuum breaker	6" above unit	1
Developing tank	Vacuum breaker	6" above unit	1
Dental unit	Vacuum breaker	Part of unit	1
Hydrotherapy bath	Vacuum breaker	6" above unit	1
Radiology cooling coil (water bath)	Air-gap	On discharge	5
Pipette washer	Vacuum breaker	6" above unit	1
Laboratory spout	Vacuum breaker	At threaded discharge	2
Cage washer	Vacuum breaker	6" above unit	1
Tube washer	Vacuum breaker	Part of control valve	1
Bottle washer	Vacuum breaker	6" above unit	1
Food waste grinder	Vacuum breaker	6" above unit	1
Peeler	Air-gap	On supply	4
Dishwasher	Vacuum breaker	6" above unit	1
Can washer	Vacuum breaker	6" above unit	1
Ice machine	Air-gap	On discharge	5
Pot washer	Vacuum breaker	6" above unit	1
Coffee urn	Vacuum breaker	6" above unit	1
Glass washer	Vacuum breaker	6" above unit	1
Refrigeration condenser	Air-gap	On discharge	5
Clothes washer	Vacuum breaker	6" above unit	1
Soap and brine tanks	Vacuum breaker	6" above unit	1
Autopsy table	Vacuum breaker	6'0" above floor	1
Aspirator	Vacuum breaker	6'0" above floor	1
Hose station	Vacuum breaker	At threaded discharge	2
Flush rim floor drain	Vacuum breaker	5'9" above floor	1
Incinerator gas washer	Air-gap	On water supply	5
Lawn sprinklers	Vacuum breaker	Outdoor type	1
Wall hydrant	Vacuum breaker	At threaded discharge	2
Hose bibb	Vacuum breaker	At threaded discharge	2
Package air-conditioner	Air-gap	On discharge	5
Cooling tower	Backflow preventer	On water supply	3
Boiler make-up water	Backflow preventer	On water supply	3
Vacuum pumps and air washing	Air-gap	On water supply	4
Spray coil for air washing	Vacuum breaker	6" above unit	1
Expansion tank	Backflow preventer	On water supply	3

1. The designation "vacuum breaker" means a non-pressure, atmospheric type device. The installation elevation means the distance above the spill level of the fixture or equipment served, or the height to which a connected discharge may be raised to cause gravity back-flow to reach the device. The designated installation shall be measured from the bottom of the device, or the critical level marking if indicated on the device. The installation and elevation shall permit the vacuum breaker to drain and actuate each time the control valve is operated. No shut-off valve shall be permitted downstream from the vacuum breaker. The vacuum breaker shall not be installed in a manner so as to be under continuous pressure.

2. The location "at the threaded discharge" means the location where an aerator would normally be installed. The vacuum breaker is the in-line type and for the laboratory faucet the serrated nozzle is then screwed into the discharge end of the vacuum breaker. When this vacuum breaker is used with a hose bibb, it is threaded onto the male end and the hose is connected to the vacuum breaker.

3. The designation "backflow preventer" means the reduced pressure type backflow preventer which includes two spring loaded check valves, a broken connection to a drain and usually two gate valves. The use of this device requires that adequate and rapid drainage be available.

4. An air-gap on the water supply means that the air-gap shall be located at the supply opening to the fixture or equipment it serves. An air-gap is the minimum vertical distance between the supply discharge orifice and the spill level of the receptor, fixture or equipment served. This minimum vertical distance shall be at least 2 diameters of the discharge orifice, or a minimum of one inch, whichever is the greatest.

5. An air-gap on the waste line means an indirect connection between the fixture or equipment and the waste receptor. The waste discharge orifice governs the minimum distance according to section H 62.15 [62.16] (10) (f) 4.

(g) *Hot water supply control.* Hot water supply to patients' showers, therapeutic equipment, and continuous baths shall be provided with control valves automatically regulating the temperature of the water supply to the fixture. The valve shall fail in a closed position when the tempered water supply to the fixture exceeds 110° F.

(h) *Hot water supply.* The water supply distribution system shall be designed to provide hot water at each applicable fixture at all times. The system shall be of a circulating type. The circulating pumps shall be arranged for continuous operation or shall be controlled by an aquastat in the circulating piping. See Wis. Adm. Code section H 62.13 (4) (i) 3 [62.13 (4) (f)].

(i) *Water heaters and tanks.* Storage tanks when provided shall be fabricated of non-corrosive metal or be lined with non-corrosive material. The water heating equipment shall have a sufficient capacity to supply water at the temperature and amounts in table 26.

Table 26

	Patient Areas	Clinical	Dietary	Laundry (2 gals. per lb. of laundry)
Gal/hr/bed	6½	6½	4	4½
Temp. °F. (Maximum)	110°	125°	180°	180°

(11) **ASPIRATORS.** The use of water aspirators shall be limited to those units approved by the department.

(12) **SPOUTS AND ACTIONS—HOSPITAL AND NURSING HOME FIXTURES.** (a) The selection of spouts and actions for hospital and nursing home plumbing fixtures shall comply with section H 62.15 [62.16] (12) (b) and table 27.

(b) Lavatories and sinks required in patient care areas shall have the water supply spout mounted so that its discharge point is a minimum distance of 5 inches above the rim of the fixture. All fixtures used by medical and nursing staff, and all lavatories used by patients and food handlers shall be trimmed with valves which can be operated without the use of hands. Where blade handles are used for this purpose they shall not exceed 4½ inches in length, except that handles on scrub sinks and clinical sinks shall be not less than 6 inches long.

Table 27

**SPOUTS AND ACTIONS FOR HOSPITAL AND NURSING
HOME FIXTURES**

Location	Type of Spout	Type of Action Minimum
NURSING DEPARTMENT		
Patient toilet room	Gooseneck	Wrist
Patient toilet room—Isolation	Gooseneck	Knee
Utility room	Gooseneck	Wrist
Treatment room	Gooseneck	Wrist
Medicine room	Gooseneck	Wrist
Lavatory in floor kitchen	Gooseneck	Wrist
Sink in floor kitchen	Sink faucet	Wrist
Nurses toilet room	Lavatory supply	Hand
Floor laboratory	Laboratory gooseneck	Vertical hand
NURSERY		
Nursery	Gooseneck	Wrist
Suspect nursery	Gooseneck	Wrist
Examination and treatment	Gooseneck	Wrist
Premature nursery	Gooseneck	Foot
Formula room	Gooseneck	Wrist
Labor room	Gooseneck	Wrist
SURGICAL		
Scrub room	Gooseneck with spray head	Knee
Sub-sterile room	Sink faucet	Wrist
Clean-up room	Sink faucet	Wrist
Frozen sections room	Laboratory gooseneck	Vertical hand
Surgical supply room	Gooseneck	Wrist
Work room	Sink faucet	Wrist
Cystoscopic room	Gooseneck with spray head	Knee
Fracture room	Sink faucet	Wrist
Recovery room	Gooseneck	Foot

Location	Type of Spout	Type of Action Minimum
CENTRAL SUPPLY		
Work room	Sink faucet	Wrist
Solutions room	Sink faucet	Wrist
Needle and syringe room	Sink faucet	Wrist
Glove room	Gooseneck	Wrist
Pharmacy	Laboratory gooseneck	Vertical hand
Manufacturing	Gooseneck	Wrist
EMERGENCY DEPARTMENT		
Observation bedroom	Gooseneck	Wrist
Utility room	Gooseneck	Wrist
Operating room	Gooseneck with spray head	Knee
D.O.A. room	Gooseneck	Wrist
Examination room	Gooseneck	Wrist
DIAGNOSTIC AND TREATMENT		
Occupational therapy	Gooseneck	Wrist
Hydro-therapy room	Gooseneck	Wrist
Examination room	Gooseneck	Wrist
Deep therapy	Gooseneck	Wrist
Superficial therapy	Gooseneck	Wrist
Radium treatment and exam	Gooseneck	Wrist
Toilet room	Gooseneck	Wrist
Dark room	Sink faucet	Hand
Autopsy	Gooseneck with spray head	Knee
Lavatory in autopsy shower room	Gooseneck	Wrist
Laboratories	Laboratory gooseneck	Vertical hand
OUTPATIENT DEPARTMENT		
Examination and treatment room	Gooseneck	Wrist
Dental operating	Gooseneck	Knee
Dental laboratory	Laboratory gooseneck	Vertical hand
Dental recovery	Gooseneck	Wrist
Surgical room	Gooseneck with spray head	Knee
Eye examination room	Gooseneck	Knee
Ear, nose and throat room	Gooseneck	Knee
SERVICE DEPARTMENT		
Lavatory in kitchen	Lavatory supply	Wrist

(13) RADIOACTIVE MATERIALS. See Wis. Adm. Code chapter H 57.

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.

H 62.17 Mobile home parks. (1) PLAN APPROVAL. (a) Plans and specifications. Complete plans and specifications shall be submitted to the department and written approval received before letting contracts or commencing work for all mobile home park sewerage, mobile home park water main and water services and for the addition to or replacement of existing systems.

(b) *Local approval.* The approval by county or other local governmental agency shall not exempt the requirements for state approval for the installation of sewerage and water systems serving mobile home parks.

(c) *Submission of plans and specifications.* All plans and specifications shall be submitted in triplicate and shall include the following:

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1. Detailed plan of the proposed sewerage and water system showing mobile home site and service building location with all building sewers and water services indicated.

2. Legal description of the property on which the park is to be constructed.

3. Availability of plans. There shall be maintained at the project site one set of plans bearing the department's stamp of approval.

4. Plans and specifications submitted for private sewage disposal systems shall meet the criteria set forth in Wis. Adm. Code section H 62.20.

(2) MOBILE HOME PARK SEWERAGE SYSTEM. (a) *General.* The park main sewerage system shall be constructed of materials approved by the department, and installed to limit infiltration of surface or subsoil waters. The infiltration of surface or subsurface waters shall not exceed 200 gallons per inch of diameter per mile per day. See Wis. Adm. Code section H 62.23 (2) (h).

(b) *Design and construction.* 1. Main sewer size and gradient. The main sewers shall be sized and graded in accordance with table 30. Main sewers 8 inches or larger shall be designed and constructed to give mean velocity, when flowing full, of not less than 2.0 feet per second, based on Kutter's formula using an "n" value of 0.013. Use of other practical "n" values may be permitted by the department, if deemed justifiable on the basis of research or field data presented.

Next page is numbered 274c