

The City of Providence

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

CHAPTER 1972-25

No. 208 **AN ORDINANCE** REVISING, AMENDING, AND MODIFYING THE PLUMBING CODE OF THE CITY OF PROVIDENCE CONTAINED WITHIN CHAPTER 1079, 1956, SECTIONS 1700-1731, ENTITLED "PLUMBING, DRAINAGE, AND GAS PIPING", AND "SECTIONS 505.2-515.0, ENTITLED "VENTILATION," CONTAINED WITHIN AND ALSO KNOWN AS THE "BUILDING ORDINANCES OF THE CITY OF PROVIDENCE."

Approved June 12, 1972

Be it ordained by the City of Providence:

SECTION 1. The Plumbing Code Sections of the City of Providence contained within Chapter 1079 of the Building Ordinances of the City of Providence entitled, "Plumbing, Drainage, and Gas Piping, Sections 1700-1731, and also entitled "Ventilation", Sections 505.2-515.0 is hereby amended in whole and in part in the following manner:

ARTICLE 17 - PLUMBING, DRAINAGE AND GAS PIPING

SEC. 1700.0 - SCOPE

The provisions of this article shall govern the design, instalation, alteration, maintenance and inspection of all systems of plumbing, water supply, drainage and gas piping, with no intent as to the jurisdiction of work, in all buildings hereafter erected or altered and temporary sanitary facilities for construction operations, and in the maintenance and repair of existing building. All installations shall be made in conformity with the provisions of this article and the approved rules adopted thereunder.

SEC. 1700.1 - OTHER STANDARDS. Compliance with the applicable standards and accepted engineering practice requirements for plumbing and gas-piping systems listed in Appendix B shall be deemed to meet the requirements of this code unless otherwise specifically provided in this article.

SEC. 1700.2 - MINOR REPAIRS. The repair of leaks in existing faucets, valves and other plumbing fixtures, shall be deemed a minor alteration for which no permit shall be required.

SEC. 1701.0 - DEFINITIONS OF PLUMBING TERMS

1701.1 Definitions of Terms.

administrative authority. The individual official, board, department, or agency established and authorized by a State, county, city, or other political subdivision created by law to administer and enforce the provisions of the plumbing code as adopted or amended.

air break (drainage system). A piping arrangement in which a drain from a fixture, appliance, or device discharges indirectly into another fixture, receptacle, or interceptor at a point below the flood level rim.

air gap (drainage system). The unobstructed vertical distance through the free atmosphere between the outlet of waste pipe and the flood level rim of the receptacle into which it is discharging.

air gap (water distribution system). 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 device and the flood level rim of the receptacle.

anchors. See supports.

approved. Accepted or acceptable under an applicable specification stated or cited in this Code, or accepted as suitable for the proposed use under procedures and powers of the Administrative Authority.

area drain. A receptacle designed to collect surface or storm water from an open area.

aspirator. A fitting or device supplied with water or other fluid under positive pressure which passes through an integral orifice or "constriction" causing a vacuum. Aspirators are often referred to as "suction" apparatus, and are similar in operation to an ejector.

autopsy table. A fixture or table used for post-mortem examination of a body.

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 is one type of backflow.

backflow connection. Any arrangement whereby backflow can occur.

backflow preventer. A device or means to prevent backflow.

backflow preventer, reduced pressure zone type. An assembly of differential valves and check valves including an automatically opened spillage port to the atmosphere.

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

battery of fixtures. Any group of two or more similar adjacent fixtures which discharge into a common horizontal waste or soil branch.

bedpan hopper. See clinical sink.

bedpan steamer or boiler. A fixture used for scalding bedpans or urinals by direct application of steam or boiling water.

bedpan unit. A small workroom in the nursing area designed and equipped for emptying, cleaning, and sometimes for steaming bedpans, and for no other purpose.

bedpan washer and sterilizer. A fixture designed to wash bedpans and to flush the contents into the sanitary drainage system. It may also provide for disinfecting utensils by scalding with steam or hot water.

bedpan washer hose. A device supplied with hot and cold water and located adjacent to a water closet or clinical sink to be used for cleansing bedpans.

boiler blow-off. An outlet on a boiler to permit emptying or discharge of sediment.

boiler blow-off tank. A vessel designed to receive the discharge from a boiler blow-off outlet and to cool the discharge to a temperature which permits its safe discharge to the drainage system.

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

branch fixture. See fixture branch.

branch horizontal. See horizontal branch.

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

branch vent. A vent connecting one or more individual vents with a vent stack or stack vent.

building. A structure having walls and a roof designed and used for the housing, shelter, enclosure, or support of persons, animals or property.

building classification. The arrangement of buildings in classes according to occupancy.

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 the building and conveys it to the building sewer beginning 3 feet outside the building wall.

building drain - combined. A building drain which conveys both sewage and storm water or other drainage.

building drain - sanitary. A building drain which conveys sewage only.

building drain - storm. A building drain which conveys storm water or other drainage but no sewage.

building gravity drainage system. A drainage system which drains by gravity into the building sewer.

building sewer. That part of the drainage system which extends from the end of the building drain and conveys its discharge to a public sewer, private sewer; individual sewage-disposal system, or other point of disposal.

building sewer - combined. A building sewer which conveys both sewage and storm water or other drainage.

building sewer - sanitary. A building sewer which conveys sewage only.

building sewer - storm. A building sewer which conveys storm water or other drainage but no sewage.

building subdrain. That portion of a drainage system which does not drain by gravity into the building sewer.

building trap. A device, fitting, or assembly of fittings installed in the building to prevent circulation of air between the drainage system of the building and the building sewer.

cesspool. A lined and covered excavation in the ground which receives the discharge of domestic sewage or other organic wastes from a drainage system, so designed as to retain the organic matter and solids, but permitting the liquids to seep through the bottom and sides.

circuit vent. A branch vent that serves two or more traps and extends from the down-stream side of the highest fixture connection of a horizontal branch to the vent stack.

code. These regulations, subsequent amendments thereto, or any emergency rule or regulation which the Administrative Authority having jurisdiction may lawfully adopt.

combination fixture. A fixture combining one sink and laundry tray or a two or three-compartment sink or laundry tray in one unit.

combined building drain. See building drain - combined.

combined building sewer. See building sewer - combined.

combination waste and vent system. A specially designed system of waste piping embodying the horizontal wet venting of one or more sinks or floor drains by means of a common waste and vent pipe adequately sized to provide free movement of air above the free water surface in the drain.

common vent. A vent connecting at the junction of two fixture drains and serving as a vent for both fixture drains.

conductor. A pipe inside the building which conveys storm water from the roof to a storm or combined building drain.

continuous vent. A vertical vent that is continuation of the drain to which it connects.

continuous waste. A drain from two or more fixtures connected to a single trap.

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

dead end. A branch leading from a soil waste, or vent pipe, building drain, or building sewer, and terminating at a developed length of 2 feet or more by means of a plug, cap, or other closed fitting.

department having jurisdiction. See administrative authority.

developed length. The length of a pipe line measured along the center line of the pipe and fitting.

diameter. The nominal diameter as designated commercially.

domestic dewage. The water-borne wastes derived from ordinary living processes.

double offset. Two changes of direction installed in succession or series in a continuous pipe.

downspout. See leader.

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

drainage pipe. See drainage system.

drainage system. Includes all the piping, within public or private premises, which conveys sewage, rain water, or other liquid wastes to

a point of disposal. It does not include the mains of a public sewer system or private or public sewage-treatment or disposal plant. Neither does this apply to plumbing appliances or devices that are covered by standards acceptable to the Administrative Authority.

drainage system, (Building gravity). A drainage system which drains by gravity into the building sewer.

drainage system, (sub-building). - See building subdrain.

dry well. - See leaching well.

dual vent. - See common vent.

durham system. A term used to describe soil or waste systems where allpiping is of threaded pipe, tube, or other such rigid construction, using recessed drainage fittings to correspond to the types of piping.

dwelling units. One or more rooms with provision for living, sanitary and sleeping facilities arranged for the use of one family or individual.

effective opening. The minimum cross-sectional area at the point of water supply discharge, measured or expressed in terms of (1) diameter of a circle, or (2) if the opening is not circular, the diameter of a circle of equivalent cross-sectional area.

ejector. See aspirator.

existing work. A plumbing system or any part thereof installed prior to the effective date of this Code.

Fire line. A system of pipes and equipment used exclusively to supply water for extinguishing fires.

fixture. See plumbing fixture.

fixture branch. A drain serving one or more fixtures and which discharges to another drain or to a stack.

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

fixture supply. The water supply pipe connecting a fixture to a branch water supply pipe or directly to a main water supply pipe.

fixture unit, drainage (d.f.u.). A measure of the probable discharge into the drainage system by various types of plumbing fixtures. The drainage fixture-unit value for a particular fixture depends on its volume rate of drainage discharge, on the time duration of a single drainage operation, and on the average time between successive operations¹

¹In general, on small systems, one drainage fixture-unit approximates one cubic foot per minute.

fixture unit, supply (s.f.u.). A measure of the probable hydraulic demand on the water supply by various types of plumbing fixtures. The supply fixture-unit value for a particular fixture depends on its volume rate of supply, on the time duration of a single supply operation, and on the average time between successive operations.

flood level. - See flood level rim.

SEC. 1702.0 - PLANS AND SPECIFICATIONS

SEC. 1702.1 - WHEN REQUIRED. Mechanical plans and specifications in sufficient detail of the fixture layout and spacing: showing size, material and location of all building sewers, building drains, storm sewers, storm drains, soil waste and vent piping and water and gas supply piping for the installation of, alteration of, or addition to the plumbing, sewerage, drainage or gas piping system of any buildings, structures or premises shall be submitted to the Director for approval prior to the issuance of any permit.

SEC. 1702.2 - PLANS. Legible plans drawn to a scale of not less than one-eighth(1-1/8) inch to the foot of each floor and of a typical floor shall be filed in triplicate and shall fully show the complete plumbing system, all plumbing fixtures and all water supply and gas piping, together with building sections showing vertical and diagrammatic elevations of the soil, waste, vent and water supply lines with traps and valves, and the location and size of the public sewer or other disposal system.

.21 - Plumbing, Drainage or Piping Work For the City of Providence. Before any plans or specifications for the construction of, addition to or modification of any plumbing or drainage work in any building or structure belonging to the City of Providence are offered for bids, said plans and specifications shall be approved by the Director.

SEC. 1702.3 - EXCEPTIONS. The filing of plans and specifications shall not be required for minor repairs as defined in Section 1700.2 of this article for the installation or alteration of plumbing and drainage classifications herein specifically exempted; open sheds for storage purposes, and temporary sanitary installations required under the provision of Section 1322.0 for construction operations; and except that temporary installations may be installed for exhibition

purposes without tests or inspections when not designed for sanitary use nor directly connected to a sewerage system. When a situation arising on jobs requires changes or modifications to plumbing and drainage approval of same will be left to the discretion of the Director.

SEC. 1702.4 - PLUMBING IN PREFABRICATED BUILDINGS CONSTRUCTED OUTSIDE THE CITY OF PROVIDENCE - All pipe and fittings used in the drainage waste, vent and water supply systems must comply with the Providence Plumbing Code in regard to size, weight of materials, wall thickness of pipe and tubing, the method of connecting and installing, of hanging and supporting, the design of the installation and the type of plumbing fixtures, appliances and appurtenances. All of the aforementioned must meet the requirements and specifications of the City of Providence Plumbing Code.

SEC. 1703.0 TESTS

SEC. 1703.1 - NOTICE TO DIRECTOR. It shall be the duty of the person, firm or corporation to whom a plumbing, drainage or gas piping permit has been issued to notify the Director when the installation is ready for tests.

SEC. 1703.2 - CONDUCT OF TESTS. All test shall be made in accordance with the provisions of this article and the approved rules adopted thereunder. When approved or directed by the Director, partial inspections and tests shall be made progressively in the following installations as the specific part of the work is installed and before the work is covered up or sealed:

.21 - Sewers. The building sewer, storm sewer and all branches from the property line to the building drain or storm drain shall be inspected and tested when completed;

.22 - Drains. The building drain and storm drain including all the piping to a height of five (5) feet above the highest point of the building drain to a point three (3) feet outside foundation wall, except that the exposed connection to fixtures may be inspected and tested when completed.

.23 - Soil, Vent and Drainage Lines. The soil, waste, vent, inside conductor and drainage pipes and the water distribution system shall be inspected and tested when completed; and before being covered.

.23a - Closet Flange Inspections. Shall be made before water closets are set.

.24 - Final Test. The final inspection and test shall be made when the entire system is completed.

.25 - Pressure Tests. Gas piping system shall be subjected to the pressure tests prescribed in Section 1728.2.

SEC. 1703.3 - WATER TESTS. All openings in the sanitary drainage and venting and storm water drainage systems shall be tightly closed and the system shall be subject to the water test in accordance with the approved rules, and the plumbing and drainage work shall not be used unless the same has first been tested by the plumber or drain layer in the presence of the inspector, with the air pressure, peppermint or other approved tests, and approved by the Director in writing.

SEC. 1703.4 COST OF TEST. The cost of all plumbing tests shall be borne by the owner or his representative.

SEC. 1703.5 - WITNESSES. The owner or his authorized representative may be present when water tests are made of any part of a plumbing, drainage or water supply system, or whenever the presence is requested by the Director of the holder of the license or permit to perform the work, A Licensed Plumber shall be on the job for inspections.

SEC. 1703.6 - ALTERATION WORK. In the case of an extension or alteration to an existing plumbing system which involves the installation of new stacks, the complete series of tests herein prescribed shall be applied. In all other alterations to existing work, the system shall be subjected to such tests as the Director may prescribe.

SEC. 1703.7 - REPLACEMENT OF DEFECTIVE PLUMBING. All defective pipes, fitting and fixtures shall be removed and all defective work shall be made to comply in full with the requirements of this article, and all faulty or defective plumbing or drainage work shall be corrected and approved within forty-eight (48) hours after notice to do so from the

and in addition to other penalties prescribed, said Director may refuse to issue any permit for future work to the person in default, until such faulty or defective work has been corrected.

SEC. 1704.0 - INSPECTIONS

All new installations, alterations or replacements of sewers, storm drains, drainage systems, plumbing systems, gas piping systems or appurtenances and appliances in connection therewith, shall be inspected or reinspected for compliance with this Code before a certificate of approval is issued to permit the use of such systems or equipment as required in Section 1705.0.

SEC. 1704.1 WHEN REQUIRED. When alterations, repairs or extensions are made to building drains, building sewers, plumbing or gas piping systems the work shall be inspected by the Director before a permit for its use is granted, and all repairs, changes or modifications of, and all alterations to, any plumbing or drainage work now in use, shall be made only in accordance with the approved rules.

SEC. 1704.2 - RIGHT OF ENTRY. The Director or his authorized representative shall be granted the right of entry to any building or premises at any reasonable hour to permit the inspection or re-inspection of the plumbing, drainage and gas piping.

SEC. 1704.3 - COVERING-UP WORK. No drainage, plumbing or gas piping systems or part thereof shall be covered or concealed until it has been inspected, tested and approved.

SEC. 1704.4 - UNSAFE SYSTEMS. Whenever inspection or test of existing or new installations of plumbing, gas sewer, or drainage materials or fixtures reveals the installation to be defective, damaged, or hazardous to the health or safety; the work shall be corrected immediately after the issuance of a written notice of violation to the person to whom the permit was issued or to the owner or both.

SEC. 1705.0 - PERMITS AND CERTIFICATES OF APPROVAL.

SEC. 1705.1 - APPROVED PLANS. Before any work is commenced on plumbing, drainage and gas piping installations which require the submission of plans, a permit shall be secured from the Director and such permit with a stamped and approved copy of the plans shall be available at the construction site at all times.

