Chapter H 62

DESIGN, CONSTRUCTION, INSTALLATION, SUPERVISION AND INSPECTION OF PLUMBING

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 unforseen 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.

(20) Sewage or other wastes shall not discharge into water surface or sub-surface soil unless it has first been subjected to some acceptable form of treatment.

History: 1-2-56; r. and recr. Register, October, 1970, No. 178, eff. 11-1-70; r. and recr. (7), Register, November, 1972, No. 203, eff. 12-1-72.

H 62.02 Plumbing definitions. For the purpose of this code, the following terms shall have the meaning indicated in this section. No attempt is made to define ordinary words which are used in accordance with their established dictionary meaning except where it is necessary to define their meaning as used in this code to avoid misunderstanding.

Note: For definitions of master plumber, journeyman, restricted plumbers, apprentices and registered learners refer to Ch. 145.

(1) PLUMBING in this code shall be defined as set forth in s. 145.01 (1) (a), (b), (c), (d) and (e), Stats.

(2) AIR-BREAK (DRAINAGE SYSTEM). A piping arrangement in which a drain from a fixture, appliance, appurtenance or device discharges indirectly into another fixture, receptacle, or interceptor at a point below the flood level rim.

(3) AIR-GAP (DRAINAGE SYSTEM). The unobstructed vertical distance through free atmosphere between the terminus of the waste pipe and the flood level rim of the fixture, sight waste or other receptacle into which it discharges.

(4) AIR-GAP (WATER SUPPLY SYSTEM). The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, vat, plumbing fixture or other device and the flood level rim of the receptacle.

(5) ALIGNMENT. Installed in a straight line, either horizontal, vertical or at a given angle.

(6) APPLIANCES AND APPURTENANCES. Includes any item or type of equipment not otherwise specifically defined, which is connected directly or indirectly with any portion of the plumbing system.

(7) APPROVED. Approved or accepted by the state department of health and social services, division of health.

Note: See H 62.02 (40) for definition of department.

(8) AREA DRAIN. A receptacle designed to collect surface or storm waters from an open area.

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

(10) AUTOPSY TABLE. A fixture or table used for post-mortem examination.

(11) BACKFLOW. The reversal of flow liquids in a piping system.

(12) BACKFLOW PREVENTER (REDUCED PRESSURE ZONE TYPE). An assembly of differential valves and check valves including an automatically opened spillage port to the atmosphere.

(13) BACK-SIPHONAGE. The formation of a negative pressure or vacuum which may occur in a water supply pipe causing the backflow of contaminated or polluted liquids to intermix with the potable water.

(14) BACKWATER VALVE. A device designed to prevent the reverse flow of storm water or sewage into the drainage system or branches thereof.

(15) BASEMENT. The lowest floor line elevation below grade which can be drained to the building sewer by gravity. All other stories below such elevation shall be considered sub-basement levels.

(16) BATTERY OF FIXTURES. Any group of 2 or more similar use adjacent fixtures installed so to discharge into the same common horizontal soil or waste pipe.

(17) BEDPAN STEAMER. A fixture used for scalding bedpans or urinals by direct application of steam.

(18) BEDPAN WASHER. A fixture designed to wash bedpans and to flush the contents into the soil drainage system. It may also provide for sterilizing.

(19) BEDPAN WASHER (HOSE). A device supplied with hot and cold water and located adjacent to a receptacle for cleansing bedpans.

(20) BELL (OR HUB). That portion of a pipe which for a short distance is sufficiently enlarged to receive the end of another pipe of the same diameter for the purpose of making a joint.

(21) BOILER BLOW-OFF BASIN. A vessel designed to receive the discharge from a boiler blow-off outlet and to cool the discharge to a temperature which permits its safe entry into the drainage system.

(22) BRANCH. Any part of a piping system other than a main or stack.

(23) BUILDING. A structure having walls and a roof erected or set upon an individual foundation or slab-constructed base designed or used for the housing, shelter, enclosure or support of persons, animals or property of any kind. For purposes of this code, each structure abutting another structure which does not have an approved ingress-egress doorway through the basement foundation walls, or structures with separate exterior or exterior abutting walls, or public use structures separated by an unpierced firewall, shall be considered as a separate or individual building.

(24) BUILDING (PRIVATE RESIDENCE). A one family building or dwelling. See dwelling unit.

(25) BUILDING (PUBLIC). Means and includes 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 or resort, assemblage, lodging, trade, traffic, occupancy or use by the public, or by 3 or more tenants.

(26) BUILDING DRAIN. See sewers and drains.

(27) BURR. Roughness or metal protruding from the walls of a pipe usually as the result of cutting the pipe.

(28) BY-PASS. An installation of control valves and piping so installed as to temporarily isolate or by-pass a specific fixture, applicance, equipment or area of piping.

(29) CATCH BASIN. See interceptor.

(31) CISTERN. A covered tank in which rainwater from roof drains is stored for household use or other purposes.

(32) CLEANOUT. A metallic plug or cover joined by means of a screw thread to an opening in a pipe, which can be removed for the purpose of cleaning or examining the interior of the pipe.

(33) CLEAR WATER WASTES. Cooling water and condensate drainage from refrigeration compressors and air-conditioning equipment, waste water drainage used for equipment chilling purposes, liquids having no impurities or where impurities have been reduced below a minimum concentration considered harmful and cooled condensate from steam heating systems or other equipment.

(34) CODE. These regulations, subsequent amendments thereto, or any emergency rule or regulation adopted governing the installation of plumbing, drainage and water supply or distribution system on private property.

(35) COMBINATION FIXTURE. A fixture combining one sink and laundry tray or a 2 or 3 compartment laundry tray in one unit.

(36) CONDUCTORS. The system of roof leaders, downspouts and pertinent piping located inside or outside of building, conveying storm or rainwater from the roofs of buildings or area to the storm drain, storm sewer, catch basin, rainwater cistern or ground surface.

(37) CONTINUOUS WASTE. A drain from 2 compartments of a single fixture connected to a single trap.

(38) CROSS-CONNECTION. Any physical connection or arrangement between two otherwise separate piping system, one of which contains potable water and the other either water of unknown or questionable safety, or steam, gas or chemical, whereby there may be a flow from one system to the other, the direction of flow depending on the pressure differential between the two systems. See backflow and back-siphonage.

(39) DEAD END. That part of a drainage system which terminates upstream from the base of a vertical soil or waste stack or which is without a free ciculation of air.

(40) DEPARTMENT. Department means the department of industry, labor and human relations.

(41) DEVELOPED LENGTH. The length of a pipe line measured along the center line of the pipe and fittings.

(42) DIP TUBE. A pipe which conveys the cold water supply to the lower portion of an automatic water heater or water storage tank when the inlet opening is in the top portion of the tank.

(43) DOMESTIC WASTES. The water-carried wastes derived from ordinary living processes. See sewage.

(44) DRAINAGE SYSTEM. A drainage system includes the piping within public or private premises, which conveys sewage, rainwater or other liquid wastes to a legal point of disposal, but does not include the mains of a public sewerage system or private or public sewage treatment plant.

(45) DURHAM SYSTEM. A term used to describe soil or waste systems where all piping is threaded pipe, tubing or other such rigid construction, using recessed drainage fittings, to correspond to the types of piping.

(46) DWELLING UNIT. One or more rooms with provisions for living, sanitary and sleeping facilities arranged for the use of one or more individuals of the same family.

(47) EJECTORS. A device operated either electrically or by a mechanical means so constructed as to elevate liquid wastes and sewage from a lower level to a point of discharge into a public or private sewer or other final means of disposal.

(48) FERRULE. A metallic sleeve used to connect dissimilar plumbing materials.

(49) FIRE PROTECTION SYSTEM. A system of pipes and appurtenances used exclusively to supply water for extinguishing fires except the water service pipe as stipulated in s. 145.01 (1) (c), Stats.

(50) FIXTURE. A receptacle, appliance, device or equipment with or without a connection to the water supply system intended to receive or discharge water, liquids or water-carried wastes directly or indirectly into a drainage system.

(51) FIXTURE UNIT. A design factor so chosen that the load producing values can be expressed as multiples of that factor.

(52) FIXTURE UNIT (DRAINAGE D.F.U.) A measure of the probable discharge into the drainage system by various types of plumbing fixtures. The drainage fixture unit value for a particular fixture depends on its volume rate of discharge, on the duration of a single drainage operation and on the average time between successive operations.

(53) FIXTURE UNIT (WATER SUPPLY S.F.U.) A measure of the probable hydraulic demand on the water supply by various types of plumbing fixtures. The supply-unit value for a particular fixture depends on its volume rate of supply, the time duration of a single supply operation and the average time between successive operations.

(54) FIXTURE UNIT FLOW RATE. The total dischage flow in gallons per minute of a single fixture divided by 7.5 provides the flow rate of a particular fixture as a unit of flow. Fixtures are rated as multiples of this unit of flow.

(55) FLOOD-LEVEL RIM. The flood-level rim is the top edge of the receptacle from which water overflows.

(56) GARAGE (PUBLIC). A building or part of a building which accommodates or houses self-propelled land, air or water vehicles for 3 or more persons not of the same family.

(57) GARAGE (PRIVATE). A building used for the storage of vehicles or other purposes by a private family and which is not available for public use.

(58) GRADIENT. The fall or slope of a line of pipe in reference to a horizontal plane. In drainage systems it is usually expressed as the fall in a fraction of an inch per foot length of pipe.

(59) HORIZONTAL PIPE. Any pipe or fitting which makes an angle of less than 45° to the horizontal.

(60) HOT WATER. Water at a temperature of 120° F. or more.

(61) INDIRECT WASTE PIPE. A waste pipe which does not connect directly to the drainage system, but conveys liquid wastes by discharging into the drainage system through an air-break, air-gap, into a trap, fixture, receptacle or interceptor.

(62) INDUSTRIAL WASTES. The liquid wastes resulting from the processes employed in industrial establishments which are free from fecal matter.

(63) INTERCEPTOR. A device designed and installed so as to retain deleterious, hazardous or undesirable matter from normal wastes while permitting normal sewage or liquid wastes to discharge into the drainage system by gravity.

(64) GREASE BASIN (EXTERIOR). A watertight tank installed underground for the collection and retention of grease from cooking or food processing and which is accessible for periodic removal of the contents.

(65) GREASE INTERCEPTOR. A receptacle designed to intercept and retain grease or fatty substances contained in kitchen and other food wastes.

(66) GRIT & SAND INTERCEPTOR. A receptacle designed to intercept and retain sand, grit, earth and other similar solids.

(67) OIL INTERCEPTOR. A unit designed to intercept and retain oil, lubricating grease or other like materials.

(68) MANHOLE. An opening constructed to a sewer or any portion of a plumbing system of sufficient size to permit a man to gain access thereto.

(69) MAY. May implies neither compulsion nor recommendations, only permission.

(70) MOBILE HOME. A mobile home is a transportable structure mounted on a chassis and designed to be used with or without a permanent foundation as a dwelling unit. The phrase "without a permanent foundation" indicates that the support system is constructed with the intent that the mobile home thereon will be moved from time to time at the convenience of the owner. See ss. 218.12 and 348.07 (2), Stats.

(a) *Mobile home park sewerage system.* All structures and piping by which sewage is collected, conveyed and disposed of.

(b) *Mobile home building sewer.* That part of the plumbing system designed to serve one mobile home site from the mobile home drain connector to its connection with the mobile home park main or private disposal system.

(c) *Mobile home drain connector.* The terminal of all soil or waste piping of a mobile home to which the final waste connection is made to the building sewer.

(d) *Mobile home park water main.* That part of the water distribution system which extends from the street main or private supply to the mobile home water service.

(e) *Mobile home water service.* That part of the water service piping extended from the park water main, or private system, to one mobile home site.

(71) NON-POTABLE WATER. Water not safe for human consumption, hygiene or culinary use.

(72) NUISANCE. A "nuisance" under this section is referred to as any source of filth or probable cause of sickness pursuant to the provisions of s. 146.14 Stats.

(73) PIPE DIAMETERS. When used in this code, shall mean the inside cross sectional dimension.

(74) PLACE OF EMPLOYMENT. Every place, whether indoors or out, or underground, and the premises appurtenant thereto, where either temporary 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 gain or profit, but shall not include any place where persons are employed in private or domestic service or agricultural pursuits which do not involve the use of mechanical power.

(75) PLUMBING SYSTEM. The plumbing system includes all water supply, water services and water distribution piping, plumbing fixtures and traps; soil, waste, and vent pipes; building drains, building sewers and private domestic sewage disposal systems including their respective connections, equipment, devices, appliances and appurtenances within the property line of the premises; and water-treating or water-using equipment in connection with the water and drainage systems and the installation thereof.

(76) POTABLE WATER. Potable water is water which is satisfactory for human consumption, hygiene and culinary use and meets the requirements of the state administrative authority having jurisdiction.

(76a) PRIVATE SEWAGE SYSTEM. Private sewage system means a system defined in s. H 63.02 (40).

(77) PRIVY. A structure used by the public for the deposition of human body wastes.

(78) PRIVY VAULT. A watertight pit receptacle beneath a privy which receives human body wastes.

(79) PROCESS PIPING. Process piping is piping separated from the water distribution and/or drainage system by approved methods or means and used exclusively for refining, manufacturing, industrial or shipping purposes of every character and description.

(80) RADIUS. Radius is the distance from a center line or point to an axis of rotation.

(81) RECEPTOR. A fixture or device which receives the discharge from indirect wastes pipes.

(82) REPAIRS & STOPPAGES. Consists of making minor repairs to faucets, valves, pipes, appliances and removing of stoppages in building drains and sewers or waste pipes.

(83) ROUGHING-IN. The installation of all soil, waste, vent, water supply piping and supports pertinent thereto within a building to which fixtures, appliances and equipment are to be connected.

(84) SAFING. A pan or other collector placed beneath a pipe or fixture to prevent leakage from escaping to the floor, ceiling or walls.

(85) SANITARY SEWER. A sanitary sewer is a pipe which carries sewage and excludes storm, surface and ground waters.

(86) SEWAGE. The water carried wastes (organic) created in and to be conducted away from residences, industrial establishments and public buildings. See domestic wastes.

(87) SEWERAGE SYSTEM (PUBLIC). All structures, conduits and pipe lines by which sewage is collected and disposed of, except plumbing inside and in connection with buildings and properties served, and service pipes from building to street main. See ch. 144, Stats.

(88) RESERVOIR. Reservoir means a watertight receptacle basin or vault constructed above the ground surface or underground for the storage of potable water.

(89) SEWERS & DRAINS. (a) *Sanitary.* 1. Building sewer. That part of the plumbing system beginning at the immediate outside foundation or proposed foundation wall to its connection with the main of a public sewer, private sewer, private sewage disposal system or other point of disposal.

2. Building drain. The lowest horizontal piping of a drainage system which receives the discharge of soil, waste and other drainage pipes inside any building and conveys same to the building sewer by gravity flow. See Wis. Adm. Code section H 62.08 (2) (c), sketch.

3. Building drain branch. That part of any drainage system which extends laterally at a slight grade, with or without horizontal change of direction from the building drain or subdrain. In this definition, horizontally means an angle less than 45 degrees with a horizontal plane and a rise not to exceed the inside diameter of the branch. See Wis. Adm. Code section H 62.08 (2) (c), sketch.

4. Building subdrain. The horizontal portion of a drainage system within a building which cannot flow by gravity to the building drain.

(b) *Storm.* 1. Building sewer. That part of the storm water system which receives the discharge from building storm drains and subdrains, parking lots, yard fountains and other permissive sources, and conveys such waters to a public storm water system, private storm water system or other approved point of disposal.

2. Building drain. The lowest horizontal piping which receives storm waters or other permissive water from roofs, area ways, court yards, canopies, enclosed parking ramps and other sources inside any building or structure and conveys same to the building storm sewer by gravity flow.

3. Building subdrain. Same as sanitary subdrain.

(90) SEWER. (a) *Private.* A privately owned building sewer serving a single building.

(b) *Private interceptor main sewer.* A privately owned building sewer not directly controlled by public authority. Privately owned means single ownership by an individual, firm or corporation, and approved by local authority and the department.

(91) SEWER (PUBLIC). A publicly owned sewer.

(92) SUBSOIL DRAIN. That part of a drainage system which conveys the gound or seepage water from the footings of walls or below the basement floor under buildings to the storm sewer or other point of disposal.

(93) SHALL. The word "shall" when used in this code is a mandatory requirement.

(94) SHOULD. "Should" is not mandatory but expresses the recommendation of the department.

(95) SIPHONAGE. A suction created by the flow of liquids in pipes.

(96) SLIP-JOINT. A connection in which one pipe slips into another, the joint of which is made tight with a compression type fitting.

(97) SPECIAL WASTES. Wastes which require special treatment before entry into the normal plumbing system.

(98) SPECIAL WASTE PIPE. Piping which conveys special wastes.

(99) SPIGOT. The end of a pipe which fits into a bell or hub.

(100) STACKS & BRANCHES. (a) *Stacks.* 1. Soil stack. Any pipe extending vertically which conveys the discharge of water closets, bedpan washers or like fixtures with or without other fixtures to a horizontal branch, building drain or building subdrain.

2. Waste stack. Any pipe extending vertically which receives only liquid wastes free from fecal matter and conveys same to a horizontal branch, the building drain or building subdrain.

(b) *Branches.* 1. Branch. A horizontal drain pipe extending from a soil or waste stack to which vertical sections or extensions may be connected which receive the discharge from one or more fixture drains.

2. Branch interval. A distance along a soil or waste stack corresponding in general to a story height but in no case less than 8 feet within which the horizontal branches from one story of a building are connected to the stack.

(101) STERILIZERS. (a) *Boiling type.* A non-pressure type device used for boiling instruments, utensils, and/or other equipment for disinfection purposes.

(b) *Pressure instrument washer-sterilizer.* A pressure vessel fixture designed to both wash and sterilize instruments during the operating cycle of the unit.

(c) *Pressure (autoclave).* A pressure vessel designed to use steam under pressure for sterilizing. Also called an autoclave.

(d) *Water.* A device used for sterilizing water and storing sterile water.

(102) STILL. A device used in distilling liquids.

(103) SUMP. A tank or pit which receives sewage or liquid wastes located below the normal grade of the gravity system and which must be emptied by mechanical means.

(104) SUMP PUMP. A mechanical device other than an ejector for removing liquid waste from a sump.

(105) SUPPORTS. Supports, hangers, anchors and other devices for supporting and securing pipes, or fixtures to walls, ceilings, floors or stuctural members of a building.

(106) SWIMMING POOL. Any structure, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing having a depth of 2 feet or more at any point.

(107) TERMINAL. That part of a drainage or vent piping system which projects above the roof of the building or at the end of the building effluent disposal system.

(108) TRAP. A fitting or device so designed and constructed as to provide, when properly vented, a liquid seal which will prevent the back passage of sewer air without materially affecting the flow of sewage or waste through it.

(a) *Trap crown.* Where the trap connects to or becomes a part of the horizontal arm of the trap which is integral with the trap.

(b) *Trap seal.* Trap seal is indicated by the height of the water column measured between the overflow and the dip separating the inlet and outlet arms of the trap.

(109) TURF SPRINKLER UNIT. A system of piping, appurtenances and devices so installed as to distribute water for lawn or other similar irrigation purposes without plumbing fixtures or means of use for human consumption.

(110) VACUUM BREAKER. An atmospheric device, pipe installed and designed to protect a water supply against back-siphonage by entry of air to relieve vacuums in the water distribution system. (A vacuum

breaker is not designed to protect the water supply under conditions of backflow or back-pressures.)

(111) VENT PIPE. Any pipe provided to ventilate a plumbing system.

(a) *Back vent.* A pipe that connects to a soil or waste pipe to vent a single fixture trap and connects to the vent system above the fixture served with no part of it below the fixture trap.

(b) *Branch vent.* That part of the vent piping which extends horizontally with or without lateral or vertical extensions and to which other vent pipes connect.

(c) *Circuit vent.* A vent pipe which serves 2 or more fixture traps which discharge to a nearly horizontal soil or waste branch and extends from the downstream side of the furthermost upstream fixture trap to the main soil or waste vent or main vent so that a circuit is formed.

(d) *Continuous vent.* A vertical vent pipe that is a continuation of the vertical waste pipe to which it connects.

(e) *Loop vent.* Similar to a back vent except that part of it extends below the trap it serves before reconnecting to the vent piping system.

(f) *Main soil or waste vent.* That part of the stack above the highest installed fixture opening or branch connection. (Commonly referred to as a stack vent.)

(g) *Main vent.* A vent pipe connected to the base of a soil or waste stack below the lowest fixture branch extending vertically with or without change of direction and which serves as a terminal for other vent pipe connections and terminates through the roof or connects with the main soil or waste pipe at a point 2 feet or more above the highest soil or waste opening, but in no case less than 38 inches above the highest floor on which soil or waste openings are installed.

(h) *Relief vent.* The vent pipe connected to a soil or waste pipe close to the stack in a manner to equalize minus and plus pressures in the stack.

(i) *Stack venting.* A method of venting a fixture or group of fixtures through the soil or waste stack.

(j) *Sterilizer vent.* A separate pipe or stack connected indirectly to the building drainage system at the lowest terminal, which receives the vapors from non-pressure sterilizers or the exhaust vapors from pressure sterilizers and conducts the vapors directly to the outer air. (Commonly referred to as vapor, steam, atmospheric or exhaust vent.)

(k) *Unit vent.* One which denotes an installation so arranged that one pipe will serve traps from 2 identical fixtures at the same point when connected to a vertical soil or waste pipe.

(l) *Wet vent.* That portion of a vent pipe which receives the discharge from wastes other than water closets, kitchen fixtures or other sources containing like sewage of fecal matter.

(m) *Yoke vent.* A pipe connecting upward from a soil or waste stack into a main vent pipe in a manner to equalize pressures within the stacks.

(112) WATER HEATERS AND RELATED ITEMS. (a) *Water heater.* A closed vessel in which water is heated by the combustion of fuels, electricity or any other source and withdrawn for use external to the system at pressures not exceeding 160 p.s.i.g. and shall include the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210° F.

(b) *Hot water storage tank.* A hot water storage tank is 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.

(c) *Hot water supply boiler.* A boiler completely filled with water that furnishes hot water to be used externally to itself at pressures not exceeding 160 p.s.i.g. or at temperatures not exceeding 250° F.

(113) WATER CONDITIONER. An appliance, appurtenance or device used for the purpose of ion exchange, demineralizing water or other methods of water treatment.

(114) WATER SUPPLY (PRIVATE). Private water supply means one or more sources of groundwater, including facilities for conveyance thereof, such as wells, springs and pumps, on one property, other than those serving a municipality or a group of 10 or more premises of mixed ownership.

(115) WATER SERVICE. A pipe extended from the water main or private pumping system or other supply source with or without lateral extensions to the building, structure or other system to be served.

(116) WATER DISTRIBUTION SYSTEM. (a) Piping which conveys water from the service to the plumbing fixtures, appliances, appurtenances, equipment, devices or other systems served including fittings and control valves.

1. Water distribution main. The principal water distribution pipe to which risers, branch mains or branches are connected.

2. Water distribution riser. A water distribution pipe which extends vertically one full story or more to convey water to mains, branch mains, branches or a group (s) of fixtures.

3. Water distribution branch main. A water distribution pipe to convey water to a riser, a pipe serving 2 or more branches with or without other branch mains.

4. Water distribution branch. Any part of the water distribution piping system other than a main, riser or branch main to within 18 inches or less of one or more fixtures.

5. Fixture supply connections. That part of the piping system within 18 inches or less from the fixture supply branch to the fixture.

(117) WIPED JOINT. The fusion of metal with solder, smoothly finished with a wiping cloth and having a thickness of at least ¼-inch at the point where the pipes are joined.

(118) WORKMANSHIP. Work of such character that will fully secure the results sought in all the sections of this code as intended for the safety, welfare and health protection of all individuals.

(119) YARD DRAIN. The horizontal piping and its branches which convey the surface drainage from areas, courts or yards outside the walls of a building to the storm water sewer.

(120) MISCELLANEOUS. Standards or Specifications Abbreviations.

A.G.A. ---------- American Gas Association, Inc.
420 Lexington Ave., New York, New York 10017

A.N.S.I. --------- American National Standards Institute, Inc.
1430 Broadway, New York, New York 10018

A.S.M.E. -------- American Society of Mechanical Engineers
29 W. 39th St., New York, New York 10018

A.S.S.E. --------- American Society of Sanitary Engineering
960 Illuminating Building, Cleveland, Ohio 44113

A.S.T.M. -------- American Society for Testing and Material
1916 Race St., Philadelphia, Pa. 19103

A.W.W.A. ------- American Water Works Association
2 Park Avenue, New York, New York 10016

C.S. ---------- Commercial Standards, Supt. of Documents
Governmental Printing Office, Washington, D.C.
20401

F.S. ---------- Federal Specifications
General Services Administration, Regional Office 3,
Washington, D.C. 20407

M.S.S. ---------- Manufacturers Standardization Society
of the Value and Fittings Industry
420 Lexington Ave., New York, New York 10017

N.S.F. ---------- National Sanitation Foundation
Testing Laboratory, Inc., P.O. Box 1468,
Ann Arbor, Michigan 48106

U.L. ---------- Underwriters' Laboratories, Inc.
207 E. Ohio Street, Chicago, Illinois 60611

W.C.F. ---------- Water Conditioning Foundation
1201 Waukegan Road, Glenview, Illinois 60025

History: 1-2-56; am. (8), (42) (b) and (c); (46) and (49), Register, February, 1957, No. 14, eff. 3-1-57; r. and recr. Register, October, 1970, No. 178, eff. 11-1-70; cr. (119), Register, October, 1971, No. 190, eff. 11-1-71; r. and recr. (70); (79) through (118) are renum. to be (80) through (119); (119) is renum. to be (79); am. (89) (a) 2. and 3. as renum., r. and recr. (90) as renum. Register, November, 1972, No. 203, eff. 12-1-72; r. and recr. (88) (a) 4, Register, July, 1976, No. 247, eff. 8-1-76; renum. (88) (a) 11. to 18. to be 12. to 19., cr. 11. and 20., renum. (113) to (119) to be (114) to (120), recr. (116), renum. (112) to be (113) and am., cr. (112), Register, January, 1979, No. 277, eff. 2-1-79; r. (30), am. (40), cr. (76a), r. and recr. (88), Register, December, 1980, No. 300, eff. 1-1-81.

Table 34

Inside diameter, inches	Weight lbs. per foot	Wall thickness inches
⅜	2	----------
½	2	----------
⅝	3	----------
¾	3½	.231
1	4¾	.246
1¼	7¾	.320
1½	11¼	.386
2	19½	.504

Sheet lead for safing pans shall weigh not less than 4 pounds per square foot. Sheet lead for flashings and roof terminals shall weigh not less than 3 pounds per square foot.

9. Solder bushings shall be red brass with minimum weights as follows:

Pipe size inches	*Miminum weight each*
1¼	6 oz.
1½	8 oz.
2	14 oz.
2½	1 lb. 6 oz.
3	2 lb. 0 oz.
4	3 lb. 8 oz.

10. Sheet copper for the following uses: a. General use including safe pans—minimum 12 ounces per square foot.

b. Flashings for vent terminals—minimum 8 ounces per square foot.

11. Galvanized sheet iron or steel for vent terminal flashings shall not be lighter than number 28 Brown and Sharpe gauge.

Note: Copies of standards promulgated by the following technical societies, referred to above are on file in the offices of secretary of state, health and social services and revisor of statutes and may be obtained for personal use from the following addresses:

American National Standards Institute, Inc.
1430 Broadway, New York, New York 10018

American Society for Testing and Material
1916 Race St., Philadelphia, Pa. 19103

American Water Works Association
2 Park Avenue, New York, New York 10016

Cast Iron Soil Pipe Institute
2029 K Street, NW
Washington, D. C. 20006

National Sanitation Foundation
Testing Laboratory, Inc.
P.O. Box 1468
Ann Arbor, Michigan 48106

American Society of Sanitary Engineering
960 Illuminating Building
Cleveland, Ohio 44113

History: 1-2-56; r. and recr. Register, November, 1972, No. 203, eff. 12-1-72; cr. (2) (a) 16, 17 and 18, Register, July, 1976, No. 247, eff. 8-1-76, am. (2) (a) 17, Register, July, 1977, No. 259, eff. 8-1-77.

H 62.20 Private domestic sewage treatment and disposal systems. History: 1-2-56; am. (1) (f), Register, June, 1956, No. 6, eff. 7-1-56; am. (2) (a), (2) (b), (2) (c) 2, Register, February, 1957, No. 14, eff. 3-1-57; am. (1) (b), (d) and (e), Register, April, 1962, No. 76, eff.

10-1-62; r. and recr. Register, November, 1969, No. 167, eff. 12-1-69; am. (5) (d) 2. e., Register, October, 1971, No. 190, eff. 11-1-71; r. and recr. (2) (b), Register, November, 1972, No. 203, eff. 12-1-72; r. and recr. Register, July, 1976, No. 247, eff. 8-1-76; am. (2) (e) 7, cr. (3) (f) and (11), Register, January, 1979, No. 277, eff. 2-1-79; r. Register, December, 1980, No. 300, eff. 1-1-81.

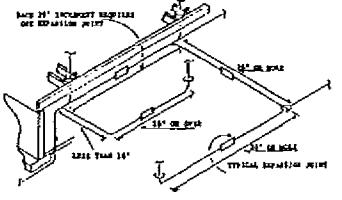
Note: Chapter H 63 contains rules on private sewage systems.

H 62.21 Hangers and supports. (1) GENERAL. All piping in a plumbing system shall be installed without undue strains and stresses and provisions shall be made for expansion, contraction and structural settlement and backgrounds where necessary.

(2) PIPE SUPPORTS. (a) *Stacks.* All pipes shall be supported so that alignment is retained and the weight of the pipes shall not bear upon a caulked joint, except where the spigot end of one vertical pipe rests in the hub end of the next lower vertical pipe. All vertical stacks extending 3 floors or more in height shall be supported on concrete or masonry piers. All vertical piping shall be provided with an approved support at each floor or approximately every 10 feet.

(b) *Pipe supports—water distribution.* All piping shall be supported to prevent undue strains upon connections or fixtures and shall be so aligned and graded that the entire system or parts thereof can be controlled and drained. The formation of traps and/or sags in water piping shall be avoided where possible. When unavoidable, such sags, traps or inverts shall have provisions for properly draining same.

(3) HANGERS. (a) All horizontal piping above the floor shall be supported or anchored by approved wall brackets, copper, iron or steel hangers, concrete or masonry piers set at intervals not to exceed 10 feet. Cast iron pipe shall be supported at the joint and intervals not to exceed 5 feet. Copper tubing shall be supported at approximately 6 feet for piping 1¼ inches inside diameter and less, and at intervals not to exceed 10 feet for piping 1½ inches inside diameter and larger. Lead pipe shall be supported in its entirety. Bracket, hanger and support materials in contact with the pipe or tubing shall be compatible. Plastic DWV piping shall be supported at intervals of not more than 4 feet, at the end of branches and change of direction or elevation. Supports shall allow free movement. Vertical piping shall be maintained in a straight alignment. Support trap arms in excess of 3 feet in length as close as possible to the trap. Closet rings shall be securely fastened with corrosive resistant fasteners to the floor. Closet bends or stubs shall be stabilized against all horizontal or vertical movement. Pipe exposed to damage by sharp surfaces shall be protected with grommets or sleeves of rubber or plastic. Hangers and straps shall not compress, distort, cut or abrade the piping and shall allow free movement of pipe. All horizontal piping exceeding 20 feet in length shall have an approved ABS or PVC expansion joint installed. See following sketch.



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