

PLUMBING

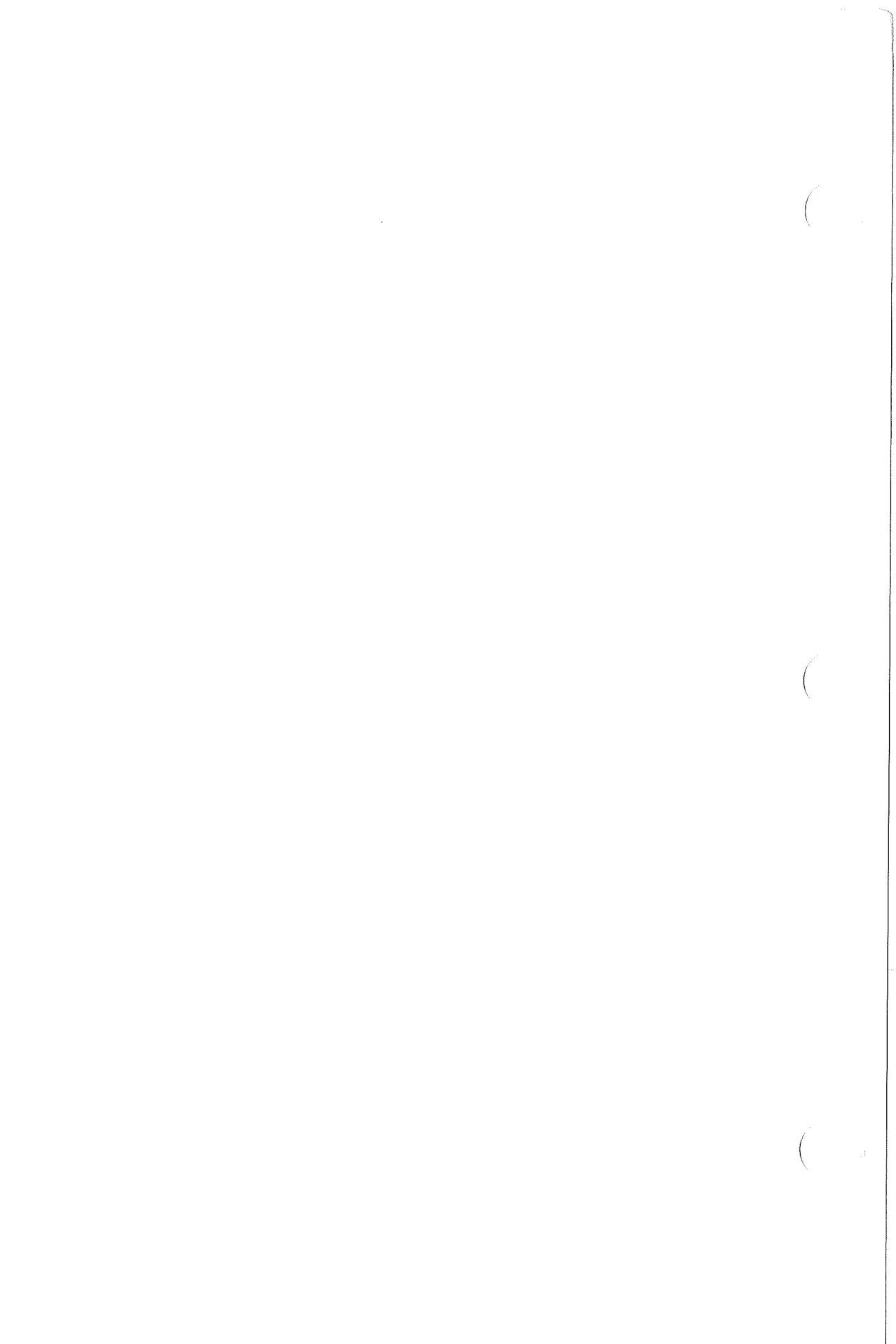
Title 5

PLUMBING

Chapters:

- 5.01 Administration**
- 5.02 Materials and Alternates**
- 5.03 General Regulations**
- 5.04 Drainage Systems**
- 5.05 Vents and Venting**
- 5.06 Indirect and Special Wastes**
- 5.07 Traps and Interceptors**
- 5.08 Joints and Connections**
- 5.09 Plumbing Fixtures**
- 5.10 Water Distribution**
- 5.11 Rainwater Leaders**
- 5.12 Miscellaneous**

(See detailed Subject Index in back of Code)



Chapter 5.01
ADMINISTRATION

Sections:

- 5.01.010 Application.
- 5.01.020 Definitions.
- 5.01.030 A.
- 5.01.040 B.
- 5.01.050 C.
- 5.01.060 D.
- 5.01.070 E.
- 5.01.080 F.
- 5.01.090 G.
- 5.01.100 H.
- 5.01.110 I.
- 5.01.120 J.
- 5.01.140 L.
- 5.01.150 M.
- 5.01.170 O.
- 5.01.180 P.
- 5.01.200 R.
- 5.01.210 S.
- 5.01.220 T.
- 5.01.240 V.
- 5.01.250 W.
- 5.01.270 Y.
- 5.01.290 Enforcement.
- 5.01.300 Retroactivity.
- 5.01.310 Unlawful or insanitary systems.
- 5.01.320 Plumbing advisory board.
- 5.01.330 Permit required.
- 5.01.340 Owner's permit.
- 5.01.350 Existing permits.
- 5.01.360 Contractors license.
- 5.01.370 Journeyman licenses.
- 5.01.375 Validated journeyman licenses.
- 5.01.380 Examination.
- 5.01.385 Probationer's permit.
- 5.01.390 License fees.
- 5.01.395 Reciprocal licensing.
- 5.01.400 Revocation of licenses.
- 5.01.410 Existing licenses.
- 5.01.420 Unlawful advertising.

5.01.010 Application. This title shall be known as the Plumbing Code

5.01.020—5.01.050 PLUMBING

and may be so cited. It applies to plumbing and plumbing systems, including lawn sprinkler systems. (Ord. 92190; July 9, 1963).

5.01.020 Definitions. Certain words and terms used in this title, unless clearly inconsistent with their context, shall have the meanings set forth in this chapter. (Ord. 92190; July 9, 1963).

5.01.030 A. ACCESSIBLE. Having access thereto, but which first may require the removal of an access panel, cover or similar obstruction.

ACCESSIBLE, READILY. Having direct access thereto, without the necessity of removing any access panel, cover or similar obstruction.

AIR GAP. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other receptacle and the flood-level rim of such receptacle.

APPRENTICE. Anyone undergoing approved training for the purpose of becoming a licensed journeyman as provided for in this title, and registered as such apprentice with the Director of Public Health.

APPROVED. Accepted or acceptable under an applicable specification stated or cited in this title, or accepted by the Director of Public Health as suitable for the intended purpose. (Ord. 92190; July 9, 1963).

5.01.040 B. BACKFLOW. The flow of water or other liquids, mixtures or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source.

BACK-SIPHONAGE. The flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel into a potable water supply pipe due to a negative pressure in such pipe.

BRANCH. Any part of a piping system other than a main, riser, or stack.

BUILDING. Any structure for the shelter, enclosure or support of persons, animals, or property of any kind.

BUILDING DRAIN. That part of the lowest piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of a building and conveys it to a point thirty (30) inches outside the outer foundation walls of such building, or if there be no such walls, thirty (30) inches beyond the outer line of any footings, pilings or other building support.

BUILDING SUPPLY. The pipe carrying potable water from the water meter or other source of water supply to the building or premises served. (Ord. 92190; July 9, 1963).

5.01.050 C. CLOSED SYSTEM. A water piping system where a pressure regulating device, check valve or a backflow preventer is installed between the street main or other source of supply and a water heater,

or between such source of supply and a water heater connected to a storage tank and having water shutoff valves between said heater and tank. Water shutoff valves installed at the water meter, building supply or cold water inlet to a water heater do not make a closed system.

COMBINATION WASTE AND VENT. A wet vented installation of waste piping in which the trap for one or more fixtures connected thereto is not separately and independently vented.

CONTINUOUS VENT. A vertical vent that is a continuation of the drain to which it connects.

CONTINUOUS WASTE. A drain connecting more than one compartment of a fixture, or more than one fixture, to a common trap.

CRITICAL LEVEL. The minimum elevation above the flood-level rim of a fixture or receptacle at which a backflow prevention device serving such fixture or receptacle is intended to be installed. If the critical level is not marked at an approved point on any vacuum breaker or other backflow prevention device, then the bottom of such device shall constitute the critical level.

CROSS CONNECTION. Any connection or arrangement, physical or otherwise, between a potable water supply system and any plumbing fixture or any tank, receptacle, equipment or device, through which it may be possible for non-potable, used, unclean, polluted or contaminated water or other foreign substance to enter any part of such potable water system under any condition. (Ord. 92190; July 9, 1963).

5.01.060 D. DEVELOPED LENGTH. The length of any piping measured along the center line of the pipe and connecting fittings.

DIRECTOR OF PUBLIC HEALTH. Shall mean the Director of Public Health of the City of Seattle or his authorized representative.

DOMESTIC HOT WATER TANK. A tank with a self contained heating unit which stores potable hot water for residential or commercial use.

DOMESTIC SEWAGE. The water-borne wastes derived from the ordinary living processes and of such character as to permit satisfactory disposal, without special treatment, into a public sewer or by means of a private sewage disposal system.

DRAIN. Any pipe which carries waste or water-borne wastes in a building drainage system.

DRAINAGE SYSTEM. All the piping within a building which conveys sewage or other liquid wastes to a building drain, together with such building drain. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.01.070 E. EFFECTIVE OPENING. The minimum cross-sectional area at a point of water supply discharge, expressed in terms of the diameter of a circle. (Ord. 92190; July 9, 1963).

5.01.080 F. FIXTURE DRAIN. The drain from the trap of a fixture to the junction of that drain with any other drain pipe.

FIXTURE UNIT. A quantity in terms of which the load-producing effects on a plumbing system of different kinds of plumbing fixtures are expressed on an arbitrarily chosen scale.

FLOOD-LEVEL RIM. The top edge of a receptacle, from which water will overflow.

FLUSHOMETER VALVE. A device actuated by direct water pressure and which discharges a predetermined quantity of water to fixtures for flushing purposes. (Ord. 92190; July 9, 1963).

5.01.090 G. GRADE. The slope or fall of a line of pipe in reference to a horizontal plane. (Ord. 92190; July 9, 1963).

5.01.100 H. HORIZONTAL BRANCH. A drain pipe extending laterally from a soil or waste stack or building drain with or without vertical sections or branches, which receives the discharge from one or more fixture drains and conducts it to the soil or waste stack or to the building drain.

HORIZONTAL PIPING. Piping installed in a horizontal position, or at an angle of less than forty-five degrees from the horizontal. (Ord. 92190; July 9, 1963).

5.01.110 I. INDIRECT WASTE PIPE. A pipe that does not connect directly with the drainage system but conveys liquid wastes by discharging into a plumbing fixture, interceptor or receptor which is directly connected to the drainage system.

INDIVIDUAL VENT. A pipe installed to vent a fixture trap and which connects with the vent system above the fixture served or terminates in the open air.

INSANITARY. A condition which is contrary to sanitary principles or is injurious to health, including, but not limited to the following.

(1) Any trap which does not maintain a proper trap seal.

(2) Except where lawful, any opening in a drainage system which is not provided with an approved water-sealed trap.

(3) Any plumbing fixture or other waste discharging receptacle or device, which is not supplied with water sufficient to flush it and maintain it in a clean condition.

(4) Any defective fixture, trap or pipe.

(5) Except where lawful, any trap directly connected to a drainage system the seal of which is not protected against siphonage and back pressure by a vent pipe.

(6) Any connection, cross-connection, construction or condition,

temporary or permanent, which could permit any unapproved foreign matter to enter a water distribution system used for domestic purposes.

INTERCEPTOR. A device which separates deleterious, hazardous or undesirable matter from normal wastes, and retains such matter, but allows normal wastes to discharge into a drainage system by gravity. (Ord. 92190; July 9, 1963).

5.01.120 J. JOURNEYMAN LAWN SPRINKLER MECHANIC. Any one other than a journeyman plumber who installs, removes, alters or repairs lawn sprinkler systems or parts thereof and whose competency as such has been certified by the Plumbing Examining Board and who is licensed as a journeyman lawn sprinkler mechanic as required by this title.

JOURNEYMAN PLUMBER. Anyone who installs, removes, alters, or repairs plumbing systems or parts thereof and whose competency as such has been certified by the Plumbing Examining Board and who is licensed as a journeyman plumber as required by this title. (Ord. 92190; July 9, 1963).

5.01.140 L. LAWN SPRINKLER CONTRACTOR. Anyone other than a plumbing contractor engaged in, or engaging in, the furnishing either by contract, sub-contract, day labor or otherwise, of any labor in the installation, removal, alteration or repair of any lawn sprinkler system or part thereof.

LAWN SPRINKLER SYSTEM. A plumbing system for the purpose of land irrigation.

LIQUID WASTE. The discharge from any fixture, appliance or appurtenance in a plumbing system which does not receive fecal matter. (Ord. 92190; July 9, 1963).

5.01.150 M. MAIN. The principal artery of any system of continuous piping.

MAIN VENT. The principal artery of a venting system. (Ord. 92190; July 9, 1963).

5.01.170 O. OFFSET. A combination of elbows or bends in a line of piping which brings one section of the pipe out of line but into a line parallel with the other section. (Ord. 92190; July 9, 1963).

5.01.180 P. PLUMBING. The business, trade or work having to do with the installation, removal, alteration or repair of plumbing systems or parts thereof; any part of a plumbing system.

PLUMBING CONTRACTOR. Anyone engaged in, or engaging in, the furnishing either by contract, sub-contract, day labor or otherwise, of any labor in the business of plumbing. The owner or operator of any industrial or commercial building or plant who so engages himself shall be deemed a plumbing contractor under this title.

PLUMBING FIXTURE. An approved receptacle, appliance or device which is supplied with water or which receives liquid or liquid-borne waste and discharges such waste into a drainage system. Industrial or commercial tanks, vats and similar processing equipment are not plumbing fixtures, but may discharge into approved traps or plumbing fixtures.

PLUMBING SYSTEM. Any potable water distribution piping, and any drainage piping within or below any building, including rainwater leaders and all fixtures, traps, vents and devices appurtenant to such water distribution or drainage piping, including potable water treating or using equipment and domestic hot water heaters, and including any lawn sprinkler system.

POTABLE WATER. Water which is approved for drinking, culinary and domestic purposes.

PRIVATE USE. The use of plumbing fixtures in residences and apartments, in private bathrooms in hotels and hospitals, in rest rooms in commercial establishments containing a single fixture or a group of single fixtures, and in comparable installations where the fixtures are intended for the use of a family, or similar restricted use.

PROBATIONER. One who holds a current, valid journeyman plumber's license or certificate of competency issued by a jurisdiction other than the city of Seattle and who holds a current, valid probationer's permit issued by the director of public health.

PUBLIC USE. The use of plumbing fixtures in commercial and industrial establishments, in restaurants, bars, public buildings, comfort stations, schools, gymnasiums, railroad stations or places to which the public is invited or which are frequented by the public without special permission or special invitation, or any other place where a number of fixtures are installed so that their use is similarly restricted. (Ord. 92190, as amended by Ord. 96320; December 19, 1967).

5.01.200 R. RELIEF VENT. A vent, the primary function of which is to provide circulation of air between drainage and vent systems.

RISER. A water supply pipe which extends vertically one full story or more to convey water to branches or fixtures.

ROUGHING IN. Roughing in is the placing or installation of all piping pertaining to the plumbing system prior to covering or installing of fixtures. (Ord. 92190, as amended by Ord. 95168; November 10, 1966).

5.01.210 S. SEWAGE. Any liquid waste containing animal or vegetable matter in suspension or solution, and which may include liquids containing chemicals in solution.

SLIP JOINT. A slip joint usually consists of a friction ring and rubber washer or a friction ring and candle wicking.

SOIL PIPE. Any pipe which conveys the discharge of water closets, urinals or fixtures having similar functions, with or without the discharge from other fixtures, to the building drain.

STACK. A vertical main of a system of soil, waste or vent piping extending through one or more stories.

SUMP. A tank or pit which receives sewage or liquid waste and which is located below normal grade.

SUPERINTENDENT OF WATER. The head of the Seattle water department or his duly authorized representative. (Ord. 92190 as amended by Ord. 95168 and Ord. 97361 § 1; January 2, 1969).

5.01.220 T. TRAP. A device so designed and constructed as to provide, when properly vented, a liquid seal, which seal will prevent the back passage of air without materially affecting the flow of sewage or waste water through such device.

TRAP ARM. That portion of a fixture drain between a trap and its vent.

TRAP SEAL. The maximum vertical depth of liquid that a trap will retain, measured between its crown weir and the top of the dip of the trap. (Ord. 92190; July 9, 1963).

5.01.240 V. VACUUM BREAKER. A device for the prevention of backflow.

VENT PIPE. A pipe in a vent system.

VENT STACK. A vertical vent pipe installed primarily for the purpose of providing circulation of air to and from any part of the drainage system.

VENT SYSTEM. A pipe or pipes installed to provide a flow of air to or from a drainage system or to provide a circulation of air within such system to protect trap seals from siphonage and back pressure.

VERTICAL PIPING. Piping installed in a vertical position, or at an angle of forty-five degrees (45°) or more from the horizontal. (Ord. 92190; July 9, 1963).

5.01.250 W. WASTE PIPE. A pipe which conveys only liquid waste, free of fecal matter.

WATER DISTRIBUTING PIPE. A pipe in a building which conveys potable water from the building supply pipe to the plumbing fixtures and other branch water outlets.

WATER SERVICE PIPE. See Building Supply.

WATER SUPPLY SYSTEM. The building supply pipe, the water distributing pipes and the necessary connecting pipes, fittings, control valves and all appurtenances carrying or supplying potable water in or adjacent to a building or premises.

WET VENT. A vent pipe which also serves as a drain. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.01.270—5.01.320 PLUMBING

5.01.270 Y. YOKE VENT. A pipe connecting upward from a soil or waste stack to a vent stack for the purpose of preventing pressure changes in such soil or waste stack. (Ord. 92190; July 9, 1963).

5.01.290 Enforcement. The Superintendent of Water shall enforce any provision of this title relating to the inspection or approval of water meters or building supply piping outside a building. The Director of Public Health shall enforce all other provisions of this title and may enter any building or premises at any reasonable time to perform any duty imposed on him by this title. He may adopt such rules and regulations consistent with this title as he may deem necessary to its enforcement. (Ord. 92190; July 9, 1963).

5.01.300 Retroactivity. This title shall apply to the installation of new plumbing in any existing building, but it shall not make unlawful any heretofore lawful plumbing system unless the Director of Public Health shall find that such system is dangerous or insanitary or a menace to life, health or property. (Ord. 92190; July 9, 1963).

5.01.310 Unlawful or insanitary systems. If at any time the Director of Public Health shall find that any plumbing system is not in accordance with this title, or is otherwise unlawful, or is dangerous or insanitary, or a menace to life, health or property, he is hereby authorized to give notice to the owner or occupant of the premises wherein such system is located by personal service, or by mail, or by posting on the premises, to make or cause such plumbing system to be made sanitary, and it shall be unlawful for anyone so notified to fail, neglect or refuse to comply with such notice. (Ord. 92190; July 9, 1963).

5.01.320 Plumbing advisory board. (a) There is hereby established a "Plumbing Advisory Board" which board shall consist of the director of public health, the superintendent of buildings, the King County director of buildings, and the superintendent of water, ex officio, and seven appointive members, one representative of each of the following: Journeyman plumbers, plumbing contractors, building construction industry, architects, professional mechanical engineers, sanitary engineers, and the public.

(b) Members of the plumbing advisory board, other than ex officio, shall be appointed by the mayor, subject to confirmation by a majority of the city council. Previous appointments to such board are hereby confirmed and hereafter appointments shall be for a term of five years ending December 31 of the fifth year of said term, provided that any vacancy shall be filled for the unexpired term in the same manner as original appointments. Original appointees shall serve staggered terms so that no more than three terms shall expire in any one year.

(c) The Plumbing Advisory Board shall elect a chairman who shall serve at the pleasure of the members. Such board may adopt rules of procedure and shall meet on call, subject to timely notice.

(d) The plumbing advisory board may examine rulings, or proposed rulings, of the director of public health related to this title, hold hearings, and make recommendations, but it shall act in an advisory capacity only. (Ord. 92190 as amended by Ord. 97361 and Ord. 98015 § 1; Aug. 6, 1969).

5.01.330 Permit required. (a) It is unlawful to do any work on any plumbing system without a plumbing permit as required by this title; except the repair or replacement of a plumbing fixture; the repair or replacement of a valve or faucet in a water supply system; the clearance of stoppages, the stopping of leaks; or the repair or replacement of domestic hot water tanks.

(b) Application for a plumbing permit shall be made to the director of public health and shall give the nature of the work, the number and kind of fixtures to be installed, and such other reasonable information as the director of public health may require.

(c) Application for a plumbing permit shall be accompanied by the following fees:

Minimum fee for issuing each permit	\$ 3.00
For each plumbing fixture or trap or set of fixtures on one trap (including water drainage vent piping and backflow protection therefor)	1.75
For each atmospheric vacuum breaker in irrigation systems, tanks, vats, etc. or for installation on unprotected plumbing fixtures including necessary water piping	
one to five—each	2.00
over five—each .....	.50
Pressure type backflow preventer—each	10.00
Reduced pressure principle backflow prevention device—each	10.00
Annual reinspection fee for reduced pressure backflow prevention device—each	10.00

For the purpose of this section "fixture" means and includes any appliance which is connected with a water, drain or vent pipe, but no sill-cock faucet or hose bib shall be considered a fixture.

(d) Fees for miscellaneous inspection services:

Fees for inspection service outside regular working hours or for inspection service requested but not covered by a permit will be charged for at a rate equal to the cost of performing the service.

Fee for permanent location inspection of factory housing (Minimum fee charged for plumbing only). No added fee for gas

5.01.340—5.01.370 PLUMBING

 piping meter connection with original
 plumbing inspection—per single family dwelling\$ 6.50
 (includes building drain extension, water
 service and gas meter connection).

 Additional plumbing fixtures roughed in
 after factory housing or mobile home is
 permanently located on foundation—each\$ 1.75

(e) Every plumbing permit shall be posted on the building or premises where the work permitted is being done and shall not be removed until the work has been finally approved by the director of public health.

(f) A plumbing permit shall expire one year from date of issue. (Ord. 92190 as amended by Ord. 95168 and Ord. 101046 § 1; June 5, 1972).

5.01.340 Owner's permit. Nothing herein contained shall prohibit any bona fide owner from personally installing plumbing or making alterations or repairs in his own single family residence or usual accessory building under the following terms and conditions:

(1) He shall apply for and secure a permit therefor as required by ordinance, and pay the required fee.

(2) He shall personally do the work in the manner required by ordinance, subject to inspection and approval by the director of public health, and it is unlawful for any person holding such owner's permit to allow any plumbing work to be done under said permit by any other person than the permittee, whether such other person is a licensed journeyman plumber or not. (Ord. 92190; July 9, 1963).

5.01.350 Existing permits. Any work authorized by a permit existing at the time of the effective date of this title* shall be pursuant to then existing law, and any conflicting requirements of this title shall not apply thereto. (Ord. 92190; July 9, 1963).

5.01.360 Contractor's license. It is unlawful to act as a plumbing contractor without a plumbing contractor's license or as a lawn sprinkler contractor without a lawn sprinkler contractor's license. Applications for such licenses shall be made to the city comptroller on forms provided by him. Upon issuance of such license, the licensee shall not operate under the license until he has registered with the director of public health on a form furnished by him, giving name of the licensee, number of license and the same information that is required to be set forth in the license application. (Ord. 92190; July 9, 1963).

5.01.370 Journeymen licenses. There shall be a journeyman plumber's license and a journeyman lawn sprinkler mechanic's license. It is unlawful to do any work for which a plumbing permit is required by this title, with-

*August 8, 1963.

out a journeyman's license for such purpose as required by this title, except as follows:

(1) An apprentice or probationer may do work on a plumbing system under the direct supervision and in the immediate presence of the holder of a journeyman's license to do such work;

(2) A resident owner may personally do work on a plumbing system in his own single family residence or usual accessory building;

(3) A person holding a validated journeyman's plumber's license may do work on a plumbing system as a journeyman plumber. (Ord. 92190 as amended by Ord. 96320 and Ord. 97361 § 3; Jan. 2, 1969).

5.01.375 Validated journeyman licenses. Any person holding an unexpired journeyman plumber's license or equivalent thereof issued by a jurisdiction other than the city of Seattle or King County may make application to the director of public health for validation thereof. Such application shall be made on a form furnished by the director of public health. Such license or equivalent when validated by the director of public health shall permit the holder thereof to do plumbing work as a journeyman plumber in the city of Seattle during the unexpired life of said license or equivalent, but not exceeding a period of one year. The director of public health may renew such validation annually upon application made therefor. No such license or equivalent shall be validated nor shall any validation be renewed unless the issuing jurisdiction shall have been approved by the plumbing examining board as maintaining standards and requirements for the issuance of such license or equivalent which are at least equal to those herein provided for the examination and certification of competency of a journeyman plumber. (Ord. 92190 (part) Added by Ord. 97361 and amended by Ord. 98593 § 1; Feb. 11, 1970).

5.01.380 Examination. A. EXAMINATION BOARD. There is established a plumbing examining board which shall examine, or cause the examination of, all applications for journeyman licenses as required by this title. Its members shall be, ex officio, the director of sanitation, the chief plumbing inspector, and the chief examiner of the civil service commission, who shall be the secretary of the board.

B. APPLICATIONS. Applicants for journeyman licenses, as required by this title, shall file a request for certification of competency with the plumbing examining board, accompanied by an examination fee of ten dollars. Such board shall examine, or cause the examination of, the applicant by questions and practical tests calculated to determine his skill and ability to perform the work contemplated by such certification. If the board finds the applicant competent, it shall so certify to the city comptroller, and the applicant shall then be entitled to be issued a journeyman's license by the city comptroller on payment of the required license fee. (Ord. 92190; July 9, 1963).

5.01.385—5.01.390 PLUMBING

5.01.385 Probationer's permit. Application for a probationer's permit; accompanied by a fee of five dollars, shall be made to the director of public health on a form furnished by him. The permit shall be valid for a period not to exceed six months and shall not be renewable. (Ord. 96320; Dec. 19, 1967).

5.01.390 License fees. (a) Annual and annual renewal fees for licenses required by this title are as follows:

Plumbing contractor's license	\$100.00
Lawnsprinkler contractor's license	50.00
Journeyman plumber's license	10.00
Journeyman lawn sprinkler mechanic's license	5.00

(b) All licenses shall expire on the 31st day of May of each year and where a license is issued for less than six month before the date of expiration of the license the fee shall be one-half the annual fee.

(c) A contractor's license may be transferred to a new location upon payment of ten percent of the annual fee.

(d) Journeyman licenses may be renewed upon payment of renewal fee if renewal is applied for within thirty days after expiration of such license. A journeyman license may be reissued without examination to a person formerly holding a journeyman license which has been expired for a period of over thirty days, upon payment of the renewal fee plus a fee of ten dollars. (Ord. 92190 amended by Ord. 98593 § 2; Feb. 11, 1970).

5.01.395 Reciprocal licensing. Any person maintaining a license in good standing issued under King County Resolution No. 28817, as now or hereafter amended, is exempt from the licensing requirements of this title so long as the county gives like consideration on a reciprocal basis to those persons licensed hereunder. (Ord. 96320; Dec. 19, 1967).

5.01.400 Revocation of licenses. Any license issued hereunder shall be revoked by the city comptroller, upon recommendation of the director of public health, for fraud or misrepresentation in making the application for license or in carrying out any work for which the license is required, or for failure to comply with any provision of this title. The holder of any license revoked shall have the right to appeal to the city council from such revocation by filing a notice of appeal with the city council within fifteen days after such notice of revocation is mailed to the address of the license by the city comptroller. The hearing on the appeal shall be held before the city council or a committee thereof, as directed by the city council. At the hearing the holder of the license shall be entitled to be heard in person, to produce witnesses and be represented by counsel. The action of the city council on the question shall be final and conclusive. (Ord. 92190; July 9, 1963).

5.01.410 Existing licenses. Anyone holding any license issued under Ordinance 80242, as amended, and in effect on August 8, 1963 shall be entitled to continue to operate under such license, and shall be entitled to renewal of the same upon paying the annual license fee herein required; provided, that no renewal of such license shall be allowed unless application for renewal is made within thirty days after date of expiration. Any such license shall be subject to revocation under the provisions of this title. (Ord. 92190; July 9, 1963).

5.01.420 Unlawful advertising. It is unlawful for anyone without such license to advertise for, solicit, or invite any business for which a license is required by this title. (Ord. 92190; July 9, 1963).

Chapter 5.02

MATERIALS AND ALTERNATES

Sections:

- 5.02.010 Material.
- 5.02.015 Plastic pipe and fittings.
- 5.02.020 Iron pipe size pipe.
- 5.02.030 Copper tubing.
- 5.02.040 Lead.
- 5.02.050 Calking ferrules.

5.02.010—5.02.015 PLUMBING

- 5.02.060 Soldering nipples.
- 5.02.070 Floor flanges.
- 5.02.080 Cleanouts.
- 5.02.090 Fittings.
- 5.02.100 Valves

5.02.010 Material. A. APPROVED STANDARDS. All pipe, fittings, fixtures, material or devices used in plumbing systems shall be free from defects and, except as otherwise provided in this title, shall be as set forth in the applicable standard or standards listed in Table 2-1 which is hereby adopted. Copies of the standards listed in Table 2-1 are filed with the city comptroller under the comptroller's file numbers shown in Table 2-1.

B. ALTERNATE MATERIAL OR CONSTRUCTION. Alternate material or method of construction may be used, provided that the director of public health shall find that such is, for the purpose, at least equivalent of that prescribed in this title, and shall approve thereof.

C. SPECIAL CIRCUMSTANCES. Design and material for circumstances not contemplated by this title may be used, provided that the director of public health shall find that such is in the interest of public health and safety, and shall approve thereof.

D. NEW DEVICES. A new device may be used, provided, that it shall be tentatively approved, and that upon test conducted after installation, the director of public health shall find that the device, when in use, is sanitary and safe, and at least the equivalent of that prescribed in this title, in which case, he shall finally approve thereof.

E. UNUSUAL STRUCTURAL CONDITIONS. Where building structural conditions make impracticable the application of particular requirements of this title, then other material or method may be used, provided the director of public health shall find that such is not unsafe or insanitary, and shall approve thereof.

F. MARKING. All pipe, fittings, fixtures, material or devices used in plumbing systems shall be marked or identified in an approved manner. (Ord. 92190; July 9, 1963).

5.02.015 Plastic pipe and fittings. *Acrylonitrile - Butadiene - Styrene (A.B.S.) and *Polyvinal Chloride (P.U.C.) drain, waste and vent pipe and fittings are approved for use in H, I and J occupancies for above and below ground drain, waste and vent installations. When used in H occupancies refer to Building Code in relation to fire restrictions in Types III, IV, and V construction. Plastic pipe and fittings are not approved in Types I and II construction. Group H occupancies shall be: hotels, motels,

* See Table 2-1 for material and installation standards.

apartment houses, dormitories, convents and monasteries with capacity of more than twelve. Group I occupancies shall be: one and two family dwellings; convents and monasteries with capacity of twelve or less. Group J occupancies shall be: private garages, carports, sheds and agricultural buildings used as accessory buildings only and not over one thousand square feet in area. Vertical soil and vent stacks shall not exceed thirty feet in height which shall be measured from the base of the stack at the finish floor level to the ceiling of the top floor. The extension of the vents through the roof above the top floor ceiling may be of ABS or PVC material.

ABS and PVC plastic pipe and fittings shall be installed in accordance with all applicable sections of the Plumbing Code herein pertaining to above and below ground installation of drain, waste, and vent pipe and fittings. (Ord. 96281 as amended by Ord. 98593 and Ord. 98972 § 1; June 5, 1970).

5.02.020 Iron pipe size pipe. Wrought iron, steel, copper and brass pipe shall be standard weight, iron pipe size, pipe. Threads used in assembling such pipe shall be standard taper pipe threads. (Ord. 92190; July 9, 1963).

5.02.030 Copper tubing. (a) Copper tubing for underground drainage and vent piping shall have a weight of not less than that of copper water tube Type L.

(b) Copper tubing for above ground drainage and vent piping shall have a weight of not less than that of copper drainage tube Type D.W.V.

(c) Copper tubing for water piping below ground shall have a weight of not less than that of copper water tube Type L. Copper tubing for water piping above ground shall have a weight of not less than that of copper water tube Type M.

(d) In addition to other marking, all hard drawn copper tubing shall be marked by means of a continuous and indelibly colored stripe at least one-quarter inch in width as follows: Type K, green; Type L, blue; Type M, red; Type DWV, yellow. (Ord. 92190; as amended by Ord. 98593 § 4; Feb. 11, 1970).

5.02.040 Lead. A. WEIGHT. The weight of lead for shower pans shall be not less than four pounds per square foot. The weight of lead for flashings of vent terminals shall be not less than three pounds per square foot.

B. WALL THICKNESS. The wall thickness of lead bends and lead traps shall be not less than one-eighth inches. (Ord. 92190; July 9, 1963).

5.02.050—Calking ferrules. Calking ferrules shall be brass and as set forth in Table 2-2, which is hereby adopted. (Ord. 92190; July 9, 1963).

5.02.060—5.02.100 PLUMBING

5.02.060 Soldering nipples. Soldering nipples shall be brass and as set forth in Table 2-3 which is hereby adopted. (Ord. 92190; July 9, 1963).

5.02.070 Floor flanges. Floor flanges for water closets or similar fixtures shall be copper, brass, hard lead, cast iron or galvanized malleable iron, and designed and secured to support the fixtures connected thereto. Floor flanges shall be burned or soldered to lead bends or stubs, shall be calked to cast iron soil pipe and shall be screwed or fastened in an approved manner to other materials. Calked-on floor flanges shall be not less than one-fourth inch thick and not less than two inches in over-all depth. Closet screws and bolts used with floor flanges shall be of brass or other approved corrosion resistant metal, and all such screws and bolts shall be of such size and number as to securely support the fixture installed. (Ord. 92190; July 9, 1963).

5.02.080 Cleanouts. A. MATERIALS. Each cleanout for cast iron pipe shall consist of a cast iron or brass body and a brass plug, and each cleanout for galvanized wrought iron, galvanized steel, copper or brass pipe shall consist of a brass plug, as provided for in Table 2-4, which is hereby adopted, or a standard weight brass cap.

B. CLEANOUT PLUGS. Cleanout plugs shall have raised square heads or approved countersunk rectangular slots. Countersunk heads shall be used where raised heads may cause a hazard. Cleanout plugs with raised heads shall be as provided in Table 2-5, which is hereby adopted. Cleanout plugs with countersunk heads shall meet the applicable specifications set forth in Table 2-5.

C. TIGHTNESS. Each cleanout shall be maintained gas and watertight. Where a thread lubricant is used, such lubricant shall be an approved nonhardening type. No gasket, packing or washer shall be used to maintain any cleanout in a gas and watertight condition. (Ord. 92190; July 9, 1963 as amended by Ord. 92556; Dec. 24, 1963).

5.02.090 Fittings. A. MATERIALS. Threaded fittings shall be cast iron, malleable iron, copper or brass, of standard weight and dimensions.

B. THREADED DRAINAGE FITTINGS. Threaded drainage fittings shall have smooth interior waterways and threads tapped out of solid metal, and shall be such as to allow not less than one-fourth inch per foot of grade.

C. WATER FITTINGS. Water fittings shall be cast iron, wrought iron, copper or brass.

D. GALVANIZING. Cast iron water fittings two inches or less in size shall be galvanized. All malleable iron water or vent fittings shall be galvanized. (Ord. 92190; July 9, 1963).

5.02.100 Valves. A. MATERIAL. Valves two inches or less in size shall be brass or copper.

B. GATE VALVES. Gate valves in drainage piping shall be full way type with working parts of corrosion resistant metal, and such valves four inches or more in size shall have cast iron bodies, and less than four inches in size shall have cast iron or brass bodies.

C. BACKWATER VALVES. Backwater valves shall have cast iron or brass bodies, noncorrosive bearings and seats, and noncorrosive self-aligning discs, and shall be such as to insure a positive mechanical seal and to remain closed; except when discharging wastes. Backwater valves shall be such as to remain sufficiently open during periods of low flows to avoid screening of solids and shall not restrict capacities or cause excessive turbulence during peak loads. Backwater valve access covers shall be bolted type with gasket, and the manufacturer's name shall be cast into both valve body and cover. (Ord. 92190; July 9, 1963).

(



(

(

TABLE NO. 2-1
PLUMBING MATERIAL STANDARDS

MATERIALS AND PRODUCTS	ANSI	ASTM	FS ³	AWWA ⁴ , CS ⁵ , UPC ⁶
Ferrous Pipe and Fittings:				
Cast iron drainage fittings.....				UPC PS 5 (1959) C.F. 248009
Cast iron soil pipe and fittings.....	A40.1 (1935) C.F. 248026			CS 188 (1966) Morris nohub Cast- Iron Coupling Appli- cation No. 4421 File No. 761 (1969) UPC C.F. 265407
Cast iron water pipe.....	A21.2 (1953) C.F. 248015		WW-P-421b (1961) C.F. 248045	AWWA C 102 (1953) C.F. 248015
Wrought iron pipe.....	B36.2 (1961) C.F. (248025)		WW-P-441b (1954) C.F. 248044	
Steel pipe.....		A120 (1961) C.F. 248056	WW-P-406b (1961) C.F. 248043	
Open hearth iron pipe.....			WW-P-406b (1961) C.F. 248043	
Hubless cast iron sanitary systems				
*Standard 301 (1965T) C.F. 259565				
Malleable iron threaded fittings.....	B16.3 (1951) C.F. 248024		WW-P-521d (1959) C.F. 248042	
Pipe threads.....	B2.1 (1960) C.F. 248022			

* Standards sponsored by Cast Iron Soil Pipe Institute.

Table 2-1 PLUMBING

TABLE NO. 2-1
PLUMBING MATERIAL STANDARDS
(Continued)

MATERIALS AND PRODUCTS	ANSI ¹	ASTM ²	FS ³	AWWA ⁴ , CS ⁵ , UPC ⁶
Non-ferrous Pipe and Fittings:				
Seamless brass tubing.....	.....	B135 (1961) C.F. 248055	WW-T-791 (1933) C.F. 248041	.....
Red brass pipe.....	.....	B43 (1958) C.F. 248054	WW-P-351 (1930) C.F. 248040	.....
Copper pipe	H26.1 (1959) C.F. 248023	B42 (1958) C.F. 248053	WW-P-377b (1955) C.F. 248039	.....
Bronze threaded fittings.....	B16.15 (1958) C.F. 248021	.....	WW-P-460a (1961) C.F. 248038	.....
Seamless copper tubes .....	.....	B75 (1961) C.F. 248052	WW-T-797a (1958) C.F. 248037	.....
Seamless copper water tube (K, L & M) .....	.....	B88 (1961) C.F. 248051	WW-T-799a (1946) C.F. 248036	.....
Copper drainage tube (DWV) .....	.....	B306 (1961) C.F. 248050	.....	CS 229 (1960) C.F. 248013
Acrylonitrile-Butadiene-Styrene (ABS) (Drain, Waste and Vent) .....	.....	.....	.....	CS 270 (1965) C.F. 259562 UPC PS 17 (1966) C.F. 259564 UPC 155 (1966) C.F. 265407

TABLE NO. 2-1
PLUMBING MATERIAL STANDARDS
..Continued)

MATERIALS AND PRODUCTS	ANSI	ASTM²	FS³	AWWA⁴, CS⁵, UPC⁶
Polyvinyl-Chloride (PVC) (Drain, Waste and Vent)		D2665 (1968) C.F. 265407		CS 272 (1965) C.F. 265407 UPC IS 9 (1968) C.F. 265407
Polyethylene water service pipe				UPC IS 7 (1966) P. C.F. 265407 UPC PS 24 (1968) C.F. 265407 UPC PS 25 (1968) C.F. 265407
Installation standard for sol- vent cemented PVC pipe for water service				UPC IS 8 (1967) C.F. 265407
Wrought copper and wrought bronze solder joint fittings	B16.22 (1951) C.F. 248020			
Cast brass solder joint fittings	B16.18 (1950) C.F. 248019			
Cast bronze solder joint drainage fittings	B16.23 (1960) C.F. 248018			
Brass fittings for flared copper tubes	B16.26 (1958) C.F. 248017			
Lead pipe bends and traps			WW-P-325 (1944) C.F. 248035	

TABLE NO. 2-1
PLUMBING MATERIAL STANDARDS
(Continued)

MATERIALS AND PRODUCTS	ANSI ¹	ASTM ²	FS ³	AWWA ⁴ , CS ⁵ , UPC ⁶
P-Traps	-----	-----	-----	UPC PS 2 (1958) C.F. 248007
Wall adapter for tubing traps	-----	-----	-----	UPC PS 7 (1955) C.F. 248008
Brass directional tees—elbows	-----	-----	-----	UPC PS 9 (1955) C.F. 248006
Plumbing Fixtures:				
Staple vitreous china plumbing fixtures	-----	-----	-----	CS 20 (1956) C.F. 248012
Enameled cast iron plumbing fixtures	-----	-----	-----	CS 77 (1956) C.F. 248010
Earthenware vitreous glazed plumbing fixtures	-----	-----	-----	CS 111 (1943) C.F. 248011
Plumbing fixtures for land use	-----	-----	WW-P-541b (1962) C.F. 248034	-----
Drinking fountains	Z4.2 (1942) C.F. 248027	-----	-----	-----
Gel-coated glass-fiber-reinforced polyester resin bathtubs	Z124.1 (1967) C.F. 265407	-----	-----	-----
Gel-coated glass-fiber-reinforced resin shower receptors	ANSI-Z124.2 (1967) C.F. 265407	-----	-----	-----

TABLE NO. 2-1
 PLUMBING MATERIAL STANDARDS
 (Continued)

MATERIALS AND PRODUCTS	ANSI	ASTM ²	FS ³	AWWA ⁴ , CS ⁵ , UPC ⁶
Valves:				
Bronze gate	WW-V-54b (1962) C.F. 248033	.....
Cast iron gate	WW-V-58 (1946) C.F. 248032	.....
Miscellaneous:				
Caulking lead	QQ-L-156 (1946) C.F. 248031	.....
Casting brass	B146 (1952) C.F. 248049	.....	.....
Sheet lead	QQ-L-201d (1961) C.F. 248030	.....
Sheet, rod and bar copper	B152 (1960) C.F. 248048	.....	.....
Sheet steel or iron, galvanized	G8.2 (1960) C.F. 248016	A93T (1959) C.F. 248046	.....	.....
Soft solder	B32T (1958) C.F. 248047	QQ-S-571c (1960) C.F. 248029	.....
Fixture setting compounds	HH-C-536a (1954) C.F. 248028	.....

1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

3. The third part of the document is a list of names and addresses of the members of the committee.

4. The fourth part of the document is a list of names and addresses of the members of the committee.

5. The fifth part of the document is a list of names and addresses of the members of the committee.

6. The sixth part of the document is a list of names and addresses of the members of the committee.

7. The seventh part of the document is a list of names and addresses of the members of the committee.

8. The eighth part of the document is a list of names and addresses of the members of the committee.

9. The ninth part of the document is a list of names and addresses of the members of the committee.

10. The tenth part of the document is a list of names and addresses of the members of the committee.

11. The eleventh part of the document is a list of names and addresses of the members of the committee.

12. The twelfth part of the document is a list of names and addresses of the members of the committee.

(

(

(

Abbreviations

- ¹ANSI—American National Standards approved by the American National Standards Institute, Inc., 1430 Broadway, New York 10018.
- ²ASTM—Standards and Tentative Standards published by the American Society for Testing Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.
- ³FS—Federal Specifications published by the Federal Specifications Board, obtainable from Superintendent of Documents, Government Printing Office, Washington, D.C. 20025.
- ⁴AWWA—Standards and Tentative Standards published by the American Water Works Association, 2 Park Avenue, New York, New York 10016.
- ⁵CS—Commercial Standards published by the United States Department of Commerce, obtainable from Superintendent of Documents, Government Printing Office, Washington, D.C. 20025.
- ⁶UPC—Standards and Tentative Standards sponsored by International Association of Plumbing and Mechanical Officials (formerly Western Plumbing Officials Association), 5032 Alhambra Avenue, Los Angeles, California 90032.

**TABLE NO. 2-2
CALKING FERRULES**

Pipe Size (Inches)	Inside Diameter (Inches)	Ferrules		
		Length (Inches)	Minimum Weight Each (Lb.) (Oz.)	
2	2¼	4½	1	0
3	3¼	4½	1	12
4	4¼	4½	2	8

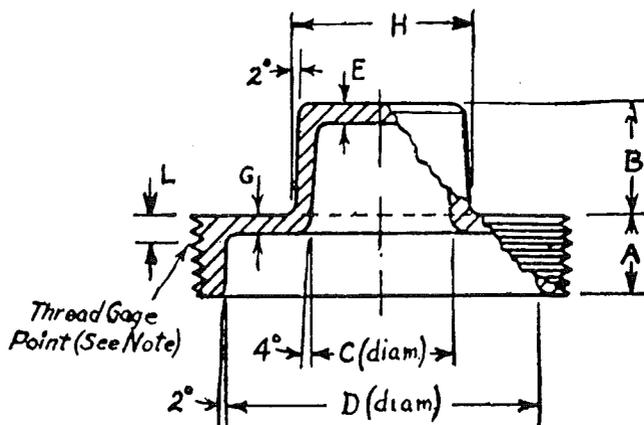
**TABLE NO. 2-3
SOLDERING NIPPLES**

Pipe Size (Inches)	Minimum Weight Each (Lb.) (Oz.)	
1¼	--	6
1½	--	8
2	--	14
2½	1	6
3	2	0
4	3	8

**TABLE NO. 2-4
CLEANOUTS**

Size of Pipe Served (Inches)	Size of Cleanout Opening			
	With Threaded or Sweat Joint (Inches)	Sweat Joint (Inches)	With Caulking Ferrule (Inches)	Cleanout Plug Threads per Inch
1¼	1¼	1¼	--	11½
1½	1½	1½	--	11½
2	2	1½	1½	11½
2½	2½	2	--	8
3	3	2½	2½	8
4	4	3½	3½	8
5	--	--	4	8
6	6	--	5	8
8	8	--	6	8
Over 8	--	--	6	--

Table No. 2-5
CLEANOUT PLUGS



Size of Plug (Inches)	Plug Dimensions (Inches)							
	A	B	C	D	E	G	H	L ¹
1 1/4	1/2	1/2	3/4	1 5/16	5/32	1/8	1	5/32
1 1/2	5/8	3/4	3/4	1 1/2	3/16	1/8	1	3/16
2	5/8	3/4	1	2	3/16	1/8	1 1/4	3/16
2 1/2	3/4	3/4	15/16	2 3/8	3/16	5/32	1 1/4	1/4
3	3/4	1	1 5/16	2 15/16	3/16	5/32	1 5/8	1/4
3 1/2	3/4	1	1 1/4	3 7/16	1/4	3/16	1 5/8	1/4
4	7/8	1	1 5/8	3 15/16	1/4	3/16	2	5/16
4 1/2	7/8	1	1 9/16	4 7/16	5/16	7/32	2	5/16
5	1	1	1 15/16	4 15/16	5/16	7/32	2 3/8	3/8
5 1/2	1	1	1 15/16	5 7/16	5/16	7/32	2 3/8	3/8
6	1	1	1 7/8	5 15/16	3/8	1/4	2 3/8	3/8

1. When thread gauge is screwed tightly on plug by hand, large end of gauge shall be the distance "L" + or - 1 1/2 turns, from surface of plug.

Chapter 5.03

GENERAL REGULATIONS

Sections:

- 5.03.010 Disposal of sewage and liquid waste.
- 5.03.020 Drainage connections required.
- 5.03.030 Basement drains.
- 5.03.040 Plans required.
- 5.03.050 Improper location.
- 5.03.060 Workmanship.
- 5.03.070 Prohibited fittings and practices.
- 5.03.080 Independent systems.
- 5.03.090 Repairs and alterations.

- 5.03.100 Protection of piping.
- 5.03.110 Protection of buildings.
- 5.03.120 Hangers and supports.
- 5.03.130 Support of vertical piping.
- 5.03.140 Support of horizontal piping.
- 5.03.150 Excavations.
- 5.03.160 Inspection.
- 5.03.170 Testing.
- 5.03.180 Maintenance.

5.03.010 Disposal of sewage and liquid waste. It is unlawful to cause, suffer or allow the disposal of sewage, human excrement or liquid wastes, in any place or manner, except through and by means of a lawfully installed and maintained plumbing and drainage system. (Ord. 92190; July 9, 1963).

5.03.020 Drainage connections required. All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be lawfully connected to the drainage system of a building or other premises, and every such drainage system shall be lawfully connected to a public sewer or to a lawful private sewage disposal system. This section does not apply to rainwater leaders. (Ord. 92190; July 9, 1963).

5.03.030 Basement drains. Unless otherwise approved by the Director of Public Health, the basement, and other similar areas of every building, shall be provided with a drain or drains not less than two (2) inches in size installed and maintained in an approved manner such as will prevent the accumulation of water or liquid waste in such basement or area. (Ord. 92190; July 9, 1963).

5.03.040 Plans required. A. REQUIREMENT. The Director of Public Health may require the submission of plans, specifications, drawings, and such other information as he may deem necessary, prior to the commencement of, and at any time during the progress of, any work regulated by this title.

B. EFFECT OF ISSUANCE OF PERMIT. The issuance of a plumbing permit upon plans and specifications shall not prevent the Director of Public Health from thereafter requiring the correction of errors in any such work or from preventing construction operations being carried on when such work is unlawful. (Ord. 92190; July 9, 1963).

5.03.050 Improper location. The location of any piping, fixture, appliance, equipment or device shall not be such as to interfere with its normal use, or with the normal operation and use of windows, doors or other usual building facilities. (Ord. 92190; July 9, 1963).

5.03.060 Workmanship. It is unlawful to conceal, or attempt to conceal, cracks, holes, or any other imperfections in workmanship or materials by welding, brazing or soldering, or by using any paint, wax, tar, or other leak-sealing or repair agent. (Ord. 92190; July 9, 1963).

5.03.070 Prohibited fittings and practices. A. **DRAINAGE FITTINGS.** No double hub fitting, single or double tee branch, single or double tapped tee branch, side inlet quarter bend, running thread, band or saddle shall be used as a drainage fitting.

B. **DRAINAGE AND VENT PIPING.** No drainage or vent piping shall be drilled and tapped for the purpose of making connections thereto, and no cast iron soil pipe shall be threaded.

C. **WASTE CONNECTION.** No waste connection shall be made to a closet bend or stub of a water closet or similar fixture.

D. **VENT PIPE.** Except as otherwise provided in this title, no vent pipe shall be used as a soil or waste pipe.

E. **OBSTRUCTION.** No fitting, connection, device or method of installation which obstructs or retards the flow of water, wastes, sewage or air in a drainage or venting system in an amount greater than the normal frictional resistance to flow, shall be used, except as otherwise specifically approved. The enlargement of a three (3) inch closet bend or stub to four (4) inches is not an obstruction.

F. **DIRECTION OF FLOW.** All valves, pipes and fittings shall be installed in appropriate relationship to the direction of flow. (Ord. 92190; July 9, 1963).

5.03.080 Independent systems. A drainage system in any building shall be separate and independent from a drainage system in any other building, provided, that where one building is in the rear of another building on the same interior lot, and such separation is impracticable, then the building drain from such rear building may discharge into the building drain from such front building. (Ord. 92190; July 9, 1963).

5.03.090 Repairs and alterations. A. **DEVIATIONS.** Where, in respect to the alteration, repair or renovation of existing plumbing systems, the application of specific requirements of this title is impracticable, the Director of Public Health may approve deviations therefrom.

B. **EXISTING DRAINAGE SYSTEM.** An existing building drain shall not be used in connection with a new building or new plumbing unless such use is approved by the Director of Public Health. No building or part thereof shall be placed over any part of a drainage system unless such drainage system is approved for such purpose by the Director of Public Health.

C. **OPENINGS PLUGGED OR CAPPED.** All openings into a drainage or vent system, excepting those openings to which plumbing fixtures

are connected or which constitute vent terminals, shall be permanently plugged or capped in an approved manner. (Ord. 92190; July 9, 1963).

5.03.100 Protection of piping. All piping shall be such as to provide for expansion, contraction and structural settlement. Piping passing under or through walls shall be protected against breakage. Piping passing through or under cinders or other corrosive material shall be protected against external corrosion. No piping shall be built into or embedded in concrete or masonry walls or footings. Voids around piping passing through masonry walls on the ground shall be sealed. (Ord. 92190; July 9, 1963).

5.03.110 Protection of buildings. No building shall be weakened by the cutting or notching of any structural member, and unless impracticable due to structural conditions, piping shall pass through wood beams, girders, joists, studs and similar structural members of a building by means of holes bored to approximately the same diameter as the pipes passing through such holes. (Ord. 92190; July 9, 1963).

5.03.120 Hangers and supports. All fixtures, appliances and equipment shall be supported in an approved manner. All piping shall be supported by approved metal hangers or other supports of such strength, and at such intervals, as to keep the piping in alignment, prevent sagging, and carry the weight of the piping and its contents. (Ord. 92190; July 9, 1963).

5.03.130 Support of vertical piping. Stacks shall be supported at their bases, and, if over two (2) stories in height, at each floor, by approved metal floor clamps. Cast iron soil pipe installed vertically shall be supported at its base and at not less than every story height. Threaded pipe installed vertically shall be supported at not less than every other story height. Copper tubing installed vertically shall be supported at not less than every story height. Lead pipe installed vertically shall be supported at intervals of not more than four (4) feet. (Ord. 92190; July 9, 1963).

5.03.140 Support of horizontal piping. When five (5) foot lengths are used, cast iron soil pipe installed horizontally shall be supported at intervals of not more than five (5) feet. When ten (10) foot lengths are used, cast iron soil pipe installed horizontally shall be supported at intervals of not more than ten (10) feet. Threaded pipe installed horizontally shall be supported at intervals of not more than twelve (12) feet. Copper tubing two (2) inches or more in size and installed horizontally shall be supported at intervals of not more than ten (10) feet. Copper tubing one and one-half (1½) inches or less in size and installed horizontally shall be supported at intervals of not more than six (6) feet. Lead pipe installed horizontally shall be continuously and uniformly supported for its entire length. Piping in the ground shall be laid on a firm bed for its entire

length, or shall be otherwise supported as approved by the director of public health. (Ord. 92190; July 9, 1963).

5.03.150 Excavations. All excavations shall be open trench work. Excavations shall be kept open until the piping installed therein has been inspected and approved. Backfill of excavations shall be such as to insure compactness around the piping therein without damage to such piping. (Ord. 92190; July 9, 1963).

5.03.160 Inspection. A. SCOPE. All new plumbing work and such portions of existing systems as may be affected by new work, or any changes, may be inspected by the Director of Public Health and shall be left readily accessible for such purpose until approved by the Director of Public Health.

B. ADVANCE NOTICE. It shall be the duty of the person doing the work authorized by the permit to notify the Director of Public Health orally or in writing that said work is ready for inspection. Such notification shall be given not less than twenty-four hours before the work is to be inspected.

C. RESPONSIBILITY. It shall be the duty of the holder of the permit to make sure that work will stand the test prescribed before giving the notification.

D. RETESTING. If the Director of Public Health finds that the work will not pass the test, approved corrections shall be made and the work shall then be resubmitted for test or inspection.

E. TEST. Tests shall be conducted in the presence of the Director of Public Health.

F. CORRECTIONS. Notices of correction or violation shall be written by the Director of Public Health and may be posted at the site of the work or mailed or delivered to the permittee or his representative. Refusal, failure or neglect to comply with any such notice or order within ten (10) days of receipt thereof, shall constitute a violation of this title.

G. APPROVAL. Upon the satisfactory completion and final inspection of a plumbing system, a certificate of approval therefor shall be issued by the Director of Public Health to the permittee on demand.

H. UNCOVERING. If any drainage or plumbing system, or part thereof, which is installed, altered or repaired, is covered or concealed before being inspected, tested and approved, as prescribed in this title, it shall be uncovered for inspection after notice to uncover the work has been issued to the responsible person by the Director of Public Health. (Ord. 92190; July 9, 1963).

5.03.170 Testing. A. RESPONSIBILITY. The equipment, material and labor necessary for inspection or tests of any plumbing shall be fur-

nished by the person to whom the permit for such work has been issued or by whom inspection is requested.

B. MEDIA. The piping of the plumbing, drainage and venting systems shall be tested with water or air. The Director of Public Health may require the removal of any cleanouts or other devices to ascertain if the pressure has reached all parts of the system. After the plumbing fixtures have been set and their traps filled with water, they shall be submitted to a final inspection upon notice given by owner or contractor.

C. WATER TEST. The water test shall be applied to the drainage system either in its entirety or in sections, as follows. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest opening of the section under test, and each section shall be filled with water, but no section shall be tested with less than a five (5) foot head of water. In testing successive sections, at least the upper five (5) feet of the next preceding section shall be tested, so that no joint or pipe in the building, except the uppermost five (5) feet of the system, shall have been submitted to a test of less than a five (5) foot head of water. The water shall be kept in the system, or in the portion under test, for at least fifteen minutes before inspection starts; the system shall then be tight at all points.

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

E. WATER PIPING. Upon completion of a section, or of an entire hot and cold water supply system, it shall be tested and proved tight under a water pressure not less than the working pressure under which it is to be used. The water used for tests shall be obtained from a potable source of supply. A fifty (50) pounds per square inch air pressure may be substituted for the water test. In either method of test the piping shall withstand the test without leaking for a period of not less than fifteen (15) minutes.

F. DEFECTIVE SYSTEM. A water or air test may be used in testing the sanitary condition of the drainage or plumbing system of any building or premises where there is reason to believe that it has become defective. In buildings or premises condemned because of an insanitary condition of the plumbing system or part thereof, the alterations in such system shall conform to the requirements of this title or shall be as otherwise required by the Director of Public Health.

G. **MOVED STRUCTURES.** All parts of the plumbing systems of any building or part thereof, that are moved from one foundation to another shall be completely tested as prescribed for new work, except that walls or floors need not be removed during such test when other equivalent means of inspection acceptable to the Director of Public Health are provided.

H. **EXCEPTIONS.** In cases where water or air test would be impracticable, or for minor installations and repairs, the Director of Public Health may make such inspection as he deems advisable in order to assure himself that the work has been performed in accordance with the intent of this title. (Ord. 92190; July 9, 1963).

5.03.180 Maintenance. Every plumbing and drainage system shall be maintained in a sanitary and safe operating condition. (Ord. 92190; July 9, 1963).

Chapter 5.04 DRAINAGE SYSTEMS

Sections:

- 5.04.010 Drainage pipe.
- 5.04.020 Drainage fittings.
- 5.04.030 Fixture unit equivalents.
- 5.04.040 Size of drainage piping.
- 5.04.050 Fixture connections.
- 5.04.060 Changes in direction.
- 5.04.070 Cleanouts.
- 5.04.080 Grade of horizontal drainage piping.
- 5.04.090 Gravity drainage.
- 5.04.100 Drainage below sewer level.
- 5.04.110 Subsoil drainage.

5.04.010 Drainage pipe. Except as otherwise provided in this ordinance, drainage pipe shall be service weight cast iron, or galvanized steel, galvanized wrought iron, lead, copper, or brass, having a smooth and uniform bore. No drain waste and vent (D.W.V.) copper tube, galvanized wrought iron or galvanized steel pipe shall be used underground, and such pipe shall be kept at least six inches above ground level and such piping shall not be permitted in open trenches. Burred ends shall be reamed to the full bore of the pipe. Hubless cast iron pipe shall be permitted above ground level only in single family dwellings. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.04.020 Drainage fittings. Except as otherwise provided in this title, drainage fittings shall be service weight cast iron, or malleable iron, lead, copper or brass, having a smooth interior waterway of the same diameter as the piping served. Drainage fittings shall conform to the type of pipe

used, and such threaded fittings shall be of the recessed drainage type. (Ord. 92190; July 9, 1963).

5.04.030 Fixture unit equivalents. A. HOW DETERMINED. Fixture unit equivalents used in sizing drainage and vent systems shall be determined as follows:

(1) The fixture unit equivalent of certain plumbing fixtures shall be based on the size of the trap required, as shown in Table 4-1, which is hereby adopted, provided that where trap sizes are increased over the minimums set forth in Table 4-1 then the fixture unit equivalent of such fixtures shall be determined from the discharge capacity of the trap as shown in Table 4-2, which is hereby adopted.

(2) The fixture unit equivalent of fixtures and devices not listed in Table 4-1 shall be determined from their discharge capacity as shown in Table 4-2.

B. TRAP SIZE. Trap sizes shall not be increased to a point where a fixture discharge may be inadequate to sustain its self-scouring properties. Maximum trap loading shall be as set forth in Table 4-3, which is hereby adopted. (Ord. 92190; July 9, 1963 as amended by Ord. 92556; December 24, 1963).

5.04.040 Size of drainage piping. The minimum size, maximum length, and maximum fixture unit loading of drainage piping shall be as determined from Table 4-4, which is hereby adopted. (Ord. 92190; July 9, 1963).

5.04.050 Fixture connections. (a) Drainage piping shall be provided with approved inlet fittings for fixture connections, located consistent with the size and type of fixture to be connected.

(b) Two fixtures with the same size traps may be set back to back, within an approved distance between a trap and its vent and may be served by a single drainage pipe provided that each such fixture wastes separately into an approved double fitting having inlet openings at the same level. Sinks installed back to back shall be roughed in with double long turn-tee wye waste fittings or may be separately trapped and vented. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.04.060 Changes in direction. A. BENDS. except as otherwise provided in this title, changes in direction of drainage piping shall be made by the use of long sweep one-quarter ($\frac{1}{4}$) bends, radius of which shall be not less than twice the size of the pipe served, or of one-sixth ($\frac{1}{6}$) bends, one-eighth ($\frac{1}{8}$) bends, one-sixteenth ($\frac{1}{16}$) bends, or other approved fittings of equivalent sweep.

B. HORIZONTAL TO VERTICAL. Horizontal drainage lines connecting to vertical lines shall enter through forty-five degree (45°) wye branches, sixty degree (60°) wye branches, combination wye and one-eighth ($\frac{1}{8}$) bend branches, sanitary tee or sanitary tapped tee branches, or other approved fittings of equivalent sweep, provided that short sweep

one-quarter (1/4) bends may be used in such piping three (3) inches or more in size.

C. HORIZONTAL TO HORIZONTAL. Horizontal drainage lines connecting to other horizontal drainage lines shall enter through forty-five degree (45°) wye branches, combination wye and one-eighth (1/8) bend branches, or other approved fittings of equivalent sweep.

D. VERTICAL TO HORIZONTAL. Vertical drainage lines connecting to horizontal drainage lines shall enter through forty-five (45°) wye branches, combination wye and one-eighth (1/8) bend branches, or other approved fittings of equivalent sweep. (Ord. 92190; July 9, 1963).

5.04.070 Cleanouts. A. WHERE REQUIRED. Except as otherwise provided in this title, there shall be a cleanout at the upper terminal of every run of horizontal drainage piping the developed length of which is five (5) feet or more, there shall be cleanouts at intervals of not more than fifty (50) feet in every run of horizontal drainage piping the developed length of which is more than fifty (50) feet, there shall be a cleanout wherever there are changes of direction in any run of horizontal drainage piping in excess of one (1) forty-five degree (45°) turn or one (1) forty-five degree (45°) offset; provided, that cleanouts are not required on any concealed or completely enclosed piping above the first floor of a building.

B. LOCATION. Every cleanout shall be so installed that it opens in a direction opposite to the flow of the soil or waste or at right angles thereto. Every cleanout, unless installed under an approved cover plate, shall be readily accessible, and so located as to serve the purpose for which it is intended.

C. EXTENSIONS. Every cleanout extension shall be considered as drainage piping, and every ninety degree (90°) cleanout extension shall be extended from a wye type or other approved fitting of equivalent sweep.

D. INTERCEPTORS. Every cleanout for an interceptor shall be outside such interceptor.

E. CLEARANCE. There shall be a clearance of not less than twelve (12) inches in front of every cleanout in piping two (2) inches or less in size, and of not less than eighteen (18) inches in front of every cleanout over two (2) inches in size. Cleanouts in underfloor piping shall be extended to or above the finished floor or shall be extended outside the building when there is less than eighteen (18) inches vertical, and thirty (30) inches horizontal, crawl space clearance from the means of access to such cleanout. No underfloor cleanout in any residence shall be located more than twenty (20) feet from an access door, trap door or crawl hole.

F. RESIDENCE WITHOUT BASEMENT OR CRAWL SPACE. In a residence without a basement and with less than eighteen (18) inches of

crawl space under the first floor, an approved two-way cleanout, installed in the building drain outside the building and extending accessibly above ground, may be substituted for an upper terminal cleanout in such building drain. (Ord. 92190; July 9, 1963).

5.04.080 Grade of horizontal drainage piping. Horizontal drainage piping shall be run into practical alignment and at a uniform grade of not less than one-fourth (1/4) inch per foot, or two percent (2%), toward the point of disposal; provided, that where such is impracticable due to the depth of the sewer, or to structural features, or to the arrangement of any building or structure, then any such horizontal drainage piping, three (3) inches or larger in size, may have a grade of not less than one-eighth (1/8) inch per foot, or one percent (1%), when so approved. (Ord. 92190; July 9, 1963).

5.04.090 Gravity drainage. Wherever practicable, all plumbing fixtures shall be drained by gravity. (Ord. 92190; July 9, 1963).

5.04.100 Drainage below sewer level. A. PUMPING REQUIRED. Drainage piping from fixtures that are located below the crown level of the sewer serving such fixtures shall discharge into an approved watertight sump or receiving tank, so located as to receive the sewage or wastes by gravity. From such sump or receiving tank the sewage or waste shall be lifted and discharged into the building drain or sewer by approved ejectors, pumps, or other devices. The discharge line from such ejector, pump or device shall be provided with an accessible back water valve and gate valve, and if the gravity drainage line to which such discharge line connects is horizontal the method of connection shall be from the top through a wye branch fitting. The minimum size of such ejector, pump or device, or of any discharge piping, serving a sump or receiving tank to which a water closet is connected, shall be two (2) inches.

B. CONSTRUCTION OF SUMP. Such sumps and receiving tanks shall be constructed of concrete or metal. If constructed of concrete, the walls and bottom shall be not less than six (6) inches thick, plastered on the inside with cement plaster not less than one-half (1/2) inch thick. Metal sumps and receiving tanks shall be of such thickness as to serve the purpose for which they are intended, and shall be painted inside and outside with corrosion resisting paint.

C. COVER ON SUMP. Every such sump or receiving tank to which a water closet is connected, and other such sumps or receiving tanks as may be required, shall have an approved airtight cover equipped with a bolt and gasket type opening giving access to the sump or receiving tank for repair and cleaning. Every such cover shall be equipped with a vent large enough to maintain atmospheric pressure within the sump or receiving tank under all normal operating conditions, and in any case such

vent shall be not less than one and one-half (1½) inches in size. Such vent serving an air operated sewage ejector shall not be combined with any other vent.

D. DISCHARGE FROM SUMP. All such sumps and receiving tanks shall discharge automatically and when in a place of public use shall be provided with dual pumps or ejectors arranged to function independently in case of overload or mechanical failure. Air tanks serving sewage ejectors shall be of the same cubical capacity as the ejectors to which they are connected and there shall be maintained therein an air pressure of not less than two (2) pounds for each foot of height the sewage is to be raised. Water operated sewage ejectors are prohibited.

E. LOCATION OF MECHANICAL DEVICES. Backwater valves, gate valves, motors, compressors, air tanks or other mechanical devices required where drainage is below sewer level shall be located where they will be accessible for inspection and repair at all times, and, unless continuously exposed, shall be enclosed in a watertight masonry pit with an approved cover. (Ord. 92190; July 9, 1963).

5.04.110 Subsoil drainage. When subsoil drainage systems are installed beneath a building, they shall discharge into an approved sump or interceptor in an approved manner. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

Table No. 4-1
DRAINAGE SYSTEMS
Fixture Unit Equivalents
For Certain Fixtures

Fixture	Minimum Trap & Trap Arm Size (Inches)	Minimum Waste Size (Inches)	Units
Bathtub	1½	1½	2
Bidet	1½	1½	2
Dental unit or cuspidor	1¼	1¼	1
Drinking fountain	1¼	1¼	1
Floor drain	2	2	2
Interceptor for grease, oils, solids, etc.	2	2	3
Interceptor for sand, auto wash, etc.	3	3	6
Laundry tub or clotheswasher, resi- dential	1½	1½	2

Table 4-1

PLUMBING

Fixture	Minimum Trap & Trap Arm Size (Inches)	Minimum Waste Size (Inches)	Units
Laundry tub or clotheswasher, self-service laundry	1½	1½	2
Receptor, indirect waste receptor for refrigerator, coffee urn, water station, etc.	1¼	1¼	1
Receptor, indirect waste receptor for commercial sink, dishwasher, airwasher, etc.	2	2	3
Shower, single stall	1½	1½	2
Shower, gang	2	2	1/head
Sink, 12 x 18 or smaller	1½	1½	1
Sink, bar, commercial	1½	2	2
Sink, commercial, or industrial, schools, etc., including dishwasher, wash up sink and wash fountain	1½	2	3
Sink, flushing rim, clinic.....	3	3	6
Sink or dishwasher, residential ¹	1½	2	2
Sink, service	2	2	3
Urinal, pedestal	3	3	6
Urinal, stall	2	2	2
Urinal, wall	1½	2	2
Urinal, wall trough	1½	2	3
Wash basin, single	1¼	1¼	1
Wash basin, shampoo	1½	1½	2
Wash basins, in sets of two	1½	1½	2
Water closet	3	3	6

1. Double sink and dishwasher combinations roughed in back to back, in multiple housing living units may be counted as a four unit waste load. The standpipe for each dishwasher shall be individually trapped.

Table No. 4-2
DRAINAGE SYSTEMS
Fixture Unit Equivalents
Per Discharge Capacity

Discharge Capacity (Gallons per minute)	Fixture Units
0 - 7½	1
8 - 15	2
16 - 30	4
31 - 50	6
Over 50	As determined by the Director of Public Health

(

(

(

Table No. 4-3

DRAINAGE SYSTEMS
Maximum Unit Trap Loading

Trap Size (Inches)	Fixture Units
1¼	1
1½	3
2	4
3	6
4	8
Over 4	As determined by the Director of Public Health

Table No. 4-4

DRAINAGE SYSTEMS
**Minimum Size, Maximum Fixture Unit Loading and
Maximum Length of Drainage Piping**

Minimum Size of Drainage Piping ¹ (Inches)	Maximum Fixture Units (Number)	Maximum Length (Feet)	
		Vertical Piping	Horizontal Piping
1¼	1	65	Unlimited
1½	4 ²	65	"
2	8 ³	85	"
2½	14 ³	148	"
3	35 ⁴	212	"
4	180	300	"
5	256	390	"
6	600	510	"
8	2200	750	"
10	3900	—	"
12	6912	—	"

1. Except, in respect to a building drain which runs through an outer masonry foundation wall and to which a water closet is connected, the minimum size of that portion of such building drain passing through and outside such foundation wall shall be four (4) inches.

2. Except urinals and certain sinks per Table 4-1.

3. Except six-unit traps or fixtures.

4. Except: (a) No water closet allowed on any three (3) inch building drain located under a concrete slab on the ground; and, (b) not more than two (2) flush tanks or one (1) flush valve water closet allowed on any other three (3) inch drainage piping.

Chapter 5.05
VENTS AND VENTING

Sections:

- 5.05.010 Vents required.
- 5.05.020 Vents not required.
- 5.05.030 Vent pipe.
- 5.05.040 Vent fittings.
- 5.05.050 Changes in direction.
- 5.05.060 Size of vents.
- 5.05.070 Vent pipe grades and connections.
- 5.05.080 Vent termination.
- 5.05.090 Vent stacks and relief vents.

5.05.010 Vents required. (a) All fixture traps and all parts of every drainage system, except as otherwise specifically provided in this title, shall be protected by vents.

(b) In every building having a basement, unless fixtures requiring such a vent are installed therein, an extension of the main vent pipe at least two (2) inches in size shall be extended into the basement at a convenient point and left accessible for future use. (Ord. 92190; July 9, 1963).

5.05.020 Vents not required. A. INTERCEPTORS. A vent is not required on an interceptor when such interceptor acts as a primary settling tank and discharges through a horizontal indirect waste pipe into a secondary interceptor which is located within twenty-five (25) feet of the primary tank, but such secondary interceptor shall be trapped and vented.

B. TRAPS FOR BAR SINKS, ETC. Traps serving sinks which are part of the equipment of bars, soda fountains and counters, are not required to be vented when the location and construction of such bars, soda fountains and counters is such as to make it impracticable so to do. When such conditions exist, such sinks shall discharge by means of approved indirect waste pipes into a floor sink or other approved receptor.

C. TRAP CONNECTED TO INDIRECT WASTE PIPE. A vent is not required on a trap which is directly connected to an indirect waste pipe.

D. FLOOR DRAINS. Two or more floor drains may be connected to a single trap provided the distance between such floor drains shall be not more than ten (10) feet, and such drains may be served by a single vent. (Ord. 92190; July 9, 1963).

5.05.030 Vent pipe. Except as otherwise provided in this title, vent pipes shall be service weight cast iron, or galvanized steel, galvanized wrought iron, lead, copper or brass; except that no galvanized steel or galvanized wrought iron pipe shall be used underground and such pipe shall be kept at least six inches above ground. Hubless cast iron pipe is acceptable above ground level only in single family dwellings. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.05.040 Vent fittings. Except as otherwise provided in this title, vent fittings shall be service weight cast iron, or galvanized steel, galvanized malleable iron, lead, copper or brass, except that no galvanized steel or galvanized malleable iron fittings shall be used underground and such fittings shall be kept at least six inches above ground. Hubless cast iron fittings are acceptable above ground only in single family dwellings. (Ord. 92190 as amended by Ord. 95168; Oct. 6, 1966).

5.05.050 Changes in direction. Changes in direction of vent piping shall be made by the use of approved fittings and no such pipe shall be strained or bent. Vertical vent connections may be taken from the top side of horizontal drainage pipes by using short turn tee-wye fittings. Burred ends shall be reamed to the full bore of the pipe. (Ord. 92190; July 9, 1963).

5.05.060 Size of vents. (a) The minimum size, maximum length, and maximum fixture unit loading of vent piping shall be as determined from Table 5-1, which is hereby adopted. In addition, every drainage system and every building drain shall be vented by means of one or more vents, the aggregate cross-sectional area of which shall be not less than the aggregate cross-sectional area of the required building drain, as determined from Table 4-4, for such drainage system.

(b) Where water closets or similar fixtures are installed there shall be at least one three-inch vent extending full size through the roof of the building served.

(c) When connected to a common sewer, the drainage piping of two or more buildings on the same lot and under the same ownership may be vented as determined from Table 5-1, provided that the aggregate cross-sectional area of all the vents is not less than the aggregate cross-sectional area of all the building drains required for all such buildings.

(d) **Venting Multiple Building Drains in Same Building.** When more than one building drain from the same building is connected to the same common side sewer for the building, the vent piping extending through the roof from the multiple building drains need only meet the cross-sectional area of the size required for building drains in accordance with the total waste load as determined from Table 4-4 for such drainage system. (Ord. 92190 as amended by Ord. 95168; Oct. 6, 1966).

5.05.070 Vent pipe grades and connections. (a) Every vent shall be free from drops or sags, and shall be level or so graded and connected as to drip back by gravity to the drainage pipe it serves. Every vent connected to a horizontal drainage pipe shall be taken off above the center line of such pipe ahead of the trap served. Unless impracticable due to structural conditions, every vent shall rise vertically to a point not less than six inches above the flood level rim of the fixture it serves before

offsetting horizontally, and whenever two or more vents converge, each such vent shall rise to a point at least six inches in height above the top of the fixture it serves before being connected to any other vent.

(b) Except for water closets and similar fixtures, the vent pipe opening in a drainage pipe serving a fixture trap shall not be below the weir of such trap.

(c) Two like fixtures set back to back may both be served by a single vertical vent required for one such fixture, provided that each such fixture discharges separately into an approved double fitting with inlet opening at the same level.

(d) Groups or rows of wall hung toilets or urinals or combination of such fixtures shall be vented individually. On a horizontal soil line the individual vent for each fixture shall be an integral part of each carrier fitting. The vent may be taken off from the top horizontal center flow line of the carrier fitting not more than fifteen inches from face of carrier.

Wall hung toilets or urinals installed back to back on a horizontal soil line with a dual inlet carrier fitting may be served by a single vent serving both fixtures. The vent on the dual inlet carrier fitting may be taken off from the top horizontal center flow line of the carrier fitting and not more than fifteen inches from the beginning of the vent to the face of the carrier. (Ord. 92190 as amended by Ord. 98593 § 6; Feb. 11, 1970).

5.05.080 Vent termination. (a) Every vent shall extend, or shall be connected to another vent which extends, through a flashing in the roof of the building served, and terminates vertically not less than ten inches above the roof, and not less than one foot from any vertical surface.

(b) Every vent shall terminate not less than two feet above or ten feet from, any window, door, opening, air intake, or vent shaft, and not less than ten feet from the line of any property which may be built upon.

(c) Flagpoling of vents is prohibited except where the roof is used for purposes other than weather protection. In such case the vent shall extend not less than seven feet above the roof and shall be securely stayed.

(d) Joints at the roof around vent pipes shall be made watertight by the use of approved lead flashings. The base of flashings for vents two inches or less in size shall be not less than ten inches by twelve inches. The base of flashings for vents more than two inches, but not more than four inches in size shall be not less than fourteen inches by fourteen inches. The base of flashings for vents over four inches in size shall extend at least six inches from all sides of the pipe. (Ord. 92190 as amended by Ord. 95168 and Ord. 98593 § 7; Feb. 11, 1970).

5.05.090 Vent stacks and relief vents. Each drainage stack which extends ten or more stories above a building drain or other horizontal

drain shall be served by a parallel relief vent stack which shall extend undiminished in size from its upper terminal downward and connect to the drainage stack at or immediately below the lowest fixture branch. Each such relief vent shall also be connected to the drainage stack at each fifth floor below the uppermost fixture branch by means of a yoke vent, the size of which shall be not less than either the drainage or the vent stack, whichever is the smaller. The intersection of such yoke vent with the vent stack shall be by means of an inverted wye branch fitting placed not less than four feet above the floor level, and the yoke vent intersection with the drainage stack shall be by means of a wye branch fitting placed below the fixture branch serving such floor. (Ord. 92190 as amended by Ord. 95168; Oct. 6, 1966).

(

(

(

Table No. 5-1

VENTS

**Minimum Size, Maximum Fixture Unit Loading and
Maximum Length of Vent Piping**

Minimum Size ¹ of Vent Piping (Inches)	Maximum Fixture Units (Number)	Maximum Length (Feet) Vertical and Horizontal Piping
1¼	1	45
1½	8	60
2	24	120
2½	48	180
3	84	212
4	256	300
5	600	390
6	1380	510
8	3600	750

1. The minimum size of individual vents shall be determined by the size of the trap served as follows:

Trap Size (Inches)	Vent Size (Inches)
1¼	1¼
1½	1½
2	2 ²
2½	2
3	2
4	2
Over 4	Not less than one-half (½) the size of the trap

2. 1½ inches serving a 2-inch floor drain only.

Chapter 5.06

INDIRECT AND SPECIAL WASTES

Sections:

- 5.06.010 Food storage and preparation.
- 5.06.020 Prior approval.
- 5.06.030 Indirect waste piping.
- 5.06.040 Indirect waste receptors.
- 5.06.050 Pressure drainage.
- 5.06.060 Sterile equipment.
- 5.06.070 Appliances.
- 5.06.080 Cooling water.

5.06.010—5.06.040 PLUMBING

- 5.06.090 Drinking fountains.
- 5.06.100 Steam and hot water drainage condensers and sumps.
- 5.06.110 Chemical wastes.
- 5.06.120 Vertical wet venting.
- 5.06.130 Special venting for island fixtures.
- 5.06.140 Combination waste and vent systems.
- 5.06.150 Parking garage drainage systems.

5.06.010 Food storage and preparation. No evaporative cooler, air washer or similar air conditioning equipment and no cold storage room, refrigerator, cooling counter or other refrigerated equipment or device used, or intended to be used, for the storage or holding of food or beverages shall have any drain pipe therefrom directly connected to any soil, waste or vent pipe. Such equipment shall be drained by indirect waste piping which shall terminate at least one inch above the overflow rim of an open floor sink or other approved receptor directly connected to a drainage system. The foregoing shall not apply to any dishwashing or culinary sink in any food preparation room unless such sink is used for soaking or washing ready-to-serve food. (Ord. 92190; July 9, 1963).

5.06.020 Prior approval. No installation served by indirect waste pipes, or receiving the discharge from indirect waste pipes, shall be made without prior approval by the director of public health. (Ord. 92190; July 9, 1963).

5.06.030 Indirect waste piping. Indirect waste piping need not be larger than the size of the drain outlet or tailpiece of the fixture, appliance, equipment or device which it serves provided that in no case shall it be less than one-half inch. No indirect waste pipe shall be more than fifteen feet in length. Any indirect waste pipe more than four feet in length shall be trapped, but such traps need not be vented. (Ord. 92190; July 9, 1963).

5.06.040 Indirect waste receptors. All receptors receiving the discharge from indirect waste piping shall be of such shape and capacity as to prevent splashing or flooding and shall be so located as to be readily accessible for inspection and cleaning. Every standpipe receptor for a clotheswasher shall extend not more than thirty inches, and not less than eighteen inches, above its trap. Every trap for a clotheswasher standpipe receptor shall be installed not less than six inches, and not more than eighteen inches, above the floor. Indirect waste receptors shall not be installed in any toilet room, or in any closet, cupboard, storeroom or other portion of a building not in general use, provided, that clotheswasher standpipes may be installed in a toilet room when the clotheswasher is installed in the same room. (Ord. 92190; July 9, 1963).

INDIRECT AND SPECIAL WASTES 5.06.050—5.06.100

5.06.050 Pressure drainage. Drains, overflows or relief vents from a water supply system shall discharge by means of indirect waste connections. No piping or equipment carrying or producing discharges under pressure, except an approved sump pump or an approved pressure wasting fixture or device, shall be directly connected to a drainage system. (Ord. 92190; July 9, 1963).

5.06.060 Sterile equipment. Stills, sterilizers and similar equipment requiring water and waste and used for sterile materials shall be indirectly connected with an air gap between such equipment and its trap. (Ord. 92190; July 9, 1963).

5.06.070 Appliances. Appliances, equipment or devices, other than plumbing fixtures but having discharge pumps, drips or drainage outlets, may discharge through indirect waste piping into an approved open receptor. No dishwashing machine shall be directly connected to a drainage system unless backflow is positively prevented in a manner approved by the Director of Public Health. (Ord. 92190; July 9, 1963).

5.06.080 Cooling water. When approved, clean running water used exclusively as a cooling agent may discharge through indirect waste piping into a standpipe receptor installed on the inlet side of a trap serving an adjacent fixture, provided that the top of such receptor is not less than six (6) inches above the flood level rim of such fixture. (Ord. 92190; July 9, 1963).

5.06.090 Drinking fountains. Drinking fountains may have indirect wastes. (Ord. 92190; July 9, 1963).

5.06.100 Steam and hot water drainage condensers and sumps. (a) No steam pipe shall connect to any part of a plumbing or drainage system. No water having a temperature above one hundred and forty degrees Fahrenheit (140° F.) shall be discharged into any drainage system. Steam pipes or pipes carrying water the temperature of which is over one hundred forty degrees Fahrenheit (140° F.) may be indirectly connected by discharging into an open or closed condenser, or intercepting sump of approved type, that will prevent the entrance of steam or water under pressure into the drainage system. All closed condensers or sumps shall be provided with a relief pipe not less than one (1) pipe size larger than the largest inlet, which relief pipe shall be taken off the top and extend separately full size above the roof. All condensers and sumps shall be trapped at the outlet with a deep seal trap and the trap vented. Outlets shall be taken off from the side in such manner as to allow a water line to be maintained that will permanently occupy not less than two-thirds ($\frac{2}{3}$) the capacity of the condenser or sump. All inlets shall enter above the water line, and the outlet size shall be not less than one (1) pipe size larger than the largest inlet. The contents of condensers receiving steam or hot

water under pressure shall pass through an open sump before entering the drainage system. Such sumps and condensers shall be so sized and designed as to control the temperature of the effluent at or below one hundred forty degrees Fahrenheit (140° F.) and shall be provided with suitable means of access for cleaning.

(b) Sumps, condensers or intercepting tanks in connection with steam and hot water drainage which are constructed of concrete shall have walls and bottom not less than four (4) inches in thickness, and the inside shall be cement plastered not less than one-half (½) inch in thickness. Such condensers constructed of metal shall be not less than No. 12 U.S. Standard gauge (.109") and all such metal condensers shall be protected from external corrosion by an approved bituminous coating. (Ord. 92190; July 9, 1963).

5.06.110 Chemical wastes. (a) Chemical wastes shall be passed through a dilution tank or otherwise treated, so as to render them innocuous prior to discharge into a drainage system. Detailed plans of facilities for treating chemical wastes may be required.

(b) Chemical waste piping conveying chemical wastes from their point of origin to treatment facilities, except in such minor installations as small photographic or X-ray darkrooms or small research or control laboratories, and vent pipes connected thereto, shall be high silicon iron pipe or lead pipe of not less than one-eighth inch wall thickness, provided that approved glass pipe and fittings of glass epoxy resin, polyethylene or polypropylene materials may be used above ground only, and provided that extra heavy cast iron pipe and fittings may be used for vent piping which is eighteen inches or more above any chemical sink. Only approved jointing materials shall be used. All chemical waste piping shall be installed with a maximum clearance from other services, and wherever practicable, shall be accessible. Chemical vents shall not intersect vents for other services. (Ord. 92190, as amended by Ord. 95168 and Ord. 96281; November 29, 1967).

5.06.120 Vertical wet venting. In a residence, two (2) fixtures having a discharge rating of not more than two (2) fixture units each, set on the same floor level and both of which rough in above the floor, or both of which rough in below the floor, may be served by a vertical wet vent one (1) pipe size larger than its upper fixture inlet, or not smaller than its lower fixture inlet, whichever is the larger. The developed length between such fixture inlets shall be not more than five (5) times the diameter of such wet vent. Identical fixtures installed back to back shall have their fixture inlets at the same level. (Ord. 92190; July 9, 1963).

5.06.130 Special venting for island fixtures. Island sinks and similar fixtures may be served by an approved drum trap and relief vent, or traps for such fixtures may be vented by extending the vent as high as practicable, but not less than the drainboard height, and then returning it downward and connecting it to the horizontal sink drain immediately down-

stream from the vertical fixture drain. Such returning vent shall be connected to the horizontal drain through a wye branch fitting and the horizontal drain shall then be continued full size to a wall where it shall be vented full size. Drainage fittings shall be used on all parts of such vent below the floor level and a minimum slope of one-quarter inch per foot back to the drain shall be maintained. The return bend used under the drainboard shall be a one piece fitting or an assembly of a forty-five degree, a ninety degree, and a forty-five degree elbow, in the order named. (Ord. 92190; July 9, 1963).

5.06.140 Combination waste and vent systems. A. WHEN PERMITTED. Combination waste and vent systems may be used where structural conditions make impracticable the installation of drainage and vent piping as otherwise required, provided that the plan for any such system shall be approved before installation.

B. SIZE OF WASTE PIPE. Every trap three inches or less in size in a combination waste and vent system shall be served by a waste pipe at least one inch larger in size than the waste pipe otherwise required for such trap. Every trap four inches or more in size in a combination waste and vent system shall be served by a waste pipe one pipe size larger than the waste pipe otherwise required for such trap.

C. VERTICAL WASTE PIPE. Unless specifically approved or required by the director of public health, no vertical waste pipe shall be used in any combination waste and vent system except the tailpiece or connection between a fixture and its trap.

D. VENTS. Every branch in a combination waste and vent system more than fifteen feet in length shall be separately vented. The cross-sectional area of any vent installed in a combination waste and vent system shall be not less than one-half the cross-sectional area of the waste pipe served.

E. CLEANOUTS. Cleanouts are not required in any branch of a combination waste and vent serving a single fixture trap when the fixture tailpiece or connection is two inches or more in size and there is ready access for cleaning through the trap. (Ord. 92190; July 9, 1963).

5.06.150 Parking garage drainage systems. All floor drainage under the roof of a parking garage shall be connected to the sanitary drainage system. When the top floor of the building is used as a roof as well as a parking area, the drainage from the roof shall be connected to the storm drainage system. Drainage from conventional plumbing fixtures shall not be interconnected with the floor drainage system; provided, however, drainage lines from car or truck washing equipment may be connected to the floor drainage system through an approved interceptor. Waste pipe sizing shall be in accordance with Tables 4-3 and 4-4 of the Plumbing Code.

5.07.010 PLUMBING

Waste lines shall be a minimum of three inches in size. Floor drains or floor drain openings shall be equipped with approved strainers and need not be trapped when connected to the building drain through a properly trapped and vented interceptor. Traps should not be used when the floor drains are located in areas exposed to freezing temperature or outside atmosphere. Relief venting of the upstream end of an indirect floor drainage system without traps is not required. Interceptors located in areas not open to outside or mechanical ventilation shall be covered and equipped with a local vent. The local vent shall be connected to the plumbing venting system or terminate in the outside atmosphere. The waste line from floor drains entering the interceptor shall be above the waste line discharging from the interceptor to the building drain. Both entering and discharging waste lines in the interceptor shall have a water seal of at least six inches. Floor drain traps need not be vented individually if line venting is used through an indirect waste system with a properly trapped and vented interceptor. A line vent for floor drains shall terminate through the roof or to outside atmosphere. When using line venting, the terminating vents, if more than one, shall be equal in cross-sectional area to the size of the waste line entering the interceptor or the line vent may continue full size from the interceptor to the point of termination. All plans for parking garage floor drainage systems shall be submitted to the director of public health prior to installation for approval. (Ord. 92190; as added by Ord. 98593 § 8; Feb. 11, 1970).

Chapter 5.07

TRAPS AND INTERCEPTORS

Sections:

- 5.07.010 Traps required.
- 5.07.020 Trap vents.
- 5.07.030 Approved traps.
- 5.07.040 Prohibited traps.
- 5.07.050 Trap seals.
- 5.07.060 Floor drain traps.
- 5.07.070 Trap seal protection.
- 5.07.080 Interceptors.
- 5.07.090 Slaughter houses, packing plants.
- 5.07.100 Auto wash racks and lubrication rooms.
- 5.07.110 Food disposal units.

5.07.010 Traps required. A. **FIXTURES.** Every plumbing fixture, except as otherwise provided in this title, shall have an integral trap, or shall be separately trapped by an approved water seal trap.

B. **SINKS AND LAVATORIES.** One trap may serve a set of not more than two single compartment sinks or laundry tubs or two lavator-

ies, immediately adjacent to each other and in the same room, if their outlets are not more than thirty inches apart and are connected by a continuous waste or a double wye fitting.

C. FOOD WASTE DISPOSAL UNIT. No food waste disposal unit shall be installed with any set of restaurant, commercial or industrial sinks served by a single trap. Each such food waste disposal unit shall be connected to a separate trap.

D. LAUNDRY TUBS AND CLOTHESWASHERS. Every laundry tub and every domestic clotheswasher shall be connected to a separate and independent trap, except that a trap serving a laundry tub may also receive the waste from a clotheswasher set adjacent thereto. No laundry tub or clotheswasher shall be connected to any trap for a kitchen sink.

E. DISHWASHER. The waste from a domestic dishwashing machine and the waste from a one compartment sink may be connected to a common trap if the waste connection from the dishwashing machine is made through an air gap which is higher than the flood level rim of the sink and into a standpipe which is connected to the fixture side of the sink trap.

F. VERTICAL DISTANCE BETWEEN TRAP WEIR AND FIXTURE OUTLET. The vertical distance between a fixture outlet and the weir of its trap shall be as short as practicable. (Ord. 92190; July 9, 1963).

5.07.020 Trap vents. (a) Every trap, except as otherwise provided in this title, shall be protected by a vent. Every such vent shall be so located that the developed length of the trap arm or its equivalent shall be not more than a distance from trap to vent as set forth in Table 7-1, which is hereby adopted. Openings in drainage piping for such vents, except for water closets and similar fixtures, shall not be below the weir of the trap.

(b) A trap arm may change direction without the use of a cleanout.

(

(

(

when such change of direction is accomplished by the use of not more than two (2) forty-five degree (45°) fittings, or one (1) ninety degree (90°) fitting, of approved sweep. (Ord. 92190; July 9, 1963).

5.07.030 Approved traps. (a) Every trap, except a trap for an interceptor or similar device, shall be self-cleaning. Traps for bathtubs, showers, lavatories, sinks, laundry tubs, floor drains, hoppers, urinals, drinking fountains, dental units and similar fixtures shall be of approved design and weight, and shall be of lead, cast iron, cast brass, or drawn brass tubing. Such drawn brass tubing shall be not less than No. 17 Brown and Sharpe Gauge (.0432") in thickness, and the gauge shall be legibly stamped thereon. The manufacturer's name shall be legibly stamped on every trap. Every trap shall have a smooth and uniform interior waterway.

(b) No slip joint on any trap shall be located below the level of the trap weir. Every union joint for a trap shall be located in the water seal of the trap, and every such union joint shall be a tight ground metal to metal joint. No slip joint shall be used on the outlet side of any trap, provided that a tubing trap may be connected to its trap arm by means of an approved ground joint or sweat type hexagonal adapter fitting.

(c) The size of each fixture trap shall be such as to drain the fixture rapidly, but in no case less than as set forth in Table 4-1. No trap shall be larger than the trap arm to which it is connected. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.07.040 Prohibited traps. No trap which depends for its seal upon the action of movable parts, and no trap with concealed interior partitions, shall be used. Full "S" traps are prohibited. Bell traps are prohibited. Crown-vented traps are prohibited. No fixture shall be double trapped. Drum traps are prohibited except as specifically approved. (Ord. 92190; July 9, 1963).

5.07.050 Trap seals. Every fixture trap shall have a water seal of not less than two (2) inches or more than four (4) inches, provided that a deeper seal may be required by the Director of Public Health for special conditions. Traps shall be set true with respect to their water seals, and where required by the Director of Public Health shall be protected from freezing. (Ord. 92190; July 9, 1963).

5.07.060 Floor drain traps. Floor drains shall connect into a trap which is readily accessible for cleaning and of such size as to effectively serve its purpose. Every floor drain inlet shall be so located as to be in full view at all times. (Ord. 92190; July 9, 1963).

5.07.070 Trap seal protection. There shall be means for maintaining the water seal in floor drain or similar traps directly connected to a drainage system and subject to evaporation due to infrequent use, except as otherwise specifically approved. (Ord. 92190; July 9, 1963).

5.07.080 Interceptors. An approved interceptor may be required for the handling of liquid wastes containing oil, grease or other flammables, sand, solids, acid or alkaline substances, or other ingredients which may be harmful to a drainage system. Except as otherwise specifically approved, no wastes other than those to be treated or separated shall be discharged into any interceptor. Interceptors shall be so designed as not to become air bound if closed covers are used, and so installed as to be readily accessible for cleaning and maintenance. Interceptors for sand and similar solids shall have a water seal of not less than six (6) inches. (Ord. 92190; July 9, 1963).

5.07.090 Slaughter houses, packing plants. The Director of Public Health may require that fish, fowl or animal slaughter houses, and fish, fowl or meat packing or curing plants, and soap factories, tallow rendering, fat rendering or hide curing plants, or similar establishments, be drained into an approved grease interceptor. (Ord. 92190; July 9, 1963).

5.07.100 Auto wash racks and lubrication rooms. Every private or public auto wash rack, or floor or slab used for cleaning machinery or machine parts, shall be drained into an approved sand and grease interceptor. Floor drainage in lubrication rooms of service stations and garages shall be provided with an approved interceptor (Ord. 92190, as amended by Ord. 96281; November 29, 1967).

5.07.110 Food disposal units. No food waste disposal unit, except as otherwise specifically approved, shall discharge into any interceptor. (Ord. 92190; July 9, 1963).

Table No. 7-1

MAXIMUM HORIZONTAL LENGTH OF TRAP ARMS'

[Slope one-fourth ($\frac{1}{4}$) inch per foot]

Size of Trap Arm (Inches)	Distance Trap to Vent	
	(Feet)	(Inches)
1 $\frac{1}{4}$	2	6
1 $\frac{1}{2}$	3	6
2	5	0
3	6	0
4 and larger	10	0

1. The developed length, measured along the center line of the drainage piping from top center of floor flange to inner edge of vent, between the trap of a water closet or similar fixture and its vent shall not exceed four (4) feet.

CHAPTER 5.08

JOINTS AND CONNECTIONS

Sections:

- 5.08.010 Joints.
- 5.08.020 Types of joints.
- 5.08.030 Use of joints.
- 5.08.040 Slip joints.
- 5.08.050 Expansion joints.
- 5.08.060 Unions.
- 5.08.070 Fixture connections.
- 5.08.080 Increasesers or reducers.
- 5.08.090 Prohibited joints and connections.

5.08.010 Joints. Joints and connections shall be gas tight and water-tight. The addition of leak sealing additives to joint packing is prohibited. (Ord. 92190; July 9, 1963).

5.08.020 Types of joints. A. **CALKED JOINTS.** Calked joints shall be firmly packed with oakum or hemp and filled with molten lead to a depth of not less than one inch and the lead shall be calked at the inside and outside edges of the joint as required. Such joints when finished shall not extend more than one-eighth inch below the rim of the hub. No paint, varnish or other coating shall be used on any jointing material until after the joint has been approved.

B. **THREADED JOINTS.** Threaded joints shall be made with pipe and fittings with approved threads. The ends of threaded pipe shall be reamed or filed to full bore, and all burrs and chips shall be removed. If a joining material is used, it shall be applied only on male threads, and shall be insoluble in water and nontoxic. Cleanout plugs and caps shall be lubricated with a water insoluble, nonhardening material.

C. **WIPED JOINTS.** Wiped joints shall have an exposed surface on each side, not less than three-fourths inches in thickness, and at least as thick as the material being jointed. Wall or floor flange wiped joints shall be made by using a lead ring or flange placed behind the joint at wall or floor.

D. **SOLDERED OR SWEAT JOINTS.** Soldered or sweat joints shall be made with approved fittings. Surfaces to be soldered shall be cleaned bright by manual or mechanical means. Such joints shall be fluxed with an approved noncorrosive flux and made up with approved solder.

E. **FLARED JOINTS.** Flared joints shall be made with approved fittings, and the tubing shall be expanded with an approved flaring tool.

F. **BURNED LEAD JOINTS.** Burned lead joints shall be lapped and the lead shall be fused together to form a uniform weld at least as thick as the lead being joined. (Ord. 92190; July 9, 1963).

5.08.030 PLUMBING

5.08.030 Use of joints. (a) **CAST IRON TO CAST IRON.** Joints in cast iron piping shall be caulked joints except that approved neoprene or similar elastic gaskets may be used, provided that: (1) The piping shall be manufactured to close tolerances and without beads on the spigot ends; (2) Hubs shall be modified to receive the gaskets; (3) Gaskets shall be capable of maintaining a tight seal; and (4) Joints shall be assembled by means of special tools.

(b) **CAST IRON TO WROUGHT IRON, STEEL, COPPER OR BRASS.** Joints between cast iron pipe and wrought iron, steel, copper or brass pipe shall be caulked joints, or shall be threaded joints made by use of approved adapter fittings.

(c) **LEAD TO LEAD, COPPER OR BRASS.** Joints in lead piping, or between lead pipe and copper or brass pipe, caulking ferrules, soldering nipples or traps shall be wiped joints.

(d) **LEAD TO CAST IRON.** Joints between lead pipe and cast iron pipe shall be made by using approved caulking ferrules. In such joints, the connection between the lead pipe and the ferrule shall be a wiped joint, and the connection between the ferrule and the cast iron pipe shall be a caulked joint.

(e) **LEAD TO WROUGHT IRON OR STEEL.** Joints between lead pipe and wrought iron or steel pipe shall be made by using approved soldering nipples. In such joints, the connection between the lead pipe and the soldering nipple shall be a wiped joint, and the connection between the fitting and the wrought iron or steel pipe shall be a threaded joint.

(f) **COPPER TUBING.** Joints in copper tubing shall be soldered, sweat or flared joints.

(g) **COPPER TUBING TO THREADED PIPE.** Joints between copper tubing and threaded pipe shall be made by using approved adapter fittings. In such joints, the connection between the tubing and the fitting shall be a soldered, sweat, or flared joint, and the connection between the fitting and the pipe shall be a threaded joint.

(h) **COPPER TUBING TO CAST IRON PIPE.** Joints between copper tubing and cast iron pipe and fittings shall be made with the proper copper adapter fittings.

(i) **JOINING NO HUB CAST IRON PIPE AND FITTINGS.** (1) Stainless steel clamps of a type approved by the director of public health may be used when ends of pipe and fittings to be joined are firmly seated against separator ring in neoprene gasket. Cut pipe smooth and square and tighten stainless steel clamps alternately and firmly on pipe and fittings to about four foot pounds torque. Stainless steel clamps used in joining hubless cast iron waste and vent piping are approved in single family dwellings above ground level.

(2) Cast iron mechanical clamp joints of a type approved by the director of public health may be used for joining no hub cast iron soil pipe and fittings in any type occupancy, above or below ground. (IAPMO Approval-Application No. 4421 file No. 761 (1969) Morris no hub Cast Iron Coupling).

(j) JOINING HIGH SILICON IRON AND EPOXY RESIN PIPE AND FITTINGS. A stainless steel clamp joint may be used with a neoprene and teflon joint seal of a type approved by the director of public health for use in chemical waste and vent systems only. The stainless steel clamp joint is approved for above ground chemical waste and vent systems only.

(k) GALVANIZED STEEL PIPE TO GALVANIZED STEEL PIPE. Galvanized steel (A.S.T.M. 120) pipe to galvanized steel pipe may be joined with approved mechanical pipe joints (Victaulic type joints) in drain, waste and vent or storm drainage systems above ground. Type of fittings used shall conform with other sections of the Plumbing Code applicable to the installation of waste and vent systems. (Ord. 92190 as amended by Ord. 92556, Ord. 95168, Ord. 97361 and Ord. 98593 § 9; Feb. 11, 1970).

5.08.040 Slip joints. A. DRAINAGE PIPING. In drainage piping, slip joints may be used only on the inlet side of a trap, and in water piping only on an exposed fixture supply.

B. BRASS OR COPPER. Brass or copper ground joint, flared or ferrule type connections which allow adjustment of water tubing, but provide a rigid joint when made up shall not be considered as slip joints. (Ord. 92190; July 9, 1963).

5.08.050 Expansion joints. Expansion joints may be used where piping may be subject to expansion and contraction, but such joints shall be accessible. (Ord. 92190; July 9, 1963).

5.08.060 Unions. Approved threaded, ground joint, metal to metal seat unions may be used anywhere in water supply piping; anywhere in vent piping except underground or in wet vents; and in drainage piping, when accessibly located in a trap seal or between a fixture and its trap. Such unions shall be installed in a water supply system within twelve inches of any regulating device, water heater, conditioning tank or similar equip-



ment, the ready removal of which may facilitate repair or replacement. (Ord. 92190; July 9, 1963).

5.08.070 Fixture connections. Connections between drainage piping and water closets or similar fixtures shall be made by using an approved copper, brass, hard lead or iron flange. The connection between such drainage piping and flange shall be a calked, threaded, or soldered joint, and the connection between such flange and fixture shall be bolted, with an approved gasket, washer or setting compound between the fixture and the flange. The bottom of such flange shall be set on top of the finished floor on an approved firm base and any closet bend or stub shall be cut off so as to present a smooth surface even with the top of the closet ring. (Ord. 92190; July 9, 1963).

5.08.080 Increases or reducers. Where piping of different sizes is to be connected, approved increasing or reducing fittings shall be used. Brass or cast iron cleanout fittings shall not be used as reducers or adapters from cast iron soil pipe to wrought iron or steel pipe. (Ord. 92190; July 9, 1963).

5.08.090 Prohibited joints and connections. No fitting or connection which has an enlargement, chamber or recess, with a ledge, shoulder or reduction of pipe area, or that offers an abnormal obstruction to flow, shall be used in a drainage system. The enlargement of a three inch closet bend or stub to four inches is not such an obstruction. (Ord. 92190 as amended by Ord. 98593 § 10; Feb. 11, 1970).

Chapter 5.09

PLUMBING FIXTURES

Sections:

- 5.09.010 Quality of fixtures.
- 5.09.020 Overflows.
- 5.09.030 Strainers.
- 5.09.040 Connections.
- 5.09.050 Prohibited fixtures.
- 5.09.060 Specialties.
- 5.09.070 Installation of fixtures.
- 5.09.080 Urinals.
- 5.09.090 Floor drains and shower stalls.
- 5.09.100 Plumbing fixtures required.
- 5.09.110 Industrial tanks.

5.09.010 Quality of fixtures. A. SMOOTH SURFACE. Plumbing fix-

tures shall have smooth impervious surfaces, shall be free from defects and concealed fouling surfaces, and shall be of approved quality and design.

B. THICKNESS. The minimum thickness of any stainless steel or nickel alloy plumbing fixtures shall be No. 20 U.S. Gauge.

C. MATERIALS. Special use fixtures may be of soapstone or chemical stoneware, or may be lined with lead, copper-base alloy, nickel-copper alloy, corrosion-resistant steel or other materials suitable to the use for which such fixture is intended.

D. SHEET STEEL SINKS. Restaurant kitchen and similar sinks may be made of approved bonderized and galvanized sheet steel of not less than No. 16 U.S. Gauge. All sheet metal fixtures shall be constructed and installed in an approved manner. (Ord. 92190; July 9, 1963).

5.09.020 Overflows. When any fixture is provided with an overflow, the waste piping shall be so arranged that water in a fixture cannot rise in the overflow when the stopper is closed, or remain in the overflow when the fixture is empty. The overflow from a flush tank shall discharge into the water closet or urinal which it serves, and the overflow from any other fixture shall discharge into the inlet side of the trap serving such fixture, and it is unlawful to connect any overflow with any other part of a drainage system. (Ord. 92190; July 9, 1963).

5.09.030 Strainers. All plumbing fixtures, other than water closets and siphon action washdown or blowout urinals, shall be provided with approved strainers having an approved waterway area. (Ord. 92190; July 9, 1963).

5.09.040 Connections. A. ACCESS PANEL. Where required by the director of public health fixtures having concealed slip joint connections shall be provided with an access panel or utility space at least twelve inches in its least dimension and so arranged without obstruction as to make such connections accessible for inspection and repair.

B. TAILPIECE, CONTINUOUS WASTE OR WASTE AND OVERFLOW. Where exposed or accessible, a fixture tailpiece, continuous waste or waste and overflow may be of seamless drawn brass not less than No. 20 Brown and Sharpe Gauge (.032 inch) in thickness. The size of each such tailpiece, continuous waste or waste and overflow for sinks, dishwashers, laundry tubs, bathtubs, urinals and similar fixtures shall be not less than one and one-half inches, and for lavatories, drinking fountains and similar small fixtures shall be not less than one and one-quarter inches.

C. WYE BRANCH FITTINGS. Approved wye or other directional type branch fittings shall be installed in all continuous wastes receiving

the discharge from food waste disposal units, dishwashers, clotheswashers or other force discharge fixtures or appliances.

D. **DISHWASHER DRAIN.** No dishwasher drain shall be connected to a sink tailpiece, continuous waste or trap on the discharge side of a food waste disposal unit.

E. **DISHWASHER WASTE.** The waste from a domestic dishwashing machine may discharge through an indirect waste into a standpipe receptor installed on the inlet side of a trap serving an adjacent one compartment sink, provided that the top of such receptor is higher than the overflow of such sink.

F. **CLOTHESWASHER WASTE.** The waste from a domestic clothes-washer may discharge through an indirect waste into a standpipe receptor installed on the inlet side of a trap serving an adjacent laundry tub, provided that the top of such receptor is higher than the overflow of such laundry tub. (Ord. 92190; July 9, 1963).

5.09.050 Prohibited fixtures. (a) Pan, valve, plunger, offset, washout, latrine, frostproof and other water closets having an invisible seal or an unventilated space or having walls which are not thoroughly washed at each discharge are prohibited. Any water closet which might permit siphonage of the contents of the bowl back into the tank is prohibited. Drinking fountains shall not be installed in toilet rooms.

(b) Wooden, concrete, cement or tile wash trays, laundry tubs or sinks for domestic use shall not be installed in any building designed or used for human habitation. No sheet metal lined wooden bathtub shall be installed or reconnected. No dry or chemical closet shall be installed in any building used for human habitation, unless specifically approved by the Director of Public Health, provided that dry or chemical closets may be installed for emergency use in fall-out shelters. (Ord. 92190; July 9, 1963).

5.09.060 Specialties. Plans for specialties requiring water or waste connection shall be approved before installation. Water supplied baptistries, aquaria, ornamental and lily ponds, ornamental fountain basins and similar installations shall be protected against back-siphonage. (Ord. 92190; July 9, 1963).

5.09.070 Installation of fixtures. (a) **CLEANING.** Plumbing fixtures shall be installed so as to be accessible for repair and cleaning. Where practicable, all pipes from fixtures shall be run to the nearest wall.

(b) **JOINTS.** Where a fixture comes in contact with a wall or floor, the joint shall be watertight.

(c) **FLOOR OUTLET FIXTURES.** Floor outlet fixtures shall be rigidly secured to the floor by approved noncorrosive screws or bolts.

(d) **WALL-HUNG FIXTURES.** Wall-hung fixtures shall be rigidly

supported by metal supporting members so that no strain is transmitted to the connections. Flush tanks and similar appurtenances shall be secured by approved noncorrosive screws and bolts.

(e) **SETTING.** Fixtures shall be set level and in alignment with adjacent walls. No water closet or urinal shall be set closer than fifteen inches from its center to the nearest side wall or partition, or closer to any other water closet than thirty inches, measured center to center. Water closets for public use shall have open front seats.

(f) **WATER SUPPLY FITTINGS.** Water supply lines and fittings for every plumbing fixture shall be so installed as to prevent backflow. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

5.09.080 Urinals. A. BACKFLOW PREVENTION. Every water supply to a urinal shall be protected by an approved type vacuum breaker or other approved backflow prevention device.

B. FLUSH TANKS. Tanks flushing more than one (1) urinal shall be automatic in operation and of sufficient capacity to provide the necessary volume to flush and properly cleanse all urinals simultaneously. Automatically controlled flushometer valves may be substituted for flush tanks.

C. FLUSHOMETER VALVE. No manually controlled flushometer valve shall be used to flush more than one (1) urinal and each such urinal flushometer valve shall be an approved self-closing type discharging a predetermined quantity of water.

D. TROUGH URINALS. Trough urinals shall have strainers with outlets at least one and one-half (1½) inches in diameter. The washdown pipe shall be perforated so as to flush with an even curtain of water against the back of the urinal. Such pipe shall be of approved type brass, and shall be securely clamped as high as practicable to the back of the urinal. Trough urinals greater than twenty-four (24) inches in length shall be equipped with tanks having a flushing capacity of not less than one and one-half (1½) gallons of water for each two (2) feet of urinal length. Trough urinals shall be rated on the basis of one (1) urinal for each eighteen (18) inches at length, provided that:

- 24-inch trough equals 1 urinal.
- 25 - 36-inch trough equals 2 urinals.
- 37 - 48-inch trough equals 2 urinals.
- 49 - 60-inch trough equals 3 urinals.
- 61 - 72-inch trough equals 4 urinals.

E. FLOOR TYPE TROUGH URINALS. Floor type trough urinals are prohibited.

F. WALL AND FLOOR MATERIALS. The wall and floor space to a point one foot to each side of every urinal lip and four feet above the floor, and at least one foot to each side of every urinal shall be lined with an approved nonabsorbent material. (Ord. 92190; July 9, 1963).

5.09.090 Floor drains and shower stalls. A. STRAINER, APPROVED TYPE, FLOOR JOINT. Every floor drain shall be provided with an approved type strainer having a waterway equivalent to the area of its tail-piece. Floor drains and shower drains shall be of approved type. (Ord. 92190 as amended by Ord. 95168; Oct. 6, 1966).

5.09.100 Plumbing fixtures required. (a) Schools shall be provided with minimum plumbing fixtures and sanitary facilities as required by state law. Other buildings and occupancies shall be provided with minimum plumbing fixtures and sanitary facilities as set forth in Table 9-1, which is hereby adopted.

(b) (Toilet facilities for workmen). Toilet facilities approved by the director shall be provided and maintained in a sanitary condition for the use of workmen engaged in construction work.

(c) (Service sinks). Service sinks used for mopping and other similar cleaning operations shall be provided in food markets, taverns, and restaurants. Office buildings shall be provided with at least one service sink on each floor of the building. (Ord. 92190 as amended by Ord. 95168 and Ord. 96281; Nov. 29, 1967).

5.09.110 Industrial tanks. Industrial or commercial tanks, vats and similar processing equipment are not plumbing fixtures but may be connected to or discharge into approved traps or plumbing fixtures as provided in this title. (Ord. 92190; July 9, 1963).

Table 9-1 PLUMBING

TYPE OF BUILDING OR OCCUPANCY ²		WATER CLOSETS		URINALS		LAVATORIES ¹⁰		BATHUBS OR SHOWERS		DRINKING FOUNTAINS ³	
		Males	Females	Fixtures/Males	Fixtures/Males	Fixtures/Persons	Fixtures/Persons	Fixtures/Persons	Fixtures/Persons	PERSONS	PERSONS
SCHOOLS											
AS REQUIRED BY STATE LAW											
Theaters	1 - 1-200	1 - 1-100	1 - 1-200	1 - 1-200	1 - 1-200	1 - 1-200	1 - 1-200	1 - 1-200	1 - 1-100	1 - 1-100	
auditoriums,	2 - 201-400	2 - 101-200	2 - 201-400	2 - 201-400	2 - 201-400	2 - 201-400	2 - 201-400	2 - 201-400	2 - 101-500	2 - 101-500	
other places	3 - 401-600	3 - 201-400	3 - 401-600	3 - 401-600	3 - 401-600	3 - 401-600	3 - 401-600	3 - 401-600	1 for each ad-	1 for each ad-	
of public	1 for each additional 500	males and 1 for each ad-	ditional 500	1 for each ad-	ditional 300	1 for each ad-	ditional 300	1 for each ad-	ditional 1000	ditional 1000	
assembly	ditional 300 females	ditional 300 females	ditional 300 females	ditional 300 males	ditional 300 males	ditional 300 males	ditional 300 males	ditional 300 males			
Food service	1 - 1-60	1 - 1-30	1 - 1-30	1 - 1-30	1 - 1-30	1 per 60 females	1 per 60 females	1 per 60 females			
establishments, ¹¹	1 for each additional 60	1 for each additional 30	1 for each additional 30	2 - 31-90	1 for each additional 60	1 for each ad-	ditional 60	1 for each ad-			
taverns,											
cocktail bars,											
restaurants											
OFFICE BUILDINGS											
Office buildings,	1 - 1-15	1 - 15	1 - 15	1 - 1-15	1 - 1-15	1 - 1-15	1 - 1-15	1 - 1-15	1 - 1-15	1 - 1-15	
stores, and	2 - 16-35	16 - 35	16 - 35	2 - 16-55	2 - 16-55	2 - 16-55	2 - 16-55	2 - 16-55			
similar estab-	3 - 36-55	36 - 55	36 - 55	3 - 56-80	3 - 56-80	3 - 56-80	3 - 56-80	3 - 56-80			
lishments ⁹	4 - 56-80	56 - 80	56 - 80	4 - 81-100	4 - 81-100	4 - 81-100	4 - 81-100	4 - 81-100			
	5 - 81-100	81 - 100	81 - 100	5 - 101-150	5 - 101-150	5 - 101-150	5 - 101-150	5 - 101-150			1 per 75
	6 - 101-150	101 - 150	101 - 150	1 for each ad-	ditional 50	1 for each ad-	ditional 50	1 for each ad-			
Manufacturing	1 for each additional 50	1 for each additional 50	1 for each additional 50	1 for each ad-	ditional 50	1 for each ad-	ditional 50	1 for each ad-			
warehouses,	1 - 9	1 - 9	1 - 9	Up to 100	Up to 100	1 shower for each	1 shower for each	1 shower for each			
workshops, loft	2 - 10-24	10 - 24	10 - 24	1 per 10	1 per 10	15 persons exposed	15 persons exposed	15 persons exposed			
buildings, foun-	3 - 25-49	25 - 49	25 - 49	Over 100	Over 100	to excessive heat	to excessive heat	to excessive heat			
dries, & similar	4 - 50-74	50 - 74	50 - 74	1 per 15 ^{6,7}	1 per 15 ^{6,7}	or to skin contam-	or to skin contam-	or to skin contam-			1 per 75
establishments, ^{5,9}	5 - 75-100	75 - 100	75 - 100	1 for each ad-	ditional 30	ination with poi-	ination with poi-	ination with poi-			
	1 for each additional 30	1 for each additional 30	1 for each additional 30	1 for each ad-	ditional 30	sonous, infectious,	sonous, infectious,	sonous, infectious,			
						or irritating ma-	or irritating ma-	or irritating ma-			
Dwelling or apart-	1 for each dwelling unit	1 for each dwelling unit	1 for each dwelling unit	1 for each dwelling unit	1 for each dwelling unit	1 for each dwelling unit	1 for each dwelling unit	1 for each dwelling unit			
ment houses ⁴											

PLUMBING FIXTURES Table 9-1

- * * * Whenever urinals are provided, one (1) water closet less than the number specified may be provided for each urinal installed, except the number of water closets in such cases shall not be reduced to less than two-thirds of the minimum specified.
1. The figures shown are based upon one fixture being the minimum required for the number of persons indicated or any fraction thereof. In applying this schedule of facilities, consideration shall be given to the accessibility of the fixtures. Conformity purely on a numerical basis may not result in an installation suited to the need of the individual establishment. For example, schools should be provided with toilet facilities on each floor having classrooms. The Director of Public Health may approve variances from this schedule when its literal application is impracticable.
 2. Minimum plumbing facilities for buildings or occupancies not shown in this table shall be as required by the Director of Public Health.
 3. Drinking fountains shall not be installed in toilet rooms or on janitor services sinks or within twelve inches of any sink faucet.
 4. Kitchen sinks—one for each dwelling unit.
 5. As required by the American Standard Safety Code for Industrial Sanitation in Manufacturing establishments (ASA Z4.1—1942).
 6. Where there is exposure to skin contamination with poisonous, infectious, or irritating materials, provide one lavatory for each five persons.
 7. Twenty-four lineal inches of wash sink or eighteen inches of a circular basin, when provided with water outlets for such space, shall be considered equivalent to one lavatory.
 8. (a) Floor-type urinals. Floor-type trough urinals are prohibited.
 (b) Wall-type trough urinals shall be acid resistant and each such urinal shall be not less than six inches deep and shall be furnished with one-piece backs and have strainers with outlets at least one and one-half inches in diameter. The washdown pipe shall be perforated so as to flush with an even curtain of water against the back of the urinal. Urinal tanks shall have a flushing capacity of not less than one and one-half gallons of water for each two feet of urinal length.
 (c) Equivalent Length—Trough urinals shall be figured on the basis of one urinal for each eighteen inches of length, provided that

Length of Urinal	24"	36"	48"	60"	72"
Equivalent Number of Urinals.....	1	2	2	3	4
 - (d) Surrounding materials—Wall and floor space to a point one foot in front of urinal lip and four feet above the floor, and at least one foot to each side of the urinal shall be lined with non-absorbent material.
 9. (a) Toilet facilities shall be provided in separate rooms for each sex if there are more than four persons of mixed sex employed.
 (b) Handwashing basins supplied with hot and cold water shall be provided in commercial food handling establishments for the use of employees convenient to their work area. The basin shall be equipped with an approved hot and cold water mixing faucet.
 (c) Service sinks used for mopping and other similar cleaning operations shall be provided in food markets, taverns and restaurants. Office buildings shall be provided with at least one service sink on each floor of the building.
 10. All places where handwashing facilities are required shall have hot and cold water. Such fixtures shall be provided with approved mixing valves.
 11. Includes only those food service establishments serving food or drink for consumption on the premises.

Chapter 5.10
WATER DISTRIBUTION

Sections:

- 5.10.010 Running water required.
- 5.10.020 Unlawful connections.
- 5.10.030 Cross-connection control.
- 5.10.040 Water closet flushometer valves.
- 5.10.050 Water closet and urinal tanks.
- 5.10.060 Urinal flushometer valve.
- 5.10.070 Over-rim supplies.
- 5.10.080 Water and waste connections.
- 5.10.090 Tank inlets.
- 5.10.100 Lawn sprinkler system.
- 5.10.110 Fixture inlets.
- 5.10.120 Medical installations.
- 5.10.130 Water cooled equipment.
- 5.10.140 Aspirators.
- 5.10.150 Hot water and steam.
- 5.10.160 Non-potable water lines.
- 5.10.170 Backflow or back-siphonage.
- 5.10.180 Materials.
- 5.10.190 Valves.
- 5.10.200 Gravity supply tanks.
- 5.10.210 Inadequate water pressure.
- 5.10.220 Excessive water pressure.
- 5.10.230 Pressure relief valve.
- 5.10.240 Temperature control devices.
- 5.10.250 Installation of water piping.
- 5.10.255 Air chambers required.
- 5.10.260 Inspection and testing of water piping.
- 5.10.270 Size of potable water piping.

5.10.010 Running water required. Except as otherwise specifically approved by the director of public health, each plumbing fixture shall be provided with an approved supply of potable running water piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection. Water closets shall be flushed by means of an approved tank or flushometer valve, and such tanks or valves shall have a water flushing capacity of at least four gallons at each flushing operation. (Ord. 92190; July 9, 1963).

5.10.020 Unlawful connections. A. **BACK SIPHONAGE.** It is unlawful to make or allow any installation of potable water supply piping such that used, unclean, polluted or contaminated water, mixtures or substances

may enter any portion of such piping from any tank, receptacle, equipment or plumbing fixture by reason of back siphonage or suction, or from any other cause, either during normal use and operation thereof or when any such tank, receptacle, equipment or plumbing fixture is flooded, or is subject to pressure in excess of the operating pressure in the water piping.

B. DOMESTIC WATER AND WATER FROM OTHER SOURCE. It is unlawful to make or allow any connection between pipes, conduits or fixtures containing or carrying domestic water and any other pipes, conduits or fixtures containing or carrying water from any other source, or containing or carrying water which has been used for any purpose whatsoever, or carrying chemicals, liquids, gases, or any substances whatsoever, except as otherwise specifically provided in this title.

C. DOMESTIC WATER AND OTHER FIXTURE. It is unlawful to make or allow any connection between any plumbing fixture, device or construction and any domestic water supply system, when such connection may cause pollution of any water in such domestic system, or may cause a cross-connection between such fixture, device or connection and such domestic system.

D. PRIVATE TO PUBLIC. It is unlawful to make or allow any connection between any water piping supplied by any private water supply system and any source of public water supply.

E. HOT WATER HEATER AND HEATING SYSTEM. It is unlawful to make or allow any connection between any hot water supply for plumbing fixtures and any heating system, or to allow any hot water heater to be used as a heating boiler for any system. (Ord. 92190; July 9, 1963).

5.10.030 Cross-connection control. (a) No water operated equipment or mechanism shall be installed, or water treating chemical or substance used, if such equipment, mechanism, chemical or substance may cause a cross-connection, or pollution of a domestic water supply.

(b) Where practicable, every potable water supply inlet or connection to a fixture or appliance shall be protected from backflow by means of an approved air gap on the discharge side of the control valve. Where it is impracticable to provide such air gap, the fixture or appliance may be protected from backflow or back siphonage by an approved vacuum breaker or backflow preventer installed on the discharge side of the last valve and located at least six inches above the flood level rim of the fixture served. Where it is not practicable to provide an approved air gap or backflow preventer, as may be the case in connections to cooling jackets, condensers or other industrial or special appliances, the director of public health and the superintendent of water may require equivalent protection by such other means as they may deem practicable.

The omission of a backflow preventer may be approved by the director of public health and the superintendent of water only when it is evident that no cross-connection exists or could occur which would cause pollution or contamination of the potable water supply.

(c) All backflow prevention devices installed in a potable water supply system shall be maintained in good working condition. The director of public health or the superintendent of water may inspect any backflow prevention device and, if such is found to be defective or inoperable, shall require its repair or replacement. No backflow prevention device shall be removed from use or relocated, or other device substituted, without the approval of the director of public health and the superintendent of water. (Ord. 990 as amended by Ord. 97361 6; January 2, 1969).

5.10.040 Water closet flushometer valves. Water closet flushometer valves shall be equipped with an approved vacuum breaker. Each such vacuum breaker shall be installed on the discharge side of the flushometer valve with the critical level not less than six (6) inches above the flood level rim of the closet bowl. (Ord. 92190; July 9, 1963).

5.10.050 Water closet and urinal tanks. Water closet and urinal tanks shall be equipped with an approved ball-cock, installed with the critical level at least one (1) inch above the full opening of the overflow pipe. If such ball-cock has no hush tube, the bottom of the water supply inlet shall be installed one (1) inch above the full opening of the overflow pipe. One piece water closet fixtures having any portion of the tank below the floor level rim of the closet bowl shall have a ball-cock installed in a separate and isolated compartment of such tank. (Ord. 92190; July 9, 1963).

5.10.060 Urinal flushometer valve. Urinals served by a flushometer valve shall be equipped with an approved vacuum breaker installed on the discharge side of the flushometer, with the critical level not less than six (6) inches above the highest part of such urinal. (Ord. 92190; July 9, 1963).

5.10.070 Over-rim supplies. Over-rim supplies to plumbing fixtures shall be at least one (1) inch above the flood level rim of the fixture supplied. (Ord. 92190; July 9, 1963).

5.10.080 Water and waste connections. A. DIRECT CONNECTION. Direct connections between potable water piping and sewer connected wastes shall not exist under any condition with or without backflow protection. Where potable water is discharged to a drainage system, it shall be through an approved air gap of not less than twice the diameter of the supply inlet, and, in any case, of not less than one inch.

B. WITHIN SEWAGE PIPING. No potable water piping shall be installed or maintained within any piping or device conveying sewage, wastes or other materials hazardous to health and safety. (Ord. 92190; July 9, 1963).

5.10.090 Tank inlets. Where vacuum breakers are permitted protecting water supply inlets to tanks, vats, sumps and other receptors, they shall be installed on the discharge side of the last valve with the critical level not

less than six (6) inches above the flood level rim of such receptor. Water supply inlets not protected by vacuum breakers shall be installed a distance of not less than twice the diameter of the supply inlet, and in any case of not less than one (1) inch, above the flood level rim of such receptors. (Ord. 92190; July 9, 1963).

5.10.100 Lawn sprinkler system. Lawn sprinkling systems shall be equipped with approved vacuum breakers installed on the discharge side of each of the last valves and at least six (6) inches above the surrounding ground and above a sufficient number of heads so that the vacuum breaker at no time will be subject to back pressure or drainage, or, as specifically approved by the Director of Public Health, an automatic master control valve and vacuum breaker may be used. Approved non-metallic pipe and fittings may be used only beyond the discharge side of an approved vacuum breaker in lawn sprinkler systems. (Ord. 92190; July 9, 1963).

5.10.110 Fixture inlets. Fixture inlets or valved outlets with hose attachments which may constitute a cross-connection shall be protected by an approved vacuum breaker installed at least six (6) inches above the highest point of usage and located on the discharge side of the last valve. Fixtures with integral vacuum breakers manufactured as a unit may be installed as approved. (Ord. 92190; July 9, 1963).

5.10.120 Medical installations. Medical, therapeutic and surgical installations, mortuaries, and similar places shall have all water outlets protected by approved vacuum breakers on the discharge side of the last valves and installed not less than five and one-half (5½) feet above the floor, and at no time less than thirty-six (36) inches above any fixture or equipment served, unless such vacuum breaker is an integral part of a fixture or equipment approved as a unit, and provided that, if such, the vacuum breaker will not be subjected to back pressures under any condition. (Ord. 92190; July 9, 1963).

5.10.130 Water cooled equipment. Water cooled compressors or other approved water cooled equipment shall be protected by an approved backflow preventer installed ahead of the equipment on the discharge side of the last valve and at least six inches above the highest point reached by any water passing through or discharging from such equipment; provided that such equipment subject to continuous flows for periods of more than twelve hours may be provided with an approved "pressure type" vacuum breaker installed at least twelve inches above the highest point reached by any water passing through or discharging from such equipment. The omission of a backflow preventer may be approved by the director of public health and the superintendent of water only when it is evident that no cross-connection exists or could occur which would cause pollution or contamination of the potable water supply. (Ord. 92190 as amended by Ord. 97361 § 7; January 2, 1969).

5.10.140—5.10.170 PLUMBING

5.10.140 Aspirators. Aspirators shall not be directly connected to a sewer connected waste pipe, but may be connected to the inlet side of a trap and shall be equipped with an approved vacuum breaker installed at least six (6) inches above the aspirator unit. The discharge pipe from an aspirator unit shall be not longer than twelve (12) inches, shall be designed for free flow, and shall discharge through an approved air gap. (Ord. 92190; July 9, 1963).

5.10.150 Hot water and steam. A. VACUUM BREAKERS. Vacuum breakers for hot water the temperature of which is over one hundred and sixty degrees Fahrenheit (160° F.) shall be of approved type designed to operate at temperatures of one hundred and sixty degrees Fahrenheit (160° F.) or more without rendering any portion of such vacuum breaker inoperative.

B. BACKFLOW PREVENTION. Steam and steam boiler connections shall be protected against backflow in an approved manner. (Ord. 92190; July 9, 1963).

5.10.160 Non-potable water lines. In cases where it is impracticable to correct individual cross-connections on a domestic water line, the line supplying the outlets from such cross-connection shall be considered a non-potable water line. No drinking or domestic water outlets shall be connected to a non-potable water line. Wherever practicable all portions of a non-potable water line shall be exposed and all exposed portions shall be identified in an approved manner. Every outlet on a non-potable water line which may be used for drinking or domestic purposes shall be posted "DANGER—UNSAFE WATER". (Ord. 92190; July 9, 1963).

5.10.170 Backflow or back-siphonage. Backflow or back-siphonage from a non-potable water line into a domestic water line shall be prevented by the installation of a gravity tank or by a tank having a pump for desired non-potable water. The domestic water inlets to such non-potable water tanks shall have an approved air gap. Where it is impracticable to install such non-potable water tanks and the use of other type backflow or back-siphonage prevention devices are approved, they shall be installed as follows:

(1) Where reverse flow due only to gravity or a vacuum within the line can occur, an approved atmospheric loop or other approved backflow prevention device shall be installed in the supply line. When approved, a pressure vacuum breaker unit shall be installed at a height of at least twelve inches above the highest tank, equipment or point of usage of the non-potable water. When approved, reduced pressure principle backflow prevention devices shall be installed in an approved manner, and in no case less than twelve inches above the surrounding ground or floor.

(2) Where backflow can occur due to steam boilers, pumps, etc. creating a higher pressure in the non-potable water line, an approved backflow

prevention device shall be installed in the supply line at least twelve inches above the surrounding ground or floor.

(3) It is unlawful to install a reduced pressure principle backflow prevention device without first obtaining approval so to do from the director of public health and the superintendent of water. Upon obtaining said approval, a plumbing permit shall be secured with payment of the fee prescribed therefor in Section 5.01.330. Such permit shall be conspicuously posted in the immediate area where the backflow prevention device is to be installed. Such device shall be subject to an initial testing procedure upon installation and an annual operating test thereafter as directed and approved by the director of public health and the superintendent of water.

Upon approval of each such annual operating test and payment of the prescribed fee, an operating permit will be issued to the owner or occupant of the premises whereon such backflow prevention device is installed. It shall be the responsibility of such owner or occupant to cause such annual tests to be made by a person qualified and approved by the director of public health and the superintendent of water to perform such tests.

Refusal by the owner or occupant to cause such tests to be made and to obtain approval for the continued operation of such backflow prevention device shall be sufficient cause for the termination of the public water service to the premises.

(4) No reduced pressure principle backflow prevention device shall be installed unless a pressure relief valve shall also be installed in accordance with applicable sections of the plumbing code pertaining to pressure relief valves.

(5) All reduced pressure principle backflow prevention devices shall be subject to testing at any time deemed necessary by the director of public health or the superintendent of water.

(6) All reduced pressure principle backflow prevention devices installed at the time this amending ordinance becomes effective shall be subject to annual testing as required herein for new installations of such devices. (Ord. 92190 as amended by Ord. 96168 and Ord. 97361 § 8; Jan. 2, 1969).

5.10.180 Materials. (a) Water pipe and fittings shall be of brass, copper, cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel or other approved materials. Approved mechanical joints may be used in water piping.

(b) Cast iron water fittings two inches or less in size, when used in connection with potable water piping, shall be galvanized.

(c) No pipe or tubing used for gas, oil, wastes or similar purposes shall be used for water piping. Inside surfaces of water piping shall not be such as to be detrimental to potable water. (Ord. 92190 as amended by Ord. 96281 and Ord. 98593 § 12; Feb. 11, 1970).

5.10.190—5.10.220 PLUMBING

5.10.190 Valves. A. SPECIFICATIONS. Valves used in water piping, two inches or less in size, shall be brass. Such valves over two inches in size may have cast iron or brass bodies. Gate valves used in water piping shall be full-way type with working parts of noncorrosive metal.

B. WHERE REQUIRED. A full-way stop and waste type gate valve controlling all outlets shall be installed on the discharge side of every water meter and every unmetered water supply, and shall be located as near as practicable to the point where the water supply enters the building. Water piping supplying more than one building on any one premises shall be equipped with a separate full-way stop and waste type gate valve to each such building so arranged that the water supply can be turned off to any one such building, provided that supply piping to a single family residence and a building accessory thereto may be controlled by one valve. Such valves shall be readily accessible. A full-way valve shall be installed on the discharge piping from water supply tanks at or near the tank. A full-way valve shall be installed on the cold water supply pipe to every water heater at or near the heater. A drain valve shall be installed on every hot water heater.

C. TWO OR MORE OPENINGS. All valves used to control two or more openings in water piping shall be full-way gate valves or other approved full-way valves.

D. CONTROL VALVE. A shutoff valve shall be installed immediately ahead of each mixing or control valve for water closets, wash basins, bathtubs, showers, sinks and ahead of every slip joint connection in a plumbing supply system.

E. ACCESS. All shutoff or control valves in a water supply system shall be accessible. (Ord. 92190 as amended by Ord. 92556; Dec. 24, 1963).

5.10.200 Gravity supply tanks. Gravity supply tanks for potable water shall be tightly covered, and shall have not less than a sixteen square inch overflow screened with copper screen having not less than fourteen, and not more than eighteen openings per lineal inch. (Ord. 92190; July 9, 1963).

5.10.210 Inadequate water pressure. Whenever the water pressure in a main or other source of supply will not provide a water pressure of at least fifteen pounds per square inch, after allowing for friction and other pressure losses, a tank and pump or other means which will provide not less than fifteen pounds pressure shall be installed. (Ord. 92190; July 9, 1963).

5.10.220 Excessive water pressure. Whenever the water pressure in a domestic water supply line is in excess of one hundred pounds per square inch, an approved type pressure regulator preceded by an adequate strainer shall be installed and the pressure reduced to one hundred pounds per square inch or less; provided, that this requirement shall not

apply to a water supply line for fire fighting purposes. Each such regulator and strainer shall be accessibly located and shall have the strainer accessible for cleaning without removing the regulator or strainer body or disconnecting the supply piping. (Ord. 92190; July 9, 1963).

5.10.230 Pressure relief valve. (a) A pressure relief valve of a type approved by the director shall be installed in all closed systems, and in the water piping of all newly installed domestic hot water storage tanks. In new buildings the pressure relief valve drain piping shall be installed during the roughing-in of the plumbing system. In buildings other than single family residences where it is impractical to install individual pressure relief valves for each domestic hot water storage tank, dual pressure relief valves may be installed in the water supply to protect more than one hot water storage tank.

(b) Each pressure relief valve shall be an approved automatic type with drain, and each such relief valve shall be set at a pressure of not more than fifty pounds per square inch above the pressure of the water system.

(c) Each such pressure relief valve shall be installed in the water supply pipe, and shall be so located as to be readily accessible. If a pressure relief valve is located inside a building, a full size drain pipe shall extend therefrom to the outside of the building, with the end of the pipe not more than two feet or less than six inches above the ground and pointing downward, or such drain may terminate at other approved locations. No part of such drain pipe shall be trapped.

(

(

(

(d) All water heating appliances which are installed in a closed system of water piping, or any water heater connected to a separate storage tank and having valves between such heater and tank, shall be provided with a water pressure relief valve. (Ord. 92190 as amended by Ord. 95168; Oct. 6, 1966).

5.10.240 Temperature control devices. Nothing in this title shall preclude the use of an approved temperature control relief valve in addition to a required pressure relief valve or prevent the installation in lieu of such pressure relief valve of an approved combination temperature and pressure relief valve. Each such temperature control relief valve or combination temperature and pressure relief valve shall be installed at an approved location at or within three inches of the hottest part of the heater or tank served and shall be set to operate at two hundred ten degrees Fahrenheit or less and shall be so sized and designed as to prevent any further rise in temperature. Each such temperature control relief valve or combination temperature and pressure relief valve shall be provided with a drain as required for a pressure relief valve. (Ord. 92190; July 9, 1963).

5.10.250 Installation of water piping. (a) All water piping shall be supported in an approved manner. Burred ends shall be reamed to the full bore of the pipe. Changes in direction shall be made by the appropriate use of fittings. All such piping, equipment, appurtenances and devices shall be installed in a workmanlike manner.

(b) **TRENCH.** Water service pipes or any underground water pipes shall not be run or laid in the same trench with nonmetallic building sewer or drainage piping, except as follows. The water service pipe may be placed in the same trench with such building sewer provided both the following conditions are met. The bottom of the water service pipe, at all points, shall be at least twelve inches above the top of the sewer line. The water service pipe shall be placed on a solid shelf excavated at one side of the common trench.

(c) **CONCRETE SLAB.** No water piping shall be installed within any concrete slab. Provided that if such is impracticable due to structural conditions, water piping may be installed in chases, sleeves, or ducts.

(d) Water supply piping shall be protected from frost. Hose bibs shall be protected by means of frost resistant valves or other approved valves. (Ord. 92190 § 5.10.255 as amended by Ord. 92556, Ord. 95168 and Ord. 98593 §12; Feb. 11, 1970).

5.10.255 Air chambers required. Every sink shall be equipped with an air chamber sixteen inches in length. Every flushometer valve shall be equipped with a twenty-four inch air chamber installed in a vertical position (Ord. 92190 § 5.10.255 added by Ord. 92556; Dec. 24, 1963).

5.10.260 Inspection and testing of water piping. No water piping system, or part thereof, shall be covered or concealed until it has first been

5.10.270 PLUMBING

inspected and approved by the director of public health. Before such approval, both hot and cold water piping shall be subjected to a full working water pressure test from the street main or other source of supply, or to an air pressure of not less than fifty pounds per square inch for not less than fifteen minutes, and such piping shall not leak when subjected to such test. (Ord. 92190; July 9, 1963).

5.10.270 Size of potable water piping. (a) The size of each water meter and each potable water supply pipe from the meter or other source of supply to the fixture supply branches, risers, fixtures, connections, outlets or other uses shall be based on the total demand and shall be determined according to methods and procedures outlined in this section.

(b) The quantity of water required to be supplied to every plumbing fixture shall be represented by fixture units, as shown in Table 10-1, which is hereby adopted. Equivalent fixture values shown in Table 10-1 include both hot and cold water demand.

(c) Where the maximum length of supply piping is two hundred feet or less, each water piping system of fifty fixture units or less shall be sized in accordance with the values set forth in Table 10-2, which is hereby adopted. Other systems within the range of Table 10-2 shall be sized from that table or in accordance with the procedures set forth in Report BM S 79, Water Distributing Systems for Buildings, edition of 1941, published by the National Bureau of Standards, a copy of which is filed with the city comptroller (C.F. 248005). Systems beyond the range of Table 10-2 shall be sized in accordance with the procedures set forth in said Report BM S 79. On any proposed water piping installation sized pursuant to Table 10-2, the following conditions shall be determined:

1. Total number of fixture units as determined from the table of Equivalent Fixture Units (Table 10-1) for the fixture to be installed.
2. Developed length of supply pipe from meter to most remote outlet.
3. Difference in elevation between the meter or other sources of supply and the highest fixture or outlet.
4. Pressure in the street main or other sources of supply at the locality where the installation is to be made. Calculations shall be based on not to exceed one hundred p.s.i pressure in the system.
5. In localities where there is a wide fluctuation of pressure in the main throughout the day, the water piping systems shall be designed on the basis of the minimum pressure available.

(d) **HOT WATER PIPING.** In sizing the hot water piping of water supply systems having a total demand of fifty fixture units or less from Table 10-2, the greatest developed length of the cold water supply piping may be used and the length of the hot water piping ignored when the hot water piping friction loss is compensated for by the following method:

(1) Compute the total hot water fixture unit demand, using those values given in Table 10-1 for the combined hot and cold water use, and

assign the total demand computed as the fixture unit demand at the hot water heater inlet.

(2) Starting at the most remote outlet on the cold water piping and working back toward the water meter, compute the pipe sizing for the system from the column originally selected in Table 10-2, using the fixture unit values given in Table 10-1, and adding in the fixture unit demand of the hot water heater supply inlet as computed in (1) above, at the point where it occurs. The final size of the cold water branch or main need not exceed the originally established size of the building supply.

(e) Except as provided in subsection (d), when Table 10-2 is used, water piping systems which include hot water piping, shall be designed by taking the total length of the supply piping from the source of cold water supply through the water heater, to the most remote hot water outlet and assessing flow values of seventy-five percent of the combined hot and cold water demand as given to Table 10-1, to the piping supplying either hot or cold water to those fixtures served by both. Piping serving water heaters shall be sized to deliver the required hot water demand, plus all required cold water demands, but in no case need the piping be larger in size than that required by Table 10-2 for the total building supply.

(f) (Exceptions.) The provisions of this section relative to size of water piping shall not apply to the following:

(1) Water supply piping systems designed in accordance with recognized engineering procedures approved by the Director of Public Health.

(2) Alteration of or minor additions to existing installations, provided the Director of Public Health finds that there will be a reasonably adequate supply of water for all fixtures.

(3) Replacement of existing fixtures or appliances.

(4) Piping which is part of fixture or equipment.

(5) Unusual conditions where, in the judgment of the Director of Public Health, a reasonably adequate supply of water is provided.

(6) Nonpotable water lines.

(7) Irrigation water piping installed outside any building and separated from the potable water supply system by means of an approved air gap or backflow prevention device, provided that the potable water piping system supplying such irrigation system shall be sized as approved to deliver the full connected demand of both systems. (Ord. 92190, as amended by Ord. 95168; October 6, 1966).

Table No. 10-1
WATER SUPPLY SYSTEMS
Fixture Unit Equivalents
(Combined Hot and Cold Water Demand)

Fixture	Fixture Units	
	Private Use	Public Use
Bar sink	1	2
Bathtub (with or without shower over)	2	4
Dental unit or cuspidor .....	..	1
Drinking fountain (each head) .....	..	1
Hose bib or sill cock (standard type)	3	5
House trailer (each)	6	6
Laundry tub or clotheswasher (each pair of faucets)	2	4
Lavatory	1	2
Lavatory (dental)	1	1
Lavatory, shampoo .....	..	3
Lawn sprinklers (standard type, each head)	1	1
Shower (each head)	2	4
Sink (bar)	1	2
Sink or dishwasher	2	4
Sink (flushing rim, clinic) .....	..	10
Sink (washup, each set of faucets) .....	..	2
Sink (washup, circular spray) .....	..	4
Urinal (flush tank) .....	..	3
Urinal (pedestal or similar flushometer) .....	..	10*
Urinal (stall or wall flushometer) .....	..	5*
Water closet (flush tank)	3	5
Water closet (flushometer)	6*	10*
Water supply outlets for unlisted items		
3/8 inch	1	2
1/2 inch	2	4
3/4 inch	3	6
1 inch	6	10

FLUSHOMETERS

* After the fifth flushometer on any branch or main. For the first five fixtures served by flushometer valves on each branch, the fixture unit

equivalent shall be determined, beginning with the most remote such valve on each branch, as follows:

	Fixture Units	
	1" Valve	1/2" or 3/4" Valve
First Flushometer	40	20
Second Flushometer	30	15
Third Flushometer	20	10
Fourth Flushometer	15	10
Fifth Flushometer	10	5

Table No. 10-2
Fixture Unit Table for Determining The Size of
Water Distributing Pipe

Size of Water Meter (Inches)	Size of Building		Maximum Allowable Length in Feet		
	Supply and Branches (Inches)	Maximum Number of Fixture Units			
		100 Ft.	150 Ft.	200 Ft. ²	
3/4	1/2 ¹	6	5	4	
3/4	3/4	17	14	11	
3/4	1	33	28	23	
1	1	36	30	25	
1	1 1/4	67	52	44	
1 1/2	1 1/4	89	66	52	
1 1/2	1 1/2	167	128	105	
2	1 1/2	204	150	117	
1 1/2	2	318	272	240	
2	2	430	368	318	
2	2 1/2	580	535	500	

1. Building Supply—3/4 inch minimum.
2. Water supply systems within the scope of Table 10-2 exceeding two hundred feet in length from meter to most remote fixture and sized from the two hundred feet column shall increase the water service one pipe size from the meter to the building for the added length of service pipe.

Chapter 5.11
RAINWATER LEADERS

Sections:

5.11.010 Rainwater leaders.

5.11.010 Rainwater leaders. A. DEFINITION—DISCHARGE. Rainwater leaders are pipes within a building which drain storm water from roofs or other similar areas of such building. Rainwater leaders shall discharge outside such building and shall not discharge into any sanitary drainage system.

B. MATERIALS. Pipe used in rainwater leaders shall be service weight cast iron, or galvanized steel, galvanized wrought iron, lead, copper or brass, having a smooth and uniform bore. No galvanized wrought iron or galvanized steel pipe shall be used underground, and such pipe shall be kept at least six (6) inches above ground. Burred ends shall be reamed to the full bore of the pipe.

C. FITTINGS. Fittings used in rainwater leaders shall be service weight cast iron, or malleable iron, lead, copper or brass, having a smooth interior way of the same diameter as the piping served. Such fittings shall conform to the type of pipe used, and such threaded fittings shall be of the recessed drainage type. Short sweep fittings may be used in rainwater leaders. Approved mechanical joints may be used in rainwater leaders above ground only.

D. ROOF DRAINS. Roof drains shall be service weight cast iron, or malleable iron, lead, copper or brass.

E. PROHIBITED USES. Rainwater leaders shall not be used as soil, waste or vent pipes, and soil, waste or vent pipes shall not be used as rainwater leaders.

F. TRAPS. Rainwater leaders which terminate less than two (2) feet above or ten (10) feet from, any window, door, opening, air intake, exhaust vent or vent shaft, or less than ten (10) feet from line of any property which may be built upon, shall be equipped with traps, but are not required to be vented. Other rainwater leaders are not required to be trapped or vented. Cleanouts are not required in rainwater leaders.

G. CAPACITY. The combined capacity of rainwater leaders serving any building shall be not less than as calculated by approved engineering procedure or as set forth in Table 11-1, which is hereby adopted.

H. TESTING. All rainwater leaders shall be tested. (Ord. 92190, as amended by Ord. 96281; November 29, 1967).

Table No. 11-1

RAINWATER LEADERS

Roof or Other Area Served (Square Feet)	Size of Rainwater Leader (Inches)
1 - 1050	2
1051 - 3150	3
3151 - 6450	4
6451 - 10800	5
10801 - 18000	6
18001 - 35700	8
35701 - 58800	10
58801 - 95400	12

Chapter 5.12

MISCELLANEOUS

Sections:

- 5.12.010 Repeal.
- 5.12.020 Severability.
- 5.12.030 Penalty.

5.12.010 Repeal. Ordinances Nos. 80242, 80624, 80719, 81481, 81502, 81990, 82091, 83176, 83177, 83362, 81563, 83791, 83793, 85220, 86980, 87268, 89716 and 89795, relating to and regulating plumbing and plumbing systems, are hereby repealed; Provided, that such repeal shall not be construed as affecting the application of such ordinances to violations thereof prior to August 8, 1963. (Ord. 92190; July 9, 1963).

5.12.020 Severability. Should any section, subsection, paragraph, sentence, clause or phrase of this title be declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of this title. (Ord. 92190; July 9, 1963).

5.12.030 Penalty. Anyone violating or failing to comply with any of the provisions of this title shall, upon conviction thereof, be punished by a fine in a sum not exceeding three hundred dollars, or by imprisonment in the city jail for a term not exceeding ninety days, or by both such fine and imprisonment, and each day that anyone shall continue to so violate or fail to comply shall be considered a separate offense. (Ord. 92190; July 9, 1963).