SEC. 1705.2 - AMENDED PLANS. All plumbing, drainage and gas piping installations shall be installed in accordance with the plans as approved and any changes made during construction which are not in conformity to the approved plans shall be resubmitted for approval on amended plans.

SEC. 1705.3 - CERTIFICATE OF APPROVAL. After the prescribed tests and final inspection indicate the work complies in all respects with the provisions of this Code and the approved rules adopted thereunder, a certificate of approval and acceptance shall be issued by the Director.

SEC. 1705.4 - NOTICE OF COMMENCEMENT AND COMPLETION. The Director shall be notified of the commencement of any plumbing or gas piping work, and when such work is completed or ready for inspection. All such notices shall be confirmed in writing and shall be part of the official record of the application and permit, and the application for final inspection of plumbing or drainage work shall be filed in the office of the Director by the plumber or drain layer within forty-eight (48) hours after the work is completed.

SEC. 1705.5 - VIOLATIONS. If work is installed contrary to the approved plans in any essential details, the owner, general contractor, supervising engineer or architect and the master plumber shall all and severally be deemed to be in violation of this Code and subject to the penalties provided in Section 122.0 until amended plans are filed and approved.

SEC. 1706.0 - EXISTING BUILDINGS AND INSTALLATIONS.

SEC. 1706.1 - COMPLIANCE WITH CODE. When alterations are made in an existing building or structure requiring the addition of any two (2) or

more plumbing fixtures, or one (1) or more water-flush closets, or when a new bathroom is installed, or a building is remodeled for an extension in size or change in use, in which plumbing, drainage or gas piping work is involved, the new work shall be made to conform to all the applicable sanitary requirements of this Code subject to the limitations of Section 1703.6. All repairs, changes or modifications of and all additions to any plumbing or drainage work now in use, shall be made only in such manner as shall be satisfactory to the Director.

SEC. 1706.2 - UNSAFE INSTALLATIONS. Any existing installation of plumbing, drainage or gas piping systems deemed unsafe and dangerous to the public health or safety in whole or in part, shall be made to comply with the provisions of this article or the approved rules.

SEC. 1706.3 - EXISTING DRAINAGE NUISANCES. Any surface or roof drainage which creates a structural or health hazard, or any other nuisance to the owners or occupants of adjacent premises, or to the public by reason of discharge into, onto or across any adjacent building, premises or public thoroughfare shall be abated by the owners of the improperly drained area; and the Director shall require the drainage to be disposed of in accordance with the provisions of this article.

SEC. 1706.4 - EXISTING SOIL AND VENT STACKS.

.41 When a new building is erected higher than an existing adjoining building, no windows or other wall openings shall be located nearer than fifteen (15) feet to an existing soil or vent stack on the lower building unless the owner of the new building makes the necessary provisions to conform to the requirements of this article and the provisions of Section 1306.0 at his own expense.

.42 When the existing adjoining building is of greater height than the new building, the owner of the structure of greater height may with the consent of the owner of the new structure extend all new soil, waste or vent stacks which are located within twenty (20) feet of the common lot line to a level above the higher existing roof.

.43 Approved fixed window assemblies of the required fire-resistive construction which comply with the provisions of Article 9 when permitted in lot line walls shall not be deemed wall openings within the meaning of this section.

SEC. 1706.5 - VENT STACKS. On all new work, and all old work where practical, all vent pipes that are to be installed to vent toilets on separate floors below shall be run (42) inches above the floors of existing toilets, or the additional toilets that could be installed. Said vent pipes shall be connected to the main vent pipe or extended through the roof fifteen (15) feet away from all windows.

SEC. 1707.0 - MASTER PLUMBER'S LICENSE

SEC. 1707.1 - LICENSE REQUIRED. No person, firm, or corporation shall contract for, install or supervise the installation of plumbing or drainage work unless one responsible member of such organization holds a license as a master plumber granted by the State Board of Plumbing Examiners as provided for in Chapter 1661 and the Public Laws of the State of Rhode Island, known as the Plumbing Laws of 1945 and in accordance with the provisions of said act.

No person not duly licensed as a plumber or drain-layer under the laws and ordinances pertaining to the City of Providence, shall advertise or represent in any form or manner that he is a plumber or a drain-layer in said city.

SEC. 1707.2 - AFFIDAVIT AND CERTIFICATION. It shall be unlawful to commence any plumbing or drainage work except as provided in Section 1700.2 until a licensed plumber has signed the specifications and filed an affidavit containing the address of said plumber and certifying that he is duly authorized to proceed with the work, and has secured a permit therefor from the Director.

SEC. 1707.3 - APPLICATION BY PROXY. It shall be unlawful for any licensed and registered plumber to sign the plumbing specifications or to act as agent for any other plumber who has not been granted a license as an employing or master plumber.

SEC. 1707.4 - CANCELLATION OF LICENSE. The Director may recommend the cancellation of a certificate or registration of such licensed plumber upon violation the provisions of Section 1707.3.

SEC. 1708.0 - SEWER AND WATER SUPPLY DATA

SEC. 1708.1 - PUBLIC SEWER. Plans for new plumbing systems or alterations to existing plumbing systems shall be accompanied by a diagram showing the relative elevation of the lowest fixture and the top of the public sewer referred to the established datum of Providence, when such public sewer is available. The plans shall show the size, number and location of all new sewer connections and the minimum water pressure in the main in front of the building or structure.

SEC. 1708.2 - WATER MAIN. When the installation of a water distribution system or the replacement or alteration of a water supply system is contemplated, the plans shall show the location and size of all the water lines and branches involved, and the fixtures or other devices to be supplied.

SEC. 1708.3 - IDENTICAL STRUCTURES. The same set of plumbing, water supply or gas piping plans and specifications can be used for two (2) or more buildings or structures, when the buildings are exactly similar and are located on adjoining lots, and are under the same ownership; provided the applications for permission to construct or alter are filed simultaneously.

SEC. 1709.0 - SOIL AND WASTE PIPES

SEC. 1709.1 - MAIN SOIL STACK. Every building and structure shall have at least one four (4) inch main soil or waste stack extending from the building drain to and through the roof as directly as possible and as provided in Section 1706.4 for existing soil and vent stacks. When installed in the exterior walls of the building, or located in any place subject to freezing temperatures, adequate protection shall be provided from frost as specified in the approved rules.

SEC. 1709.2 - ROOF EXTENSION. All roof extensions of soil and waste stacks shall project full size at least 18" inch above the roof; except that when the roof is used for other purposes than weather protection such extension shall be not less than seven (7) feet above the roof; and when the roof terminal of any stack is located within six (6) feet of any door scuttle or air shaft, it shall extend not less than three (3) feet above such opening. In no case shall a waste or vent stack terminate

under a cornice or other overhang of a building.

SEC. 1709.4 - PROHIBITED USE. No vent pipe or vent pipe stack shall be used as a soil waste or drainage pipe except as provided in the approved rules.

SEC. 1709.5 - CONSTRUCTION OF SOIL AND WASTE LINES. All soil pipes and waste pipes and their branches shall conform to table 1714.24 except in manufacturing establishment where acids are used, in which case only approved materials shall be used. Wood spouts or sheet metal pipes shall not be used for carrying sewage. All soil pipes and waste pipes not connected with soil pipes shall be extended full bore and 18" above the roof, without return bend, and all pipes shall be properly flashed, with approved roof flashings.

Extra Heavy Cast Iron Underground Minimum size 3" inch.

SEC. 1709.7 - STAINLESS STEEL WATER-DWV TUBING IN ACCORDANCE WITH ASTM A-263 TP 409, HEAVY DUTY GRADE "H". Tubing shall be color coded blue and shall be indelibly marked at intervals not greater than 3 feet, in letters not less than 3/16" high with the name or Trade Mark of the manufacturer, the ASTM designation, alloy type, nominal diameter and grade. The name or Trade Mark of the manufacturer and the grade designation shall be permanently incised in each tube at intervals not greater than 18".

SEC. 1710.0 - SEWERS AND SEWER CONNECTIONS

SEC. 1710.1 - GRAVITY FLOW. The discharge from all plumbing fixtures, roof drains, seepage lines and all other drains on the premises shall flow by gravity through properly installed piping to a public sewer, private sewer or other approved disposal terminal as herein provided and in accordance with the approved rules, and the inclination of all drains, soil, and waste pipes, and unless otherwise approved shall be not less than one-half (1/2) inch in two (2) feet.

SEC. 1710.2 - SUMPS. All parts of a plumbing or drainage system which cannot be drained by gravity lines with a minimum pitch meeting the requirements of the approved rules shall discharge into a tightly covered

cast iron vented sump or receiving tank from which the discharge shall be pumped into the parts of the system which flow by gravity. This requirement shall not prohibit installation of plumbing and drainage devices required by Section 1717.3 to overcome back-water hazards. When ejectors or similar appliances are installed on drainage systems, there shall be a fresh air inlet pipe installed, which is the same size as the waste pipe to the sump, but not less than four (4) inch size for toilet work. The location and construction shall be approved. There shall be a check valve and gate valve installed on the horizontal drainage side of the ejector before entering the main drain or sewer.

SEC. 1710.3 - INDEPENDENT SYSTEM. The plumbing and drainage system of each new building and of all new plumbing work installed in an existing building shall be separate from and independent of that of any other building except as herein provided, and every building and structure shall have an independent connection with a public or private sewer when available. When front or rear buildings are located on the same interior lot, and no separate private sewer is available or can be constructed for either the front or rear building, as the case may be, through an adjoining court, yard, or driveway, the building drain from the one building may be extended to the other building. When required, the drain connections to a building shall be trapped with a running trap of the same size and material as the drain, and such trap shall be provided with a cleanout for convenience in cleaning. No connection shall be made with such drain on the street side of said trap except as approved. In such case there shall be a fresh air pipe on the house side of and close to said trap, of a diameter of not less than four (4) inches leading to the outer air in an approved manner and place.

SEC. 1710.4 - CONSTRUCTION OF SEWERS AND CONNECTIONS. The building sewers and drains shall not be located adjacent to footings in such manner as to weaken the foundations of an exterior or interior bearing wall or otherwise impair the structural strength of the building; and shall be constructed in approved manner and of the materials meeting the requirements of the approved rules. Underground drain for water and sewage, except in manufacturing establishments where acids are used, shall be tar coated cast-iron (extra heavy) where within the building and for a distance of not less than three (3) feet outside of the foundation walls

thereof; cast-iron joints shall be run of molten lead, caulked and made tight, such cast-iron drains shall be sound, cylindrical, of a uniform thickness, and of weights per lineal foot not less than the following three (3) inches- nine and one-half (9-1/2) pounds per foot; four (4) inches - thirteen (13) pounds per foot; five (5) inches - seventeen (17) pounds per foot; six (6) inches - twenty (20) pounds per foot; with approved increase in weights for larger diameters.

Drains in manufacturing establishments where acids are used shall be of a material and construction satisfactory to the Director; earthenware drains when used by permission for acid wastes shall be of the best hard-burned vitrified clay and all joints shall be made with Portland or hydraulic cement and sand mixed in proper quantities. In all drain pipes, connections and changed in direction shall be made with Y branches and approved bends.

SEC. 1711.0 - SEPTIC TANKS AND CESSPOOLS.

SEC. 1711.1 - WHERE PERMITTED. Septic tanks, cesspools, disposal fields and other private sewage disposal systems constructed and installed in accordance with the approved rules shall be permitted only after special approval has been issued therefor, and when no public sewer is available, or no right of way can be secured by easement through adjoining property to a public sewer.

SEC. 1711.2 - DISCONTINUANCE. The use of septic tanks shall be discontinued when facilities for public sewerage lines are made available wither on abutting property, or by grant of right of way, or by easement.

SEC. 1711.3 - INSPECTION AND APPROVAL. Septic tanks and disposal beds shall be installed under the supervision of a master plumber and shall be subject to inspection and approved by the Director or by an accredited authorized agent. When approved, every cesspool shall be built of stone, brick or other approved material, and provided with an ironcover, which can readily be removed, so that the contents may be inspected. No cesspool shall be built within ten (10) feet of a building, and no connection of plumbing or drainage shall be made with any cesspool unless the location and construction of said cesspool has been approved and a drain permit filed to connect to same.

SEC. 1711.4, - LOCATION. No private sewage disposal system shall be constructed within seventy-five (75) feet of a well for potable water supplies or of any human habitation other than the building or structure served thereby, without approval of the Director and the Superintendent of Health.

SEC. 1712.0 - CLEANOUTS

SEC. 1712.1 - SOIL AND WASTE LINES. Every horizontal soil or waste line which changes its direction ninety (90) degrees in a horizontal plane and every such line changing from a vertical to a horizontal direction shall be equipped with a cleanout at the point of change of direction; except that any fixture branch, soil or waste line less than eight (8) feet long shall be exempted from this requirement. There shall be cleanouts provided in the house drain, one made with a full Y branch of not less than four (4) inches in size, just inside the foundation wall where the drain enters the building, and the others near the end of the house drain or at the base of each soil or waste stack. The distance between cleanouts shall not exceed fifty (50) feet, and cleanouts shall be of heavy pattern iron pipe size, with brass screw cover. All cleanouts inside of building shall be made accessible above grade of cellar floor.

SEC. 1712.2 - DRAINAGE PIPING. All horizontal drainage piping installed within the floor construction of any building or beneath the basement floor shall be equipped with approved accessible cleanout facilities installed at maximum intervals of fifty (50) feet. When tile pipe is used beneath the basement floor for acid lines, the inside of every drain pipe, after it is laid, shall be left smooth and perfectly clean throughout its entire length, and to insure the same a scraper of suitable material, of the shape of the pipe and slightly less in diameter, shall be drawn through each length of the pipe after the same is laid. All openings not used shall be properly sealed. No drain or any part thereof shall be laid within five (5) feet of a cold air box of a furnace or other heater, and no cold air box shall be constructed or placed within five (5) feet of any drain, unless such construction and location is first approved.

SEC. 1712.3 - STACK RISERS. All vertical stacks shall have cleanouts at the foot of the riser, which shall be accessible at all times. All cleanouts shall be of the same size as the stack.

SEC. 1713.0 - SEPARATORS AND INTERCEPTORS

SEC. 1713.1 - HARMFUL WASTES. All wastes, other than those from residential kitchen sinks, which carry materials that may congeal, coagulate or accumulate in drains or sewers, or retard the flow and create stoppages or which retard the normal sewage disposal process, or create explosive, flammable or otherwise hazardous or unhealthful mixtures of gases or liquids shall be discharged through an approved interceptor or other acceptable separating device to segregate and retain the harmful or deleterious materials from the normal wastes as herein provided or as specified in Section 1723.0 for special wastes. The interceptors shall be vented.

SEC. 1713.2 - CLEANING AND MAINTENANCE. All separators shall be periodically cleaned of the intercepted materials at necessary intervals as provided in the approved rules to prevent the discharge of harmful contents into the plumbing, drainage or sewerage systems; and a record of such cleanouts shall be made available to the administrative official having jurisdiction.

SEC. 1713.3 - GREASE SEPARATORS. Grease interceptors of approved types shall be provided in all institutional or commercial establishments in which grease, fats, or oils are waste products from food-cookery or material-processing, or in which grease, fats or oils are discharged in connection with utensil, vat, dish or floor cleansing processes. The Grease Separators shall be vented.

SEC. 1713.4 - OIL SEPARATORS. Interceptors of approved type shall be provided to segregate and retain all oil and flammable liquids in all commercial, storage or repair garages, gasoline service stations with grease racks, grease pits or wash racks, auto laundries and all factories which produce oily or flammable wastes as a result of manufacturing storage, maintenance, repair or testing processes, shall be connected with suitable water tight catch basins, the bottoms of which shall be not less than two and one-half (2-1/2) feet below the outlet pipe, with a dip of

not less than eighteen (18) inches. The size, form and construction shall be as approved. Catch basin shall be vented on Inlet side.

SEC. 1713.5 - GARBAGE GRINDERS. The discharge from a garbage grinder shall connect directly to a waste line or stack with an approved trap and vent.

SEC. 1713.6 - BLOW-OFF CONDENSERS. All exhaust and drips from steam engines, and all blow-off from steam boilers, or waste from any device shall first be connect to a cooling tank in a suitable location with an approved automatic cooling device connect to the cold water line, to reduce the temperature to less than 130 degrees F. before discharging into the drain or sewer. All such construction shall be approved, and in no case shall it be allowed to connect directly with any public or private sewer. Cooling tank trap shall be vented and install check and gate on sewer side of trap.

SEC. 1714.0 - GENERAL CONSTRUCTION OF PLUMBING SYSTEMS

SEC. 1714.1 - QUALITY OF MATERIALS. The materials used in all drainage, plumbing and gas piping systems shall be free rom manufacturing defects, and damage incurred in shipping, handling or installation; and conform to the approved rules as to kind, quality and methods of fabrication. The applicable provisions of the standards cited in Table 1714.24 shall be deemed to comply with the requirements of this article.

SEC. 1714.2 - NEW MATERIALS. The intent of the provisions of this article is to permit the use of all approved materials for piping, connections, devices, fixtures and methods of fabrication and installation complying with the approved rules. All new materials and methods not specifically provided herein for use in plumbing, drainage and gas piping systems shall be tested and approved for strenght, durability, sanitary imperviousness, gas and fluid tightness in accordance with the approved rules.

SEC. 1714.21 - Alternate fixtures, Appurtenances, Materials and Methods - the provisions of this code are not intended to prevent the use of fixtures, appurtenances, materials, or methods not specifically authorized or prescribed by this code providing such alternate has been approved

by the Director.

The Director shall require sufficient evidence and tests to substantiate any claims that such alternate fixtures, appurtenances, materials or methods are of such design or quality or both, as to be suitable, safe and sanitary for the use intended and is for the purpose intended equivalent in quality, strength, effectiveness, durability and safety to that prescribed by this code.

SEC. 1714.22 - MINIMUM STANDARDS. Materials shall conform at least to the standards cited in this Chapter which shall be considered minimum standards, when used in the construction, installation, alteration or repair of plumbing and drainage systems or parts thereof except that

- a. The Director shall allow the extension, to or relocation of existing water, soil, waste or vent pipes with materials of like grade or quality as permitted in Section 1706.1.
- b. Materials not covered by the standards cited in the Chapter may be used with the approval of the Director as permitted in Section 1714.2.

SEC. 1714.23 - APPLICABLE STANDARDS - A material shall be considered approved if it meet one or more of the standards cited in Table 1714.24 Standards for Plumbing Materials and in the case of plastic pipe, the Standards of the National Sanitation Foundation. Materials not used in Table 1714.24 shall be used only as provided for in Section 1714.21 or as permitted elsewhere in this Code.

1714.24

Description	ANSI	ASTM	FS	Other
Ferrous Pipe and Fittings				
Cast iron soil pipe and fittings, extra heavy and service weights	A40.1-1935	A74-66	WW-P-401(c)-1951	CS 188-59.
Hubless cast iron soil pipe and fittings	None	None	None	CISPI 301
Cast iron water pipe	A21.2-1953	None	WW-P-421a-1955	None
Cast Iron water pipe (cast in metal molds)	A21.6-1962	None	None	AWWA C106-62
Cast iron water pipe (cast in sand lined molds)	A21.8-1962	None	None	AWWA C108-62
Cast iron water pipe fitting	A21.10-1964	None	None	AWWA C110-64
Cast iron water pipe (2" & 2½")	A21.12-1965	None	None	AWWA C112-65
Cast iron pipe, drainage, vent & waste	None	None	WW-P-356-1936	None
Cast iron pipe, pressure (50 lb.) (gas and water)	None	None	WW-P-360a-1959	None
Cast iron (threaded) pipe, D.W.V.	A40.5-1943	None	WW-P-356-1936	None
Cast iron (threaded) fittings	B16.4-1963	None	WW-P-501c(1)-1957	None
Cast iron drainage fittings (threaded)	B16.12-1965	None	WW-P-491a(1)-1946	None
Galvanized pipe and fittings	None	None	WW-P-406(1)-1945	None
Malleable iron fitting, (threaded) 150 lbs.	B16.3-1966	None	WW-P-521d-1959	None
* Steel pipe	B36.1-1966	A53-67	WW-P-406a-1957	ASME SA 53
Steel pipe (seamless and welded, black and zinc coated) (galv.)	B36.20-1966	A120-66	WW-P-406b-1961	None

TABLE 1714.24. (continued)-----STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
Union, pipe steel, or malleable iron, threaded pipe connection 250 psi, WSP, 500 psi WOG (cold, nonschock)	None	None	WW-O-531a-1957	None
Unions; malleable iron or steel 300 lbs.	None	None	WW-U-536(1)-1933	CS7-29
Wrought-iron pipe	B36.2-1966	A72-66	WW-P-441b(1)-1953	None
Valves, cast iron, gate, 125 and 250 lb. threaded and flanged	None	None	WW-V-58(1)-1946	None
Pipe fittings, bronze and ferrous (bushings, plugs and locknuts); threaded	None	None	WW-P-471 (1)-1946	None
Nipples, pipe, threaded	None	None	WW-N-351a-1956	CS5-46
Non-ferrous Metallic pipe and Fittings				
Brass fittings for flared copper tube	B16.26-1964	None	None	None
Seamless brass tube	H36.1-1967 ¹	B135-67	WW-T-791(1)-1933	None
Seamless red brass pipe	H27.1-1967 ¹	B43-66	WW-P-351(1)-1930	ASME SB43
Brass or bronze flanges and flanged fittings, 150 and 300 lbs.	B16.24-1962	None	None	None
Brass or bronze screwed fittings, 125 and 250 lbs.	B16.15-1964	None	WW-P-460-1945	None
Cast-bronze solder-joint pressure fittings	B16.18-1963	None	None	None

¹ASA H 23.4-1964 is applicable to and forms a part of the standards indicated.

Table 1714.24 (Continued)-----STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
General requirements for wrought seamless copper and copper alloy pipe and tube	H23.4-1967 ¹	B251-67	None	None
Cast-bronze solder-joint drainage fittings	B16.23-1960	None	None	None
Copper pipe	H26.1-1967 ¹	B42-66	WW-P-377b(1)-1955	ASME SB42
Copper pipe, threadless (TP)	H26.2-1967	B302-66a	None	None
Seamless copper tube	H23.3-1967	B75-66	WW-T-797a-1958	None
Copper water tube, types K,L,M	H23.1-1967	B88-66a	WW-T-799a(1)-1946	None
Copper drainage tube, type DWV	H23.6-1967	B306-66a	None	CS-229-60
Copper (wrought) and wrought bronze solder joint fittings	B16.22-1963	None	None	None
Wrought copper and bronze solder joint drainage fittings	B16.23-1960	None	None	None
Flared fittings for copper water tube	B16.26-1958	None	None	None
Lead pipe and traps	None	None	WW-P-325-1944	CS95-41 CS96-41
Unions, brass or bronze, 250 lbs.	None	None	WW-U-516-1933	None
Valves, bronze; angle, check and globe, 125 and 150 lbs., threaded and flanged	None	None	WW-V-51a(2)-1954	None
Valves, bronze; gate, 125 and 150 lbs., threaded and flanged	None	None	WW-V-54(2)-1954	None

SA H 23.4-1964 is applicable to and forms a part of the standards indicated.

Table 1714.24 (Continued)- STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
Pipe fittings, bronze and ferrous (bushings, plugs and locknuts); threaded	None	None	WW-P-471(1)1946	None
Non-Metallic Pipe and Fittings				
Asbestos cement non-pressure (sewer) pipe	None	C428-67T	SS-P-331b(2)-1965	None
Asbestos cement building sewer pipe ²	None	None	None	None
Asbestos cement pressure (water) pipe	None	C-296-65T	SS-P-351a-1953	AWWA C400-64T
Bituminized fiber sewer pipe and fittings	None	D1861-64 D1862-64	SS-P-356-1955	CS116-54 CS226-59
Perforated bituminized fiber pipe for septic tank disposal fields	None	D2312-65 D2313-65	None	None
Clay drain tile	A6.1-1963	C4-62	SS-T-310-1942	None
Concrete sewer pipe, reinforced	None	C76-67	SS-P-375-1956	None
Concrete sewer pipe, non-reinforced	None	C14-67	SS-P-371a-1956	None
Concrete pipe, pressure, reinforced concrete, pretensioned reinforcement (steel cylinder type)	None	None	SS-P-381-1955	None
Perforated asbestos cement pipe	None	C-508-67	None	None

²Asbestos-Cement building sewer pipe in sizes 4", 5", and 6", Classes 1500, 2400, and 3300 shall meet a minimum crushing strength of 1500 lbs, per ft, for Class 1500, 2400 lbs, per ft. for Class 2400, and 3300 lbs, per ft, for Class 3300 when tested in accordance with Section 10 of ASTM C500-63 "Methods of Testing Asbestos Cement Pipe." Standard lengths shall be 5, 6.5, 10, or 13 ft.

Table 1714.24 (Continued)---STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
Plastic water service, acrylonitrile-butadiene-styrene (ABS) pipe and fittings	B72.3-1967	D1527-68 D2282-68	None	CS218-59 CS254-63 NSF 14 (1965)
Plastic water service, polyethylene (PE) pipe and fittings	B72.1-1967	D2104-68 D2239-68	L-P-00315b-1967	CS197-60 CS255-63 NSF 14 (1965) PS 10-69 PS 11-69 PS 12-69
Plastic water service, polyvinyl chloride (PVC) pipe and fittings	B72.2-1967	D1785-68 D2241-68	L-P-1036(1)-1968	CS207-60 CS256-63 NSF 14 (1965)
ABS Schedule 40 DWV, acrylonitrile-butadiene-styrene (ABS) drain, waste and vent pipe and fittings	None	D2661-68	L-P-322a-66	CS270-65 NSF 14 (1965)
PVC Schedule 40 DWV, polyvinyl chloride (PVC) drain, waste and vent pipe and fittings	None	D2265-68	L-P-320a-66	CS272-65 NSF 14 (1965)
ABS Sewer Pipe acrylonitrile-butadiene-styrene (ABS) Schedule 40 pipe and fittings	None	D2661-68	L-P-322a-66	CS270-65 NSF 14 (1965)
PVC Sewer Pipe polyvinyl-chloride (PVC) Schedule 40 pipe and fittings	None	D2665-68	L-P-320a-66	CS272-65 NSF 14 (1965)

Table 1714.24 (Continued)---STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
Vitrified clay sewer pipe standard strength	A106.3-1965	C13-65	SS-P-361b-1956	None
Vitrified clay sewer pipe, extra strength	None	C200-65T	SS-P-361b-1965	None
Vitrified clay sewer pipe, perforated standard strength	A106.1-1962	C211-61T	None	CS143-59
Plumbing Fixtures				
Drinking fountains	Z4.2-1942	None	None	None
Enameled cast-iron plumbing fixtures	None	None	None	CS77-63
Earthenware (vitreous glazed) plumbing fixtures	None	None	None	CS111-43
Formed metal porcelain enameled sanitary ware	None	None	WW-P-541b(2)-1958	None
Heaters, water, instantaneous (Steam-water converter type)	None	None	WW-H-191-1954	None
Plumbing fixtures (for land use)	None	None	WW-P-541b(2)-1958	None
Staple porcelain plumbing fixtures	None	None	None	CS4-29
Staple vitreous China plumbing fixtures	None	None	None	CS20-63
Stills, water; portable (without Heating device) for U.S.P. "distilled water"	None	None	RR-S-726(1)-1950	None
Porcelain-enameled tanks for domestic use	None	None	None	CS115-60
Polyester Resin, Bathtub units	Z124.1-67	None	None	None
Polyester Resin, Shower units	Z124.2-67	None	None	None

Table 1714.24 (Continued)---STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
Rubber gaskets (concrete sewer pipe)	None	C443-67	None	None
Rubber gasket (cast iron soil pipe and fittings)	None	C564-65	None	None
Sheet brass	None	B36-67 B121-66	QQ-B-613a-1957	None
Sheet Copper	None	B152-66	QQ-C-501	None
Sheet Lead, grade A	None	None	QQ-L-201a(1)-1953	None
Soft Solder	None	B32-66T	QQ-S-571c-1958	None
Solvent Cement for Acrylonitrile-Butadiene- Styrene (ABS) Plastic pipe and fittings	None	D2235-63T	None	None
Steel septic tanks	None	None	None	CS177-51
Traps, steam, thermostatic (for land use)	None	None	WW-T-696a-1956	None
Valve: radiator, air, thermostatic (gravity steam heating systems)	None	None	WW-V-151(1)-1938	None
Domestic Hot Water Heaters	Z21.10.1-1966 Z21.10.2a-1966	None	W-H-196-1952	None
Water Hammer arrestors	None	None	None	PDI-WH 201
Water pressure reducing valves for domestic water supply systems	None	None	None	ASSE 1003- Oct.1964

Table 1714.24 (continued)-----STANDARDS FOR PLUMBING MATERIALS

Description	ANSI	ASTM	FS	Other
Miscellaneous materials and Standards				
Automatic relief valves	Z21.22-1964 Z21.22a-1965	None	None	None
Air gap standards	A40.4-1942	None	None	None
Backflow preventers	A40.6-1943	None	None	None
Brass cleanout plugs	None	None	WW-P-401(3)-1951	None
Caulking lead, type I	None	None	QQ-L-156(1)-1946	CS94-41
Cement lining for C.I. pipe	A21.4-1964	None	WW-P-406a-1957	AWWA C104
Coal-tar enamel, protective coating	None	None	None	AWWA C204-51
Fixture setting compound	None	None	HH-C-536a-1954	None
Flange dimensions, standard (classes 125 and 250 cast iron flanges, classes 150,250 and 300 bronze flanges) (land use)	None	None	WW-F-406a(1)-1943	None
Galvanized iron and steel sheets	G8.8-1937	A163-66	QQ-1-716(3)-1948	None
Gaskets, plumbing- fixture-setting	None	None	HH-G-116-1936	None
Grease interceptors	None	None	None	PDI-G101
Hangers and supports, pipe	None	None	WW-H-171B-1959	None
Hose clamps	None	None	WW-C-440a-1959	None
Resilient joints	None	C425-66T	None	None

SEC. 1714.25 - ABBREVIATIONS - Abbreviations in Table 1714.24 refer to the following organizations:

- ASME - American Society of Mechanical Engineers
345 East 47 Street
New York, New York 10017
- ANSI - American Standards Institute, Inc.
1430 Broadway
New York, New York 10018
- ASTM - American Society for Testing Materials
1916 Race Street
Philadelphia 3, Pennsylvania
- AWWA - American Water Works Association
2 Park Avenue
New York, New York 10016
- CS* - Commercial Standards
Commodity Standards Division
Office of Industry and Commerce
U.S. Department of Commerce
Washington, D.C. 20025
- FS* - Federal Supply Service
Standards Division
General Services Administration
Washington, D.C. 20025
- NSF - National Sanitation Foundation
Testing Laboratory, Inc.
School of Public Health
P. O. Box 1468
Ann Arbor, Michigan
- PDI - Plumbing and Drainage Institute
1018 N. Austin Blvd.
Oak Park, Illinois 60302
- USASI - United States of America Standards Institute
70 East 45th Street
New York, New York, 17

* Standards are available from the Supt. of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

SEC. 1714.26 - DESCRIPTION OF TERMS OF STANDARDS - ASTM Standards are issued under fixed designations; the final number indicates the year of original adoption, or in the case of revision, the year of last revision. "T" indicates Tentative. In the "CS" series of standards, also, the final number indicates the year of issued. For Federal Specifications, the year latest revision or amendment.

SEC. 1714.27 - CHANGES IN STANDARDS - All standards and specifications for materials are subject to change. Designations carrying indications of the year of issue may thus become obsolete. Section 1714.24 gives the full designations of standards current at the time this code is printed. Standards listed herein should be reviewed annually for current designations and brought up to date as required. Materials shall be

identified as provided in the standard to which they conform.

SEC. 1714.28 - WATER SERVICE PIPE - Water service shall be made of asbestos cement pipe, brass pipe, copper pipe, copper tube, cast iron water pipe, wrought iron pipe, open-hearth iron pipe, plastic pipe, lead pipe or steel pipe. Copper tube when used underground shall have a weight not less than copper water tube Type L. All threaded ferrous pipe and fittings shall be galvanized or cement lined. When used underground in corrosive soil or fill, the piping material and/or protective coating or covering shall be approved by Administrative Authority.

SEC. 1714.29 - WATER DISTRIBUTION SYSTEM PIPE - The water distribution system shall be of brass, or copper pipe, copper tube, galvanized wrought iron pipe, galvanized open-hearth iron pipe, galvanized steel pipe, lead pipe or plastic cold water pipe. Copper tube used underground shall have a weight of not less than copper water tube Type L and above ground shall have a weight of not less than copper water tube Type M.

SEC. 1714.29A - ABOVE GROUND PIPING WITHIN BUILDINGS - Soil and waste piping above ground in buildings shall be brass or copper pipe, copper tube having a weight of not less than that of copper drainage tube Type DWV, cast iron pipe, galvanized wrought iron pipe, galvanized open hearth iron pipe, galvanized steel pipe, lead pipe, ABS plastic or PVC plastic pipe.

SEC. 1714.29B - BUILDING STORM SEWER - The building storm sewer, shall be of cast iron soil pipe, vitrified clay pipe, concrete pipe, bituminized fiber pipe, plastic pipe or asbestos cement pipe.

SEC. 1714.29C - ABOVE GROUND VENTING - Vent piping installed above ground shall be of brass or copper pipe, copper tube having a weight of not less than that of copper drainage tube Type DWV, cast iron pipe, galvanized steel pipe, galvanized wrought iron pipe, galvanized open-hearth iron pipe, lead pipe, ABS plastic pipe or PVC plastic pipe.

SEC. 1714.29D - UNDERGROUND VENTING - Underground vent piping shall be of cast iron pipe, copper tube of a weight not less than that of copper water tube Type L, hard temper, or other approved material, properly installed. Where threaded joints are used underground, they shall be coal tar coated and wrapped after installation and tests.

SEC. 1714.29E - INSIDE CONDUCTORS - Inside conductors installed above ground level shall be of brass or copper pipe, copper tube of a weight not less than that of copper drainage tube, Type DWV, cast iron pipe, lead pipe, galvanized open-hearth iron pipe, galvanized steel pipe, galvanized wrought iron pipe, ABS plastic pipe or PVC plastic pipe.

SEC. 1714.3 - GENERAL PIPING - Each length of pipe and the fittings, traps, fixtures, and other devices used in plumbing drainage or gas piping system shall be stamped or indelibly marked with the weight, quality of material and the manufacturers' name or trade mark and shall be visible at time of inspection for approval.

SEC. 1714.30 - PIPING IN MASONRY - Piping which is installed in and parallel to the faces of reinforced concrete or masonry wall shall be installed in adequately sized pipe spaces, contained in the concrete or masonry walls. Said pipe spaces shall be accessible, or it shall be otherwise installed free of the reinforced concrete or masonry.

.31 - Horizontal Piping. All horizontal piping in plumbing and drainage systems shall be run in practical alignment at a uniform grade of not less than one-quarter ($1/4$) inch per foot, and for conductor or clean water drains may be run at one-eighth ($1/8$) inch per foot; and without pockets or pits.

.32 - Changes in Direction. All changes in direction of soil, waste and drainage piping shall be made by the appropriate use of forty-five (45) degree wyes, half-wyes, long sweep quarter bends; or other appropriate connections unless otherwise specifically provided in this section and the approved rules adopted thereunder.

.33 - Changes from Horizontal to Vertical. In soil and waste lines where the change in direction of flow is from either the horizontal to the vertical or from the vertical to the horizontal and for making offsets between the ceiling and the next floor above, short quarter bends of not less than two (2) inches diameter, may be used.

.34 - Vertical Stacks. In vertical waste stacks not less than four (4) inches in diameter intended for floor outlet fixtures only, a single sanitary tee-wye, or a double sanitary tee-wye, may be used; and when the stack is not less than four (4) inches in diameter intended for wall outlet fixtures only, with a fixture rating of not less than thirty (30) as specified in TABLE 26 tapped or caulked double sanitary tee-wyes, and sanitary tee-wye, may be used.

.35 - Crosses and Quarter Bends. In vent pipe systems, tees, crosses and quarter bends may be used.

.36 - Prohibited Fittings. No double hub, double tee, sanitary tee or short radius ninety (90) degree ells shall be used in horizontal runs; and the use of inverted hubs, saddle hubs, bands, drilling welding or tapping of soil or waste pipe for the entrance of wastes shall be prohibited.

.37 - Lavatories. Lavatories may be connected either to horizontal or vertical waste piping by means of sanitary tee-wyes.

SEC. 1714.4 - HANGERS AND SUPPORTS. All pipe and fixture hangers shall be fabricated of metal or other approved incombustible material of heavy pattern, and shall be securely attached to the building construction in accordance with the approved rules.

SEC. 1714.5 - JOINTS AND CONNECTIONS. All joints and connections in plumbing, drainage and gas piping systems shall be made permanently gas and water tight under the required test pressures and shall be fabricated as specified in the approved rules. Cast-iron soil pipes, waste pipes; or vent pipes, before being put in place, shall be coated inside and outside with coal tar pitch, applied hot, except by special permission; wrought iron or steel soil pipes, waste pipes or vent pipes shall be galvanized, and not less than standard iron pipe size. All joints on cast iron pipes shall be run with molten lead, caulked and made tight. All joints on brass, wrought iron, steel soil or waste-pipes shall be made by screwing the same into special cast-iron fittings, having interior shoulders, forming flushed joints and made tight, connections of lead pipes with iron, steel, or brass pipes shall be made with brass ferrules or brass soldering nipples, all joints shall be approved wiped joints. All fixtures for branches and changes in direction in soil waste or vent pipes shall be of approved type fittings.

Copper tubing joined to C.I. soil pipe and screwed pipe joints shall be made by using brass caulking ferrules or brass converter fittings.

The joint between the copper pipe and the fitting shall be properly sweated or soldered.

.51 - Threaded Joints - Threaded joints in cast iron, malleable iron, brass or other approved piping shall be of American Standard pipe thread and where malleable iron or steel is used for water supply, waste and vent lines, it shall be galvanized.

.52 - Welded and Brazed Joints. - Brazed joints shall be permitted in copper water pipes, in accordance with the approved rules.

.53 - Caulked Joints - Caulked joints in cast iron, clay concrete or other piping shall be firmly packed with asbestos or other approved materials. All joints in cast iron service pipes shall be of the lead and gasket caulked type. Cast Iron Pipe shall be caulked with Oakum and Molten lead.

.54 - Slip Joints - Slip joints shall be permitted only above the trap seal on the inlet side of the trap.

.55 - Cement Joints - Vitrified clay pipe connections shall have approved joints made with Oakum and Portland or Hydraulic cement and sand mixed in the proper quantities.

.56 - Lead Pipe Joints - Joints in lead or lead to copper and brass piping shall be full-wiped joints; cup joints shall be permitted only when approved. Joints of lead to cast-iron or steel or wrought-iron pipe shall be fabricated with approved ferrules, soldering nipples or bushings. When lead pipe is used for waste pipe above ground, it shall not be lighter than the following weights per lineal foot; 1-1/2 inches, 3 pounds per foot; 2 inches, 4 pounds per foot; 3 inches, 5 pounds per foot; 4 inches, 8 pounds per foot; with proportional increase of weight for greater diameters. All soil waste-pipes and vent pipes shall be entirely within the building unless otherwise approved.

.57 - Plastic - Every joint in plastic piping shall be made with approved fittings by either solvent welded or fusion welded connections, approved insert fittings and metal clamps and screws of corrosion resistant material, or threaded joints according to accepted standards.

SEC. 1714.6 - UNDERGROUND SOIL LINES - All underground soil piping shall be installed and constructed of materials with adequate strength, durability and corrosion-resistance for the service to be performed. No galvanized, copper, steel wrought iron, or lead pipe shall be used in underground soil or waste lines; and when used above ground, such pipe shall be installed not less than six (6) inches above ground.

SEC. 1715.0 - SANITARY FIXTURES.

Every building and structure designed for human occupancy and every construction operation shall be provided with a sufficient number of approved fixtures located and installed as required by the provisions of this article and in accordance with the approved rules, for the purpose of cleansing persons, apparel or utensils, providing potable water supplies and for the removal of human excreta and other wastes.

SEC. 1715.1 - NUMBER OF FIXTURES. The number of water-flushed toilet fixtures required for each sex shall be as specified in Table 22 and 23; and the requirements shall be separately computed on the basis of the maximum number of persons of each sex having access at any time to such facilities on the premises for which they are furnished.

.11 - Construction Operations. Within the first week of construction, demolition or repair work, not less than one (1) water-flushed toilet fixture per twenty (20) workmen shall be provided within easy access of their place of work, which shall be maintained at all times in a clean and sanitary condition.

.12 - General Uses. The number of fixtures required in buildings and structures of all use groups, except assembly uses (Use Group F1, F2 and F3) and residential uses (Use Groups L1, L2 and L3) shall not be less than required by Table 22.

TABLE 22
SANITARY FIXTURES FOR ALL USE GROUPS
OTHER THAN RESIDENTIAL AND ASSEMBLY

<u>FEMALE</u>			<u>MALE</u>			
<u>Occupancy Load</u>	<u>Water Closets</u>	<u>Lavatories</u>	<u>Occupancy Load</u>	<u>Water Closets</u>	<u>Urinals</u>	<u>Lavs</u>
1 - 20	1	1	1 - 25	1	1	1
21 - 40	2	1	26 - 50	2	1	2
41 - 60	3	2	51 - 75	3	2	3
61 - 90	4	3	75 - 100	4	2	3
91 - 120	6	4	101 - 125	5	3	4

Ratio of last listed capacity shall continue for greater number of male or female occupancies.

.13 - Other Uses. The number of fixtures required for buildings and structures of other Use Groups shall be not less than specified in Table 23 as follows:

TABLE 23

SANITARY FIXTURES FOR OTHER USES

USE GROUPS A (HIGH HAZARD), B (STORAGE) C (MERCANTILE)
D (INDUSTRIAL), E (BUSINESS),

1 water Closet	For each 25 males	Each Floor
1 water Closet	" " 20 females	" "
1 Lavatory	" " 20 persons	" "
1 Urinal	" " 25 males	" "
1 Drinking Fountain	" " 75 persons	" "

In foundries or places exposed to irritant materials provided 1 lavatory for each 8 persons in that area.

<u>USE GROUP F1 (THEATRES)</u>	<u>F2 ASSEMBLY HALLS)</u>	<u>In each case seating 300 persons or more</u>
1 Water Closet	For each 150 females	
1 Water Closet	For each 200 males	
1 Urinal	For each 200 males	
1 Lavatory	For each 150 persons	
1 Water Closet	For stage area for males	
1 Lavatory	For stage area for females	
1 Drinking Fountain	For stage area	
1 Drinking Fountain	Each level of Seating Area	

Fixtures must be on each floor or level, or may be on levels immediately above or below area served.

USE GROUP F3 (COMFORT STATIONS)

1 Water Closet	for each	500 Males
1 Water Closet	for each	300 Females
1 Urinal	for each	300 Males
1 Lavatory	for each	5 Water Closets
1 Drinking Fountain		Room

USE GROUP F3 (LIBRARIES, MUSEUMS, AND ART GALLERIES)

1 Water Closet	for each	100 Females
1 Water Closet	for each	200 Males
1 Urinal	for each	200 Males
1 Lavatory	for each	100 persons or fraction thereof

USE GROUP F4A (CHURCHES)

No fixtures required in Church Services Areas (See Emergency below) if Assembly areas are provided for other uses, fixtures listed in USE GROUP F2 (ASSEMBLY HALLS) shall be provided, for those areas so designated. One emergency Water Closet and Lavatory Unit shall be provided in Area of Services if no other required unit is close.

USE GROUP F4B (SCHOOLS)

GRADES ONE THROUGH FOUR

1 Water Closet	for each	32 boys	each floor
1 Water Closet	for each	22 girls	" "
1 Urinal	for each	32 boys	" "
1 Lavatory	for each	40 boys	" "
1 Lavatory	for each	32 girls	" "
1 Drinking Fountain	for each	80 persons	" "

GRADES FIVE THROUGH HIGH SCHOOL & COLLEGES & UNIVERSITIES

1 Water Closet	for each	40 boys	each floor
1 Water Closet	for each	32 girls	" "
1 Urinal	for each	32 boys	" "
1 Lavatory	for each	40 boys	" "
1 Lavatory	for each	40 girls	" "
1 Drinking Fountain	for each	80 persons	" "

Fixtures provided on levels midway between floors may be considered to serve level above and below it, if capacities are figured accordingly. Above high school grades one whole level above or below will be acceptable.

USE GROUP H2 (HOSPITALS)

For patients and stationed staff personnel not served by private toilet and wash rooms, each level must have:

1 Water Closet	for each	20 females
1 Water Closet	for each	20 males
1 Urinal	for each	50 males
1 Lavatory	for each	20 males
1 Lavatory	for each	20 females
1 Bath or Shower	for each	15 males or females
1 Drinking Fountain	for each	floor

USE GROUP H2 (HOMES FOR THE AGED AND CONVALESCENTS AND ASYLUMS)

In addition to any private room facilities, occupants and stationed staff personnel on each level shall be provided with the following:

1 Water Closet	for each	20 males
1 Water Closet	for each	20 females
1 Lavatory	for each	10 males
1 Lavatory	for each	10 females
1 Urinal	for each	50 males
1 bath or shower	for each	15 males
1 bath or shower	for each	15 females
1 Drinking Fountain	for each	50 persons

USE GROUP H1 (INSTITUTIONAL RESTRAINED)

Buildings shall have facilities as set forth in USE GROUP H2 above.

USE GROUP L1 (HOTELS) (MOTELS)

1 Water Closet	for each	Rental Room or Suite
1 Bath or Shower	for each	" " " "
1 Lavatory	for each	" " " "

In addition to these private room or suite requirements, each floor shall have for each sex the following:
Two water closets
Two lavatories

Rooms used for other purposes shall meet the requirements of their specifically designated uses as listed.

USE GROUP L1 AND L2 (DORMITORIES)

In addition to any private room facilities provided, each floor shall have the following:

1 Water Closet	for each	20 males
1 Water Closet	for each	10 males
1 Urinal	for each	20 males
1 Lavatory	for each	8 females
1 Lavatory	for each	8 males
1 Bath or Shower	for each	8 males
1 Bath or Shower	for each	8 females
1 Drinking Fountain	for each	50 persons

USE GROUP L2 (LODGING OR ROOMING HOUSES)

1 Water Closet, 1 Lavatory, 1 Bath or Shower for each 8 persons, each floor.

Wherever minimum requirements are specified in this Table it shall mean that minimum or fraction thereof. Water Closet minimum for males and females in accredited colleges and universities may be increased fifty percent over table. Computation of capacities will take in consideration rooms which serve students included in more than one building area to avoid duplication of facilities in total capacities.

.14 - Single and Multifamily Residences. In apartment and one and two family residence buildings (Use Groups L2 and L3), there shall be one toilet room and one kitchen sink located in a separate room for each family unit. The toilet room shall contain not less than one water closet, one lavatory and one tub or shower bath. One and two family residence requires that each dwelling unit must have water and waste connection for clothes washing machine - or - laundry tray with waste and water connection

.15 - Drinking Fountains - Wherever large number of people congregate for amusement, instruction, mercantile or industrial uses, drinking fountains shall be provided in the ratio of at least one per hundred (100) persons. In all construction operations, an adequate supply of pure drinking water with individual drinking cups or an approved drinking fountain shall be provided for workmen during hours of employment.

SEC. 1715.2 - MATERIALS OF FABRICATION AND INSTALLATION. Sanitary fixtures shall be made of approved impervious materials, finished with smooth surfaces which are readily cleanable, and which conform to the approved rules. All such fixtures shall be erected level and in alignment with adjacent walls, so arranged as to be readily accessible for cleaning purposes.

.21 - Human Wastes - Water-flush closets, urinals and other receptacles for the disposal of human excrets shall be made of vitreous earthenware, or cast iron with porcelain-enameled interior surfaces or of other approved sinks or similar fixtures having traps above the floor, using lead connections, must have a cast brass flange soldered to the lead, securely fastened to the floor or wall and bolted to the trap of such fixtures; where cast-iron or wrought iron connections are used, the cast brass flange must be screwed or caulked to the floor or wall and bolted to the trap of such fixture. Bolts, nuts and washers used in all such construction must be of brass. The type, pattern and means of flushing in all water closets shall be as approved.

.22 - Kitchen Wastes. Kitchen sinks for dishwashing and culinary purpose shall be made of approved corrosion-resistive and non-absorbent materials and shall be installed so that the space underneath each fixture is readily accessible for inspection and cleaning.

SEC. 1715.3 - TOILET ROOMS. Water-closets and urinals shall be placed in rooms or compartments which are devoted exclusively to toilet facilities complying with the provisions of Sections 1725.0. In building designed for where more than one water-closets is required, separate toilet rooms shall be provided for each sex.

SEC. 1715.4 - AUXILIARY TOILETS. In one and two family dwellings (Use Group L3), the Director may permit the installation of an auxiliary toilet compartment in the basement enclosed in approved dwarf partitions.

SEC. 1715.5 - DRINKING FOUNTAINS. Drinking fountains where required shall be equipped with inclined jets elevated above the rim of the fixture with a sanitary guard over the jet or shall be of other approved types. No drinking fountain shall be installed in toilet rooms unless approved.

SEC. 1715.6 - FIXTURES CONNECTIONS. All approved plumbing fixtures and devices shall be connected and installed as provided in this article; and no such fixtures or devices shall be indirectly connected to the plumbing or drainage system if in the opinion of the Director a fixture so connected would be detrimental to the public health or the occupants of the building or structure.

SEC. 1715.7 - PLUMBING REQUIREMENTS IN EMBALMING & AUTOPSY ROOMS.

1. There shall be installed an approved floor drain with check valve and basket located under or near embalming or autopsy table connected to sewer. Water supply to table to have a check valve. A vacuum breaker system shall be designed to protect all fixtures in the room.

2. There shall be installed in embalming or autopsy room one (1) slop sink with a three (3) inch P-trap and three (3) inch waste pipe connected to sewer and vented. Provided with hot and cold water supply, with a check valve and antisiphon vacuum breaker installed six (6) feet or more above slop sink.

3. There shall be installed in embalming or autopsy room one (1) sink to sterilize instruments, provided with hot and cold water supply, with a check valve and anti-siphons vacuum breaker installed above the sink.

TABLE 1716.1 - DRAINAGE FIXTURE UNIT VALUES FOR VARIOUS
PLUMBING FIXTURES

Type of fixture or Group of Fixtures	Drainage Fixture Unit Value
	(d.f.u.)
Automatic clothes washer (2" standpipe)	3
Bathroom group consisting of a water closet, lavatory and bathtub or shower stall:	
Flushometer Valve Closet	8
Tank type closet	6
Bathtub ¹ (with or without overhead shower)	2
Combination sink-and-tray with food disposal unit	2
Combination sink-and-tray with one 1½" trap	2
Combination sink-and-tray with separate 1½" traps	3
Dental unit or cuspidor	1
Dental lavatory	1
Drinking fountain	½
Dishwasher, domestic	2
Floor drains with 2" waste	2
Kitchen sink, domestic, with one 1½" waste	2
Kitchen sink, domestic, with food waste grinder	2
Lavatory with 1½" waste	1
Laundry tray (1 or 2 compartments)	2
Shower stall, domestic	2
Showers (group) per head ²	2
Sinks:	
Surgeon's	3
Flushing rim (with valve)	6
Service (trap standard)	3
Service (P trap)	2
Pot, scullery, etc. ²	4
Urinal, pedestal, syphon jet blowout	6
Urinal, wall lip	4
Urinal stall, washout	4
Urinal trough ² (each 6-ft. section)	2
Wash sink ² (circular or multiple) each set of faucets	2
Water closet, tank-operated	4
Water closet, valve-operated	6
Unlisted fixture drain or trap size:	
1½" or less	1
1½"	2
2"	3
2½"	4
3"	5
4"	6

¹ A shower head over a bathtub does not increase the fixture value.² See Section P-601.11 for method of computing unit value of devices with continuous or semi-continuous flows.

TABLE 1716.2-CONVERSION FACTORS FOR CONVERTING CONTINUOUS
FLOW TO EQUIVALENT SANITARY LOAD

Sanitary Load ¹ d.f.u.	Conversion factor ² d.f.u./gpm
10	1.2
20	1.7
30	2.2
40	2.7
50	3.2
100	4.4
150	5.0
200	5.5
300	6.3
400	6.7
500	7.0
1,000	8.1
2,000	9.1
3,000	9.7
4,000 or more	10.0

1

This refers to the connected sanitary load, in drainage fixture units, on the soil or waste line for which the size is to be determined.

2

The equivalent load, in drainage fixture units, to be added for sizing purposes because of continuous flow is obtained by multiplying the continuous flow, in gallons per minute, by the conversion factor corresponding to the sanitary load.

TABLE 1716.3- MAXIMUM LOADS FOR HORIZONTAL DRAINS

Diameter of Drain	Horizontal Fixture Branch	Building Drain or Building Sewer Slope			
		1/16 in/ft	1/8 in/ft	1/4 in/ft	1/2 in/ft
(in)	(d.f.u.)	(d.f.u.)	(d.f.u.)	(d.f.u.)	(d.f.u.)
1 1/4	1				
1 1/2	3				
2	6			21	26
2 1/2	12			24	31
3	32*		36*	42*	50*
4	160		180	216	250
5	360		390	480	575
6	620		700	840	1000
8	1400	1400	1600	1920	2300
10	2500	2500	2900	3500	4200
12	3900	3900	4600	5600	6700
15	7000	7000	8300	10000	1200

* Not more than two water closets or two bathroom groups.

TABLE 1716.4 - MAXIMUM LOADS FOR SOIL AND WASTE STACKS

Diameter of Stack (Inches)	MAXIMUM LOAD (d.f.u.)								
	One Branch Intervals	2 Floors or Br Int	3 Floors or Br Int	4 Floors or Br Int	5 Floors or Br Int	6 Floors or Br Int	7 Floors or Br Int	8 Floors or Br Int	9 Floors or Br Int
1 1/4"	1	1	2	-	-	-	-	-	-
1 1/2"	2	3	4	-	-	-	-	-	-
2"	4	7	10	13	16	18	-	-	-
2 1/2"	8	14	20	26	31	35	-	-	-
3"	20*	34*	48*	62*	76*	90*	102*	-	-
4"	100	180	260	320	400	480	540	-	-
5"	225	400	575	750	925	1100	1225	1350	1400
6"	385	675	960	1240	1520	1800	2080	2340	2560
8"	875	1600	2300	3000	3675	4200	4725	5240	5780
10"	1560	-	-	5625	6550	7500	8435	9360	10310
12"	2435	-	-	8750	10225	11700	13160	14600	16000
15"	4375	-	-	15740	18375	21000	23620	26240	28880

	10.	11	12	13	14	15	16	Load Limit For Tall Stacks
1 1/4"	-	-	-	-	-	-	-	-
1 1/2"	-	-	-	-	-	-	-	-
2"	-	-	-	-	-	-	-	-
2 1/2"	-	-	-	*	-	-	-	-
3"	-	-	-	-	-	-	-	-
4"	-	-	-	-	-	-	-	-
5"	-	-	-	-	-	-	-	-
6"	2800	2900	-	-	-	-	-	-
8"	6300	6830	7350	7600	-	-	-	-
10"	11250	12200	13100	14000	15000	-	-	-
12"	17440	18800	20200	21600	23000	24000	25800	26000
15"	31500	34140	36760	39380	42000	44600	47200	50000

* Not more than two water closets or bathroom groups within each branch interval nor more than six water closets or bathroom groups on the stack.

* Maximum drainage fixture units for any one branch interval.

SEC. 1717.0 - SOIL AND FIXTURE TRAPS

All traps shall be of an approved type, constructed of approved material or full-bore approved traps which have unobstructed interior waterways and no moving parts. All traps shall be self-cleaning and shall be designed to hold a minimum water seal of two (2) inches, such traps shall have the same nominal inside diameter as the drain or waste pipes connecting thereto, and shall be provided with an approved cleanout as required in Section 1712.0. They shall be set level with respect to their seals; and shall be protected from frost and from loss of seal due to evaporation, flow momentum, capillary attraction, pressure, siphonage or any other cause.

1717.1 - SEPARATE TRAPS FOR EACH FIXTURE - Each plumbing fixture shall be separately trapped by a water seal trap, except as other wise permitted in this Code, placed as close as possible to the fixture outlet, The vertical distance from the fixture outlet to the trap weir shall not exceed twenty-four inches. No fixture shall be double trapped. Exceptions to the separate trapping requirements are as follows:

- a. Fixtures having integral traps.
- b. A combination plumbing fixture may be installed on one trap provided one compartment is not more than six inches deeper than the other and the waste outlets are not more than thirty inches apart and neither outlet is equipped with a garbage grinder.
- c. One trap may be installed for a set of not more than three single compartment sinks, laundry trays or lavatories immediately adjacent to each other in the same room, and the trap is centrally located when three such fixtures are installed.
- d. No clothes washer or laundry tub shall be discharged to a trap serving a kitchen sink.

SEC. 1717.3 - BACK-WATER TRAPS. All building sewers, drains and storm sewers shall be provided with approved back-water valves, traps and manually operated gate valves or other equivalent approved devices when subject to back-flow, flooding or other flow interference. Upon approval, the back-water valves shall be located on a branch in the drain or soil lines.

SEC. 1717.4 - BUILDING TRAPS. In localities subject to prolonged periods of freezing temperatures or where the public sewer or septic tank or other sewage disposal system requires safeguards against the diffusion of sewer air into the building or structure in which plumbing fixtures or leaders are installed, such buildings or structures may be provided with a main building trap or other equivalent device when approved by the Director. Such building traps shall be located inside of the main building near the front wall of the structure and on the sewer side of all plumbing connections; and shall have a fresh air inlet pipe of not less than four (4) inches. Except that the discharge from a sewer-lift, oil separator, blow-off pipe or from rain water leaders may connect on the outside of the house trap when installed in accordance with the approved rules.

SEC. 1717.5 - STORM WATER TRAPS. All storm water drains shall be trapped before entering any combined sewer, building sewer or main building drain which is designed to carry sewage. When approved, traps shall be required for storm water drains entering storm sewer.

SEC. 1717.6 - DRUM TRAPS. When drum traps are used, they shall have a water seal of not more than seven (7) inches nor less than two (2) inches; and shall be so installed that the water seal will protect the trap screw from the corrosive action of sewer air.

SEC. 1717.7 - SELF-SEALING TRAPS. The use of siphon resisting, anti-siphon or other resealing devices shall be permitted only on short branch drains when approved after test in accordance with the approved rules and under the restricted applications specified in Section 1718.8, but self cleaning water-sealing approved cast traps of suitable character shall be used when separate air-pipe connections are provided of a size of pipe not less than the waste pipe, and all work where practicable, the self cleaning water-sealing approved cast traps shall be installed, and all such self cleaning water-sealing approved cast traps shall be of a size not less than one and one-half (1-1/2) inches in diameter iron pipe size, and water seal of not less than two (2) inches. Each trap shall be separately vented when required, of a size of pipe not less than the waste pipe, and no vent shall be less than two (2) inches in size where it passes through the roof. One and one-half (1-1/2) inch traps

or larger, when used, shall be of the same weight per lineal foot as prescribed for lead waste pipe. Where separate air pipes are not provided, traps that will not unseal shall be used and all such traps shall be of approved type and if such approved traps do not comply with the standard as first approved, they may be rejected until such standard has been complied with.

SEC. 1717.8 - OVERFLOW CONNECTIONS. The overflow pipes from plumbing fixtures shall be connected to the inlet side of traps in all cases, and drips or overflow pipes from the safes under water closets and other fixtures, or from tanks or cisterns, shall be run to some place in open sight, and in no case shall any such pipe be connected directly with a drain, waste pipe, or soil pipe. No waste pipe from any refrigerator or any other receptacle in which provisions are stored, shall discharge into the soil of any cellar bottom, nor into the soil beneath any floor of any building, nor into any waste pipe, drain pipe, or soil pipe except through a broken connection in an approved manner.

SEC. 1718.0 - VENTILATION OF PLUMBING SYSTEMS

All fixture trap and building traps shall be vented to insure complete air circulation and to protect against siphonage and back pressure in accordance with the approved rules. In existing buildings no work shall be done without first obtaining an approval for such work.

SEC. 1718.1 - LOCATION VENTS. Except for approved water closet and similar fixtures, the vent opening from the soil or waste pipe shall be located above the dip of the trap and fixture. Crown vents shall be prohibited.

SEC. 1718.2 - SIZE AND LENGTH OF VENTS FOR SOIL AND WASTE STACKS. The required size of the vent shall be determined by the size of the soil or waste stack, the minimum size shall be not less than one and one-quarter (1-1/4) inch vent pipe for a waste pipe. No vent pipe shall be less than two (2) inches in size where it passes through the roof, and in existing buildings where separate air pipe connections are not provided approved traps which will not unseal shall be used. On new buildings all branch lines of waste pipe twenty (20) feet or more in length must be carried up through and eighteen (18) inches above the roof, or into the main soil pipe above the highest plumbing fixture. A vent pipe

connection off a horizontal branch line for a fixture with a non-syphon trap shall not exceed thirty-six (36) inches for new installations.

The size and length of vents for soil and waste stacks shall be in accordance with Article 9.

ARTICLE 9

VENTS AND VENTING

SEC. 1718.21 SCOPE. The provisions of this Article shall control the selection of piping, tubing and fittings for venting systems and their proper installation. It shall also control the minimum diameter of vent pipe, individual vents, relief vents and contains a table setting forth the size and length of vents and other items covering vent stacks and stack vents. In addition vent grades and connections, height above fixtures, hydraulic gradient and relief vents for stacks, bar and fountain sink traps and the venting of sumps and sewers are included.

SEC. 1718.22 General. - Vent pipe sizes shall be determined from Table 1818.30 on the basis of length and drainage load computed from Table 1716.1 and Table 1716.2.

SEC. 1718.23 Individual Vents. - The diameter of the individual vent shall be at least $1/2$ the diameter of the drain served, except that no vent pipe shall be less than $1-1/4$ inches in diameter.

SEC. 1718.24 Relief Vents. - The diameter of a relief vent shall be at least $1/2$ diameter of the soil or waste branch served.

SEC. 1718.25 Circuit or Loop Vents. - The circuit or loop vents shall be in accordance with Table 1718.32. "Minimum Diameters and Maximum Lengths of continuous, Circuit, and Loop vents for Horizontal Soil and Waste Branches", and in all cases the diameter of circuit or loop vents shall be at least $1/2$ of the diameter of the horizontal soil or waste branch served or $1/2$ the diameter of the vent stack whichever is smaller.

SECTION 1718.26 PROTECTION OF TRAP SEALS

The protection of trap seals from siphonage, aspiration, or back-pressure shall be accomplished by the appropriate use of soil or waste stacks with adequate venting in accordance with the requirements of the Code. Venting systems shall be designed and installed so that at no time shall trap seals be subjected to a pneumatic pressure differential of more than one inch of water pressure under design load conditions.

1718.27. Loss of Seal by Evaporation. - If a trap seal is subject to loss by evaporation, means shall be provided to prevent the escape of sewer gas by utilizing:

1. A deep seal trap or,
2. An accepted trap primer, or
3. Other accepted devices.

SECTION 1718.28 VENT STACKS AND STACK VENTS

VENT STACK REQUIRED. - Every building in which plumbing is installed shall have at least one main stack, which shall run undiminished in size and as directly as possible, from the building drain through to the open air above the roof. A vent stack or a main vent shall be installed with a soil or waste stack whenever back vents, relief vents, or other branch vents are required in a building of two or more branch intervals.

1718.29 Connections at Base and Top. - All main vents or vent stacks shall connect full size at their base to the drainage system or to the main soil or waste pipe, at or below the lowest fixture branch. All other vent pipes shall extend undiminished in size above the roof, or shall be reconnected with the stack vent or vent stack six inches above the overflow level of the highest fixture connection discharging into the soil or waste stack.

TABLE 1718.30 - Size and Length of Vents¹

Diameter of Soil or Waste Stack (in.)	Total Fixture Units Connected To Stack (dfu)	DIAMETER OF VENT (INCHES)										
		1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
		(Maximum developed length of vent, in feet, given)										
1 1/4	2	30										
1 1/4	8	50	150									
1 1/2	10	30	100									
2	20	30	75	200								
2 1/2	42	26	50	150								
2	12		30	100	300							
3	10		42	150	360	1040						
3	21		32	110	270	610						
3	53		27	94	230	660						
3	102		25	86	210	620						
4	43			35	85	250	980					
4	140			27	65	200	750					
4	320			23	55	170	640					
4	530			21	50	150	580					
5	190				28	82	320	990				
5	490				21	63	250	760				
5	940				18	53	210	670				
5	1400				16	49	190	590				
6	500					33	130	400	1000			
6	1100					26	100	310	730			
6	2000					22	84	260	660			
6	2900					20	77	240	600			
8	1800						31	95	290	940		
8	3400						24	73	190	720		
8	5500						20	62	160	610		
8	7600						18	56	140	560		
10	4000							31	78	310	960	
10	7200							24	60	240	740	
10	11,000							20	51	200	630	
10	15,000							18	46	180	570	
12	7300								31	120	380	940
12	13,000								24	94	300	720
12	20,000								20	79	250	610
12	26,000								18	72	230	500
15	15,000									40	130	310
15	25,000									31	96	240
15	39,000									26	81	200
15	50,000									24	74	180

¹Does not apply to circuit, loop or sump vents.

Table 1718.3a - Minimum Diameters And Minimum Lengths of Continuous Circuit, And Loop Vents
For Horizontal Soil And Waste Branches

Diameter of horizontal branch (inches)	Slope or horizontal branch (inches per foot)	Diameter of vent (inches)						Maximum developed length of vent, in feet, given below)
		1 1/4	1 1/2	2	2 1/2	3	4	
1 1/4	1/8	N.L.	1					
	1/4	N.L.						
	1/2	N.L.						
	3/4	N.L.						
	1	N.L.						
	1 1/4	N.L.						
	1 1/2	N.L.						
	1 3/4	N.L.						
	2	N.L.						
	2 1/4	290						
	2 1/2	150						
	2 3/4	180						
	3	50						
	3 1/4	49						
	3 1/2							
	3 3/4							
	4							
	4 1/4							
	4 1/2							
	4 3/4							
	5							
	5 1/4							
	5 1/2							
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	7 1/4							
	7 1/2							
	7 3/4							
	8							
	8 1/4							
	8 1/2							
	8 3/4							
	9							
	9 1/4							
	9 1/2							
	9 3/4							
	10							

1 The abbreviation "N.L." means "No Limit". Actual values in excess of 500 feet.

Table 1718.32. continued - MINIMUM DIAMETERS AND MAXIMUM LENGTHS OF CONTINUOUS, CIRCUIT AND LOOP VENTS FOR HORIZONTAL SOIL AND WASTE BRANCHES

Diameter of horizontal branch (inches)	Slope or horizontal branch (inches per foot)	Diameter of vent (inches)										
		1½	1¾	2	2½	3	4	5	6	8	10	
		(Maximum developed length of vent in feet given below)										
10	1/8								190	500	N.L.	N.L.
	1/4								85	240	N.L.	N.L.
	1/2								32	110	N.L.	N.L.
12	1/8									180	N.L.	N.L.
	1/4									79	420	N.L.
	1/2									26	200	N.L.

¹ The abbreviation "N.L." means "No Limit". Actual values in excess of 500 feet.

1718.33. Offsets in Building Having Ten or More Branch Intervals. -

In buildings have ten or more branch intervals, offsets of less than 45 degrees from the horizontal in a soil or waste stack may be vented as two separate soil or waste stacks and may be vented by installing a relief vent as a vertical continuation of the lower section of the stack or as a side vent connected to the lower section between the offset and the next lower fixture or horizontal branch. The upper section of the offset shall be provided with a yoke vent. The diameter of the vents shall not be less than the diameter of the main vent, or of the soil and waste stack, whichever is the smaller.

1718.34. Vent Headers. Stack vents and vent stacks may be connected into a common vent header at the top of the stacks and then extended to the open air at one point. This header shall be sized in accordance with the requirements of Table 1718.30 the number of units being the sum of all units on all stacks connected thereto and the developed length being the longest vent length from the intersection at the case of the most distant stack to the vent terminal in the open air may be made to 75% of the combined areas of the vents so connected if approved by the Administrative Authority.

VENT TERMINALS

1718.35. Extension Above Roofs. - Extension of vent pipes through a roof shall be terminated at least 12 inches above it, unless less extension above the roof is approved by the Administrative Authority. Where a roof is to be used for any purpose other than weather protection, the vent extensions shall run at least 7 feet above the roof.

1718.36. Waterproof Flashings. - Each vent terminal shall be made water-tight with the roof by proper flashing.

1718.37. - Flag Poling Prohibited. - Vent terminals shall not be used for the purpose of flag poling, TV aerials, or similar purposes

1718.38. Location of Vent Terminal. - No vent terminal shall be located directly beneath any door, window, or other ventilating opening of the building or of an adjacent building nor shall any such vent terminal be within 10 feet horizontally of such an opening unless it is at least 2 feet above the top of such opening.

1718.39. Extensions Through Wall. - When approved by the Administrative Authority vent terminals may extend through a wall. When so approved such vents shall be at least 10 feet horizontally from any lot line and shall terminate downward. They shall be effectively screened and shall meet the requirements of Section 1718.32. Vent terminals shall not terminate under the overhang of a building.

1718.40. Extensions Outside Building. - No soil, waste, or vent pipe extensions shall be run or placed on the outside of a wall of any new building, but shall be carried up inside the building except that in those localities where the temperature does not drop below 32 degrees F., the Administrative Authority may approve the installation outside the building.

VENT GRADES AND CONNECTIONS

1718.41. Vent Grade. - All vent and branch vent pipes shall be so graded and connected as to drain back to the soil or waste pipe by gravity.

1718.42. Vertical Rise. - Where vent pipes connect to a horizontal soil or waste pipe, the vent shall be taken off above the center line of the pipe. The vent pipe shall rise vertically, or at an angle not more than 45 degrees from the vertical, to a point at least 6 inches above the flood-level rim of the fixture it is venting, before off-setting horizontally or before connecting to the branch vent

1718.43. Height Above Fixtures. - A connection between a vent pipe and a vent stack or stack-vent shall be made at least 6 inches above the flood-level rim of the highest fixture served by the vent. Horizontal vent pipes forming branch vents, relief vents, circuit vents, or loop vents shall be at least 6 inches above the flood-level rim of the highest fixture served.

1718.44. Side-Inlet. - Side-inlet closet bends are permitted only in cases where the fixture connecting thereto is vented, and in no case shall the inlet be used to vent a bathroom group without being washed by a fixture. Side inlet closet bends shall have the side inlet brought in at a 45° angle.

WET VENTING

1718.45. Single Bathroom Groups on Top Story. - A single bathroom group of fixtures may be installed with the drain from a back-vented lavatory or combination fixture serving as a wet vent for a bathtub or shower stall and for a water closet, provided that:

- a. Not more than 1 fixture unit is drained into a 1-1/2-inch diameter wet vent or not more than 4 fixture units drain into a 2-inch diameter wet vent. Kitchen sink connections are not permitted.
- b. The horizontal branch drain connects to the stack at the same level as, or below, the water closet drain; or it may connect to the upper half of the horizontal portion of the water closet bend at an angle not greater than 45° from the direction of flow.

1718.46. Double Bathroom Groups - Back to Back. - Bathroom groups back to back on a top floor, consisting of two lavatories and two bathtubs or shower stalls, may be installed on the same horizontal branch with a common vent for the lavatories and with no back vent for the bathtubs or shower stalls and for the water closets, provided the wet vent is not less than 2 inches in diameter and the length of the fixture drain conforms to Table 1718.62.

1718.47. Multistory Bathroom Groups. - On the lower floors of a multi-story building, the waste pipe from one or two lavatories may be used as a wet vent for one or two bathtubs or showers, provided that:

- a. The wet vent and its extension to the vent stack is not less than 2 inches in diameter.
- b. Each water closet below the top floor is individually back vented.
- c. The vent stack is sized as given in Table 1718.47. Size of Vent Stacks.

Table 1718.48. - SIZE OF VENT STACKS

Number of Wet Vented Fixtures	Diameter of Vent Stack (Inches)
1 or 2 bathtubs or showers	2
3 to 5 bathtubs or showers	2-1/2
6 to 9 bathtubs or showers	3
10 to 16 bathtubs or showers	4

1718.49. Exception of Wet Venting Multistory Bathroom Groups. - In multistory bathroom groups, wet vented in accordance with Section 1718.48, the water closets below the top floor need not be individually vented if the 2-inch waste connects directly into the water closet bend at a 45 degree angle to the horizontal portion of the bend in the direction of flow or if a special stack fitting is used which consists of a 3-inch

water closet opening and two side outlets each 1-1/2 or 2 inches in diameter, having their invert above the center line of, but below the top of, the 3-inch water closet opening.

STACK VENTING

1718.50. One Bathroom Group. - Except as indicated in Section 1718.51 a group of fixtures, consisting of one bathroom group and a kitchen sink or combination fixture, may be installed without individual fixture vents, in a one-story building or on the top floor of a building, provided each fixture drain connects independently to the stack and the water closet and bathtub or shower stall drain enters the stack at the same level and in accordance with the requirements in Table 1718.62. Maximum Distance of Fixture Trap from Vent.

1718.51. Overtaxed Sewers. - Where a sink or combination fixture connects to the stack-vented bathroom group, and when the street sewer is sufficiently overloaded to cause frequent submersion of the building sewer, a relief vent or back-vented fixture, or accepted back water valve shall be connected to the stack below the stack-vented water closet or bathtub.

INDIVIDUAL FIXTURE REVENTING

1718.52. Where Required. - When fixtures other than water closets discharge into a horizontal branch downstream shall be individually vented.

1718.53. Horizontal Branches. - One sink and one lavatory, or three lavatories within 8 feet developed length of a main-vented line may be installed on 2 inch horizontal waste branch without reventing, provided the branch is not less than 2 inches in diameter throughout its length, and provided the wastes are connected into the side of the branch and the branch leads to its stack connection with a pitch of not more than 1/4 inch per foot.

1718.54. Load Limit for Fixtures Above Bathtubs and Water Closets

Without Reventing. - The total drainage load that may be placed on a soil or waste stack above the highest water closet or bathtub connection without the use of revents shall not exceed three fixture units, provided:

- a. The soil or waste stack is not less than 3 inches in diameter.
- b. The total load on the stack is in accordance with the applicable provisions of Article 6, and

- c. The waste piping of the fixtures above the water closet or bathtub connection is in accordance with Sections 1718.53 and 1718.63.

COMMON VENTS

1718.55. Individual Vent as Common Vent. - An individual vent, installed vertically, may be used as a common vent for two fixture traps when both fixture drains connect with a vertical drain at the same level.

1718.56. Fixtures Connected to Stack at Different Levels. A common vent may be used for two fixtures set on the same floor level but connection at different levels in the stack, provided the vertical drain is one pipe diameter larger than the upper fixture drain but in no case smaller than the lower fixture drain, whichever is the larger and that both drains conform.

CIRCUIT AND LOOP VENTING

1718.57. Battery Venting. - A branch soil or waste pipe to which two but not more than eight water closets (except blow-out type), pedestal urinals, fixtures having floor outlet trap standards, shower stalls, or floor drains are connected in battery, shall be vented by a circuit or loop vent which shall be taken off downstream from the fixture most distant from the soil stack. In addition, lower floor branches serving more than three water closets shall be provided with a relief vent installed downstream from the fixture nearest the soil stack. When lavatories or similar fixtures discharge into such branches, each vertical branch serving such fixtures shall be provided with a continuous vent.

1718.58. Dual Branches. - When parallel horizontal branches serve a total of eight water closets (four on each branch), each branch shall be provided with a relief vent at a point between the two water closets most distant from the soil stack. When fixtures such as lavatories discharge into a horizontal branch drain, each such fixture shall be vented.

1718.59. Vent Connections. - When the circuit, loop or relief vent connections are taken off the horizontal branch, the vent branch connection shall be taken off at a vertical angle or from the top of the horizontal branch.

1718.60. Fixtures Back-to-Back in Battery. - When fixtures are connected to one horizontal branch through a double wye or a sanitary tee in a vertical position, a common vent for each two fixtures back-to-back or double connection shall be provided. The common vent shall be installed in a vertical position as a continuation of the double connection.

FIXTURES BACK-TO-BACK

1718.61. Two fixtures set back-to-back, within the distance allowed between a trap and its vent, may be served with one continuous soil or waste-vent pipe, provided that each fixture wastes separately into an approved double fitting having inlet openings at the same level. (See Section 1718.56 for inlet openings at different levels.)

FIXTURE VENTS

1718.62. Distance of trap from Vent. - Each fixture trap shall have a protecting vent so located that the developed length of the fixture drain from the trap weir to the vent fitting is within the requirements set forth in Table 1718.63. Maximum Distance of Fixture Trap from Vent.

Table 1718.63. - Maximum Distance of Fixture Trap From Vent

<u>Size of Fixture Drain Inches</u>	<u>Distance - Trap to Vent</u>
1-1/4	2 ft. 6 in.
1-1/2	3 ft. 6 in.
2	5 ft.
3	6 ft.
4	10 ft.

1718.64. Venting of Fixture Drains. - Any fixture drain, except those serving a fixture with integral traps such as water closets, shall be vented if it discharges, to a tee, tee-wye, or short-pattern wye in an stack or horizontal drain below the top of the dip of the fixture trap served by the fixture drain.

RELIEF VENTS FOR STACK OF MORE THAN TEN BRANCH INTERVALS

1718.66. Soil and waste stacks in buildings, having more than ten branch intervals shall be provided with a relief vent at each tenth

interval installed, beginning with the top floor. The size of the relief vent shall be equal to the size of the vent stack to which it connects. The lower end of each relief vent shall connect to the soil or waste stack through a wye below the horizontal branch serving the floor and the upper end shall connect to the vent stack through a wye not less than 3 feet above the floor level.

COMBINATION WASTE-AND-VENT SYSTEM

1718.67. Where Permitted. - A combination waste-and-vent system shall be permitted only where structural conditions preclude the installation of a conventional system as otherwise provided in this Code.

1718.68. Limits of Use. - A combination waste-and-vent system is limited to floor drains, lavatories, and sinks. It consists of an installation of waste piping in which fixture drains are not adequately vented. Every drainage pipe and trap in a combination waste-and- vent system shall be at least two pipe sizes larger than the size required in Article 6 and 1717.1.

VENTING OF SUMPS AND SEWERS

1718.69. Drainage piping below sewer level shall be vented in similar manner to that for a gravity system. Building sump vents shall be sized in accordance with Table 1718.70. Sizes and Length of Sump Vents. Vents separately to the open air.

Table 1718.70 - Size and Length of Sump Vents²

Diameter of building drain ¹ (inches)	Diameter of vent (inches)										
	1¼	1½	2	2½	3	4	5	6	8	10	12
(Maximum length of vent, in feet, given below)											
2	23	52	290								
2½	5	13	89	290							
3		2	30	110	290						
4			1	17	57	280					
5				-	10	80	280				
6					-	20	97	280			
8						-	3	41	270		
10							-	1	53	250	
12								-	-	61	230

¹Where than one drain connects to the sump, size vent on the basis of a building drain diameter having a cross sectional area equal to the areas of the multiple drains.

²The above values provide for a maximum of 1 inch pressure drop in the system.

FROST CLOSURE

1718.71. Where frost closure is likely to occur, each vent extension through a roof shall be at least three inches in diameter. When it is found necessary to increase the size of the vent extension to meet this requirement, the change in diameter shall be made inside the building at least one foot below the roof with a fitting acceptable to the Administrative Authority.

OTHER USE PROHIBITED

1718.72. The plumbing vent system shall not be used for purposes other than the venting of the plumbing system.

SEC. 1719.1 - PUBLIC WATER SUPPLY

.11 Required Capacity. Where the required capacity of potable water supplies is available from public water mains at the site, every building and structure shall be supplied from such mains to provide for all its service equipment, and every water closet or line of water closets on the same floor, that is supplied with water from a tank or system shall have a flushing pipe of not less than one and one-quarter (1-1/4) inches in diameter, but special permission may be given to supply water closets direct from the main, when such pipe and fixtures have been approved.

COLD WATER TANKS: Each tank shall be of boiler plate steel built to ASME welded construction specification latest edition for unfired pressure vessel for 150 lbs. working and 300 lbs. test pressures having shell thickness of 3/4 inch and head thickness 15/16 inch.

HIGH ZONE TANK HOT WATER TANK: Each tank shall have thickness of shell at least 0.502 inch and head 0.600 inch; shall be fabricated to conform to ASME Code for 150 lbs. working pressure and 300 lbs. test pressure; test certificate from Insurance Company shall be issued with tank; tank shall be stamped ASME Code Test pressure; ASME working pressure.

SEC. 1719.2 - PRIVATE WATER SUPPLY. When public water mains are not available, a private source of water supply may be used provided samples are submitted periodically to the Superintendent of Health for analysis and approval and the use of such source of supply has been approved by him and the Director. The water supply of any building for drinking

purposes shall be distributed through a piping system entirely independent of any piping system conveying another water supply which is not approved for drinking purposes.

SEC. 1719.3 - SERVICE CONNECTIONS. The water service pipe shall be of sufficient size to permit a continuous and ample flow of water on all floors of the building or structure at all times. Such supply line shall be graded in size to produce equal water distribution to all risers and branches in accordance with the requirements of the fixtures, and all other equipment and the flushing media employed. Licensed plumbers shall, before installing water mains, distributing pipes or connections, file a written description of the ordinary, designed or special uses or other wise, including a description of all fixtures, apparatus or appliances to be used and connected to the city water supply. Copper water supply when installed underground shall be type K Copper tubing and shall have flared connections.

SEC. 1719.4 - FRICTION LOSSES. In calculating the sizes of supply lines, allowance shall be made for friction losses in piping, meters, valves, fittings, faucets and all accessory devices, according to the maximum required demand and the average pressures specified in this Code and the approved rules adopted thereunder.

SEC. 1719.5 - MAIN WATER SERVICE SHUT-OFF. Approved main shut-off valves shall be provided on the discharge side of the water service pipe controlling all outlets in the building in accordance with the rules of the Providence Water Supply Board.

SEC. 1719.6 - CROSS CONNECTED SUPPLIES.

.61 - Building Service Supply. It shall be unlawful to connect water piping supplied directly from city water mains to other approved sources with or to piping from underground storage tanks or other unapproved sources; and no cross connection shall be made between the potable water distribution system and any portion of waste or soil systems, or fixtures or devices that may contaminate, pollute or otherwise render the water unsafe. Water supply connections to swimming pools, hospital sterilizers, toilets, urinals bedets or any other plumbing fixtures or appliances shall be made in a manner so as to make impossible the return of any of the liquid or waste from the swimming pool, sterilizer, toilet, urinal, bedet or any other plumbing fixture or appliance the water supply or any distributing system either by gravity, siphonage, back flow or any other method that could

contaminate the water supply of any distributing system. All water piping and connections shall be thoroughly inspected and all plumbing fixtures shall be provided with a sufficient supply of water to keep them in a sanitary condition.

.62 - Process Water. Water from unapproved sources for industrial processing or for fire protection shall be identified at each outlet with an approved sign stating that the water is unfit and that its use is prohibited for drinking purposes. Piping carrying potable waters shall be distinguished and identified from water piping from an approved source by distinctive painting and appropriate signs.

.62 - Cross Connected Supplies. In all embalming, autopsy, preparation rooms, dentist offices, hospitals or where water syphons or aspirators are used that has a public water supply service, shall have a water supply with a broken connection or an approved anti-siphon vacuum breaker, supplied from a potable water distribution system.

SEC. 1719.7 - DOMESTIC GRAVITY TANKS. Gravity tanks used for domestic water supply, or for combined domestic and standpipe, fire line or sprinkler supplies, shall be equipped with tight, vermin and rodent-proof covers and shall comply with the requirements of this section and Section 932.7.

.71 - Vents. Such tanks shall be vented and the vent pipe shall be covered with a metallic screen in accordance with the approved rules.

.72 - Overflow. Overflow pipes shall discharge on the roof or into an approved trapped plumbing fixture. Such overflow shall in no case be connected directly to any portion of the drainage or plumbing system.

.73 - Location. No storage tank for potable water shall be located directly below sewer or waste lines of the plumbing system.

.74 - Maintenance. Gravity supply tanks shall be cleaned as required by the Superintendent of Health.

SEC. 1719.8 - SUPPLY FOR MULTIPLE FIXTURES. In buildings with multiple plumbing fixtures, a residual pressure of not less than six (6) pounds per square inch at the highest fixture in the building measured on the pressure side of any wide-open faucet or supply shall be provided under conditions of simultaneous use of all such fixtures throughout the building. When the water supply is used from the municipal main and is inadequate to meet this requirement, one or more approved automatically

Controlled pressure or gravity tanks shall be installed of sufficient capacity to supply those parts of the installation which are too high to be fed from risers directly connected to the street water main.

SEC. 1719.9 - WATER SUPPLY PIPING.

.91 - Automatic Water Feed. When heating or power boilers or other pressure vessels are supplied from the house service piping such supply shall be provided with an approved back-flow preventer or shall be delivered through an approved automatic water-fed device.

.92 - Main Supply Lines. Shut-off valves shall be installed on pipes from pressure or gravity tanks located at or near the source.

.93 - Branch Supply Lines. A separate accessible stop cock or valve shall be provided at the foot of each branch riser line for each group of fixture outlets controlled by any one tenant or for any one floor in any business building (Use Groups A,B,C, D, and E) and in multifamily residence buildings (Use Group L2).

.94 Water-Closet Supply. Each individual water-closet shall be provided with a separate shut-off valve.

SEC. 1719.10 DOMESTIC HOT WATER TANKS:

No range boiler, tank, vessel or container, ferrous or non-ferrous in which water is to be heated or stored under pressure for domestic purposes, of one hundred and ten (110) gallons or less capacity shall be installed in the City of Providence unless it is plainly marked by stamping into the metal of the tank, or into a metal plate permanently attached, as follows:

- A. Manufacturer's name or registered trade mark.
- B. Rated capacity of hot water tank in United States Gallons.
- C. Hydrostatic pressure in pounds per square inch at which the tank has been tested by the manufacturer, following the words: "Tested To".
- D. Maximum allowable working pressure in pounds per square inch.

No Hot water tank shall be repaired, relocated or installed and connected, unless it meets the following construction requirements:

- A. The actual capacity of a hot water tank shall be within seven and a half (7.5) per cent of the capacity stamped on the tank.
- B. A hot water tank shall be so constructed by riveting, welding, or otherwise as to withstand the stamped test pressure without visible permanent distortion, and be so designed as to have an ultimate strength sufficient to withstand a hydrostatic pressure twenty-five (25) per cent higher than the stamped test pressure.
- C. A hot water tank in which water is to be heated or stored under pressure greater than fifteen (15)

pounds per square inch shall have a stamped and certified test pressure of not less than three (300) hundred pounds per square inch.

- D. The maximum working pressure at which a hot water tank may be installed shall not be greater than forty-two and one half ($42\frac{1}{2}$) per cent of the test pressure marked on the tank.
- E. Safety devices shall be installed in accordance with the requirements of this code.
Hot water tanks with a capacity of more than one hundred and ten (110) gallons shall comply with High Zone hot water tank requirements.

SEC. 1720.0 - WATER HEATERS

SEC. 1720.1 - WATER CIRCULATION. All equipment used for the purpose of heating or storing water for domestic use shall be designed and installed to permit free circulation of the water through the tank and heater during the heating process.

SEC. 1720.2 - PIPING FOR WATER HEATERS. All hot and cold water lines leading to and from their connection with the water heater and storage tanks shall be adequate in size to serve the normal hot water demands of the building and its occupants.

SEC. 1720.3 - AUTOMATIC HOT WATER SUPPLY. Automatic or remote control ignition equipment on domestic hot water heating devices using gas or liquid fuel shall be installed only in connection with a burner equipped with a safety pilot or other approved device arranged to automatically shut off the fuel supply to the main burners, if the pilot flame is extinguished, complying with the requirements of Article 11. All gas water heaters with an automatic remot-control pilot, or with means of lighting other than a manual method, shall be equipped with approved down draft diverters on the flue pipe from the heater which will prevent extinguishment of the pilot or heating flames.

SEC. 1720.4 - DIRECT-FIRED GAUGE EQUIPMENT. No check valve shall be allowed on any heater or any cold water line between the heater and water meter.

SEC. 1720.5 - PIPING FOR HEATING EQUIPMENT. The pipes and chimney sizes, apparatus, equipment and installation shall conform to all the applicable requirements of Articles 10 and 11.

SEC. 1720.6 - HOT WATER HEATER ROOM. No water heater using solid, gas or liquid fuel shall be installed or maintained in any bath or toilet room or in any enclosed space with a volume of less than three hundred (300) cubic feet.

SEC. 1720.7 - SAFETY VALVES. Every hot water tank hereafter installed, replaced, repaired or relocated in any building, shall be equipped with an approved automatic temperature relief valve, a pressure relief valve and a vacuum relief valve. Such automatic relief valves shall be so designed, located and adjusted as to effectually prevent the temperature of the water in the tank from exceeding 212 degrees Fahrenheit.

Vacuum valves shall be installed and located at a point where the cold water supply pipe connects to the top of a domestic tank. All valves shall be installed and adjusted so as to prevent any damage to the domestic tank or to the property. There shall be installed an approved pipe conveying the exhaust water from such temperature valve and pressure relief valve extending without shutt off, to a location that will not permit damage to the property. The area of the discharge from the relief valve shall be not less than the area of the valve or valves it serves. The discharge pipe shall pitch down from the valve or valves it serves to prevent the trapping of water.

No check valves or non-by-pass pressure regulators shall be installed on the cold water supply to any hot water tank.

All water supply heating equipment shall be protected against excessive pressure and temperature by a combination pressure and temperature relief valve except tankless heaters installed on low pressure steam and hot water boilers shall have a pressure relief only and a temperature mixing valve not to exceed 140 temperature.

Combination pressure and temperature relief valves shall comply fully with current ASA Standards ASA Z 21, 22 1960 and listed by AGA and shall also comply with ASME and be stamped as tested and listed by the National Board of Boilers and Pressure Vessel Inspectors.

Minimum size combined Temperature and Pressure Relief Valves shall be 3/4 inch inlet and 3/4 outlet pipe connections.

For heaters or storage tanks over 200,000 B.T.U. a minimum size 1" valve shall be used.

When steam is used to heat water in a tank, an approved temperature regulating valve shall be installed on the steam inlet pipe of every heating unit or coil used to heat water for domestic purposes and so adjusted as to prevent the temperature of the heated water from exceeding 212 degrees Fahrenheit. The pressure relief valve and vacuum relief valve shall be installed at a location at the tank so as to avoid any damage to tank or property.

SEC. 1721.0 - SUBMERGED INLETS

SEC. 1721.1 - SAFETY DEVICES. When submerged inlets are essential to the functioning of a plumbing fixture, apparatus, appliance or other devices, approved means shall be provided to prevent back-siphonage or contamination of the water supply system, consisting of vacuum breakers, or other safties meeting the requirements of the approved rules.

SEC. 1721.2 - AIR GAP. When not otherwise provided for, water supply inlets to all fixtures, devices, apparatus or appliances shall be located to established an air gap at all times of not less than twice the diameter for circular openings and two and one-half ($2\frac{1}{2}$) times the square root of the area for openings of other shape; but in no case shall such gap be less than one (1) inch.

SEC. 1721.3 - PROHIBITED CONNECTIONS. Direct water supply connections to sterilizers, aspirators, sump or well pumps, condensers, cooling units of refrigerating systems, chemical tanks, dishwashing and laundry machines and similar appartus shall be permitted only when complying with the provisions of this section and the approved rules.

SEC. 1722.0 - DRAINAGE SYSTEMS

SEC. 1722.1 - SEWER CONNECTIONS. The drainage system conveying the storm water from roofs, paved areas or courts, except that pertaining to private garages on the rear of lots, shall be connected to the building sewer, combined sewer or other disposal terminal meeting the requirements of this article and the approved rules adopted thereunder.

SEC. 1722.2 - SUB-SOIL DRAINS.

.21 - Materials. Underground and sub-soil drains shall be constructed of approved materials, and all pipes that must be left open to drain underground, sub-soil, cellars, areas, yards or gardens, shall be connected with suitable water-tight catch basins or approved drains with checks, the size and construction of all catch-basins, whether located within the building or outside thereof, receiving fround water and connected with sewer shall be provided with accessible back-water válve or back-pressure valves, equipped with an approved solid brass screw cover. Catch-basins receiving discharges other than ground water, when required, within every catch basin and for a distance of not less than three (3) feet outside of the walls thereof, shall be extra-heavy cast iron pipe, and shall have a sip of not less than eighteen (18) inches. When required, a vent pipe shall be installed on all such outlet pipes.

.22 - Connections. All sub-soil drains shall be connected to the plumbing or drainage system of the building within the lot lines.

.23 - Sump. If the sub-soil drains are located below the building sewer level, the discharge shall be collected in a sump or receiving tank and shall be automatically lifted and discharged into the drainage system.

.24 - Combined Drains. When necessary or desirable to connect sub-soil or French drainage into a combined drain designed to carry sanitary sewage, a trap with check valve, or an approved broken connection with an accessible cleanout, shall be installed

SEC. 1722.3 - Sewage Prohibited. No sewage shall be discharged into a storm drain or storm drain system.

SEC. 1722.4 - Floor Drains. All floor drains leading to a storm drain shall be trapped as provided in section 1717.6. The use of bell traps shall be prohibited. Check valves shall be installed when required by Director.

SEC. 1722.5 - Roof Drains. All roof areas shall be equipped with roof drains having approved strainers, except those draining to hanging gutters; and the joints and connections between roof drains and conductors shall be made in accordance with the approved rules.

SEC. 1722.6 - Conductors and Leaders. All rain conductors shall be suitably trapped as approved. Conductors which are carried up within the walls of a building and are connected directly or indirectly with a public sewer or a private drain or a cesspool, shall be of material and construction as required for soil pipe. Such conductors shall be provided with approved copper roof connections which shall be connected to the conductor lines by means of approved brass ferrules and full wiped or heavily soldered overcast joints. All other types of roof connections, shall first be approved before being installed on conductor lines, no slip or packed joints allowed on conductor lines inside building, and connection with any rain water conductor and the discharge of sewerage or waste water therein is prohibited except that such connection has been installed in an improved manner.

.61 - Conductor Cleanouts. When placed within the walls of any building or installed in an inner court or in a ventilating pipe shaft, all rain water conductors and roof leaders shall be equipped with accessible cleanouts at the base of each conductor line, and each conductor shall be constructed of approved materials and sizes in accordance with the

approved rules.

.62 - Wheel Guards and Chases. Along driveways and alleyways without sidewalks, rain water leaders and conductors when not installed in wall chases shall be protected from mechanical injury by wheel guards; or such conductors shall re-enter the building through the wall at least ten (10) feet above the established grade at a forty-five (45) degree inclination.

Table 1722.63 - Size of Horizontal Building Storm Drains
And Building Storm Sewers ¹Maximum Projected Area in Square Feet and
Gallons Per Minute Flow For Various Slopes

Diameter of Drain Inches	1/8 in. per Ft. Slope		1/4 in. per Ft. Slope		1/2 in. per Ft. Slope	
	Square Feet	gpm	Square Feet	gpm	Square Ft.	gpm
3	822	34	1160	48	1644	68
4	1880	78	2650	110	3760	156
5	3340	139	4720	196	6680	278
6	5350	222	7550	314	10700	445
8	11500	478	16300	677	23000	956
10	20700	860	29200	1214	41400	1721
12	33300	1384	47000	1953	66600	2768
15	59500	2473	84000	3491	119000	4946

¹ Table 1722.63. is based upon a maximum rate of rainfall of 4 inches per hour for a 5 minute duration and a 10-year return period. Where maximum rates are more or less than 4 inches per hour, the figures for drainage area shall be adjusted by multiplying by 4 and dividing by the local rate in inches per hour. See Appendix D.

1722.64. - Size of Vertical Conductors and Leaders.- Vertical leaders shall be sized on the maximum projected roof area, according to Table 1722.64.
Size of Vertical Conductors and Leaders.

Table 1722.64 - Size of Vertical Conductors and Leaders ¹

Size of leader or conductor ² Inches	Maximum projected roof area	
	Square Feet	gpm
2	720	30
2½	1300	54
3	2200	91
4	4600	191
5	8650	359
6	13500	561
8	29000	1205

¹ Table 1722.64. is based upon a maximum rate of rainfall of 4 inches per hour for a 5-minute duration and 10 year period. Where maximum rates are more or less than 4 inches per hour, the figures for drainage area shall be adjusted by multiplying by 4 and dividing by the local rate in inches per hour. See Appendix D.

² The area of rectangular leaders shall be equivalent to the circular leader or conductor required. The ratio of width to depth of rectangular leaders shall not exceed 3 to 1.

1722.65 - Size of Roof Gutters. - The size of semicircular gutters shall be based on the maximum projected roof area, according to Table 1722.65, Size of Roof Gutters.

1722.65 - Size of Roof Gutters ¹

Diameter of Gutter ² Inches	Maximum Projected Roof Area for Gutters of Various Slopes								
	1/16 in. per Ft. Slope		1/8 in. per Ft. Slope		1/4 in. per. Ft. Slope		1/2 in. per Ft. Slope		
	Sq. Ft.	gpm	Sq. Ft.	gpm	Sq. Ft.	gpm	Sq. Ft.	gpm	Sq. Ft. gpm
3	170	7	240	10	340	14	480	20	
4	360	15	510	21	720	30	1020	42	
5	625	26	880	37	1250	52	1770	74	
6	960	40	1360	57	1920	80	2770	115	
7	1380	57	1950	81	2760	115	3900	162	
8	1990	83	2800	116	3980	165	5600	233	
10	3600	150	5100	212	7200	299	10000	410	

¹ Table 1722.65. is based upon a maximum rate of rainfall of 4 inches per hour for a 5-minute duration and a 10 year return period. Where maximum rates are more or less than 4 inches per hour, the figures for drainage area shall be adjusted by multiplying by 4 and dividing by the local rate in inches per hour. See Appendix D.

² Gutters other than semicircular may be used provided they have an equivalent cross-sectional area.

1722.66. Size of Combined Drains and Sewers.-- To compute the size of a combined drain and sewer the method of section 1722.63 shall be used. The fixture units shall be converted into an equivalent projected roof of paved area. When the total fixture load on the combined drain is less than 256 fixture units, the equivalent drainage area in horizontal projection shall be taken as 1000 square feet. When the total fixture load exceeds 256 units, each additional fixture unit shall be considered the equivalent of 3.9 square feet of drainage area.

1723.0 - INDIRECT WASTES

1723.1 - Food Handling Establishments. In the case of food handling establishments engaged in the storage, preparation, selling, serving, processing, or otherwise handling food, indirect waste piping shall be provided for refrigerator coils, walk-in freezers, ice boxes, ice making machines, steam kettles, steam tables, potato peelers, egg boilers, coffee urns, and similar types of enclosed equipment. Dishwashing sink and open culinary sinks are excluded from this requirement. The indirect waste shall discharge through an air gap or air break into a properly vented trap or vented receptor.

1723.2 - Bar and Fountain Sink Traps. When sinks in bars, soda fountains, and counters are so located that the traps serving such sinks cannot be vented, the sink drains shall discharge through an air gap or air break into a floor drain, sink, or hopper which is properly trapped and vented.

1723.3 - Sterilizers. - Appliances, devices, or apparatus such as stills, sterilizers and similar equipment requiring waste connections and use for sterile materials shall be indirectly connected by means of an air gap.

1723.4 - Drips or drainage Outlets. - Appliances, devices, or apparatus not regularly classed as plumbing fixtures but which have drips or drainage outlets, may be drained by indirect waste pipes discharging into an open receptacle through either an air gap or air break as shall be determined by the Administrative Authority.

1723.5 - Clear Water Wastes. - Water lifts, expansion tanks, cooling jackets, sprinkler systems, drip or overflow pans, or similar devices which waste clear water only, when emptying into the building drainage system, shall discharge through an indirect waste by means of an air gap.

1723.6 - Air Gap or Air Break Required. - All indirect waste piping shall discharge into the building drainage system through an air gap or air break, as set forth in Section 1723.0 of this Code and in no instance shall the indirect waste be trapped ahead of the air gap or air break.

1723.7 - Methods of Providing an Air Gap. - The air gap between the indirect waste and the building drainage system shall be at least twice

the effective diameter of the drain served and shall be provided by one of the following methods:

- a. To a Receptor - Extend the indirect waste pipe to an open, accessible individual waste sink, floor drain, or other suitable fixture which is properly trapped and vented. The indirect waste shall terminate a sufficient distance above the flood level rim of the receiving fixture to provide the required air gap,
- b. To the Inlet Side of the Fixture Trap - Provide an air gap in the drain connection on the inlet side of the trap which receives the waste from the indirect waste.

1723.8 - Methods of Providing an Air Break. - When an air break is required between the indirect waste and the building drainage system, the distance to which the outlet of the indirect waste pipe extends below the flood level rim of the receptacle into which it is discharging shall be prescribed by the Administrative Authority.

1723.9 - Receptors or Sumps. -

Installation. - Waste receptors or sumps serving indirect waste pipes shall not be installed in any toilet room nor in any inaccessible, or unventilated space such as a closet or storeroom.

1723.10. - Cleanout Location. - If the indirect waste receptor is set below floor level, it shall be equipped with a running trap adjacent thereto with the trap cleanout brought level with the floor.

1723.11. - Strainers and Baskets. - Every indirect waste receptor shall be equipped with a readily removable metal basket over which all indirect waste pipes shall discharge, or the indirect waste receptor outlet shall be equipped with a beehive strainer not less than 4 inches in height.

1723.12. - Splashing to be Prevented. - All plumbing receptors receiving the discharge of the indirect waste pipes, shall be of such shape and capacity as to prevent splashing or flooding.

1723.13. - Domestic or Culinary Fixtures Prohibited as Receptors. - No plumbing fixture which is used for domestic or culinary purposes shall be used to receive the discharge of an indirect waste except that in a residence a kitchen sink is acceptable for use as a receptor for dishwashers and similarly a laundry tray as a receptor for a clothes washing machine.

1723.14. - Stand-Pipe Receptors. - The stand-pipe receptor for an automatic clothes washer shall be installed in one of the following ways:

- a. The stand-pipe receptor shall be individually trapped and vented. The stand-pipe shall extend no more than

30 inches nor less than 1-1/8 inches above its trap and in no case shall the trap be installed below the floor.

- b. The stand-pipe receptor shall be installed in the strainer plate of a floor drain provided the plate is tapped to receive the stand-pipe. The size of the floor drain shall depend on the discharge rate of the automatic clothes washer or the floor area to be drained, whichever is greater.

1724.1 - Chemical Piping and Accessories. - Chemical waste pipes, stacks and vents and their connecting joints shall be constructed of approved corrosion-resistive materials which are unaffected by the discharge of such wastes. No corrosive liquids, spent acids, or other harmful chemicals likely to destroy or injure drain sewer, soil or waste pipes, or which might create noxious or toxic fumes shall be discharged into the plumbing system without being diluted or neutralized by passing through an approved neutralizing device.

1724.2 - Acid Neutralization. - Approved neutralizing devices shall be automatically supplied with a sufficient intake of water or other approved diluting medium to make the contents non-injurious before being discharged into the soil or sewerage system.

Sec. 1725.0 - Special Requirements for Bath
and Toilet Rooms

1725.1. - Bath and Toilet Room Enclosures. - All bath and toilet rooms shall be enclosed in walls or partitions for the full story height; or in lieu thereof shall be provided with an independent ceiling having a clear height of not less than seven (7) feet, four (4) inches; except as provided in Section 1715.4 for auxiliary toilets in one and two family dwellings.

Water closets located in or adjoining kitchen, pantries or sink rooms, shall be compartments effectually separated from said kitchen, pantries, or sink rooms by partitions constructed of lath and plaster or other approved form of air tight construction and shall be provided with close fitting paneled doors and rabbeted door frames.

Each toilet room shall have a window opening to the outer air, the area of which shall be not less than three square feet, and no such window shall be less than one foot in width between stop beads, unless adequate mechanical ventilation is provided..

The plumber will be held responsible for the satisfactory construction of the partitions, doors and windows.

1725.2. - Toilet Room Compartment. - In all buildings other than residence buildings (Use Group L) toilet installations shall afford individual privacy by means of partitions between water closets, provided with latched doors for each individual compartment as required by the approved rules, so arranged as to permit free circulation of air throughout the toilet compartment unless otherwise approved by the Director. The doorway shall be arranged to screen the inside of the toilet room insofar as practicable.

1725.3. - Toilet Room Vestibules. - In mercantile, industrial business, assembly and institutional buildings, vestibules, anterooms, screens or other means shall be provided to insure privacy; and where toilet rooms are located adjacent to each other, they shall be separated by soundproof partitions extending to the ceiling and entrances which are in direct view of each other shall be screened and separated by a partition which makes it impossible to contact either side.

1725.4. - Shower Compartments. - Shower room compartments shall be of adequate size in accordance with the approved rules, and the floors and walls shall be constructed of approved non-absorbent, waterproof material to a height of six (6) feet above the floor.

1725.5. - Waterproofing. Except in one, two and three family dwellings bath and toilet rooms and other spaces occupied by plumbing fixtures shall have the walls and partitions constructed of sufficiently water-resistant and non absorbent materials to permit ready and repeated cleansing; and the floors of such rooms shall be waterproofed with a waterproof curb extending not less than six (6) inches in height; or they shall be otherwise constructed to permit cleansing or flushing of the floor to maintain sanitary safety, and where floor drains are required in such rooms they shall be located and constructed as approved. In one and two family dwellings, the plumbing fixtures may be installed directly in the wood or other approved flooring.

1725.6. - Lighting. - Illumination shall be provided in all toilet rooms to afford a minimum of three (3) foot candles measured at a level thirty (30) inches above the floor.

SEC. 1725.7 - VENTILATION. Ventilation of toilet and bathrooms shall comply with the requirements of Article 5.

SEC. 1726.0 - SWIMMING POOLS

SEC. 1726.1 - RECIRCULATING SWIMMING POOLS. In recirculating swimming pools, the pipe connections shall be arranged to permit drainage of water to the sewer as well as to the recirculating pumps. The drains shall be broken or other approved methods shall be provided to prevent back flow of sewage from reaching the pool.

SEC. 1726.2 - STERILIZING AND FILTRATION EQUIPMENT. Sterilizing and filtration equipment shall be adequate to keep the pool in a sanitary condition at all times and shall comply with the requirements of the State Department of Public Health. Filters shall not be connected to the water supply of the building, either for pool supply or for filter washing.

SEC. 1726.3 - PUBLIC WATER SUPPLY FOR SWIMMING POOLS. Make-up water from a public water system shall be supplied by approved methods and direct cross-connection between the public water system and the swimming pool water shall be prohibited.

SEC. 1726.4 - PLANS AND SPECIFICATIONS. Plans, specifications and pertinent data required to be submitted in connection with an application for a permit to be filed by a Licensed Master Plumber.

- A. Plans shall be drawn to scale indicating all dimensions, including the length, width, and depth of pool structure, and width of pool deck, also indicating construction in detail.
- B. A profile drawing shall be included, showing elevations of normal pool water level, elevations of sewer or drain lines which is to receive the pool, filter and overflow gutter drainage.
- C. A cross section of overflow gutters and/or skimmers.
- D. Pipe diagrams showing size of all pipes, inlets, outlets, make-up lines, vacuum lines, waste and discharge lines, circulations and other piping.
- E. The pool equipment room or area layout, showing filters, their locations, pumps, chlorinators, chemical feeders, flow meter gauges, sight glass, strainers, hair and lint interceptors, dimensions, of filter room or area, its locations, floor drain sumps, and other pertinent information.
- F. The liquid capacity of the pool.

SEC. 1726.5 - SANITATION AND SAFE WATER SUPPLY. The water supply for the pool shall meet the bacteriological standards of the City of Providence Water Supply Board for a safe drinking water.

The water supply shall be adequate and can be delivered at a rate to enable the pool to operated satisfactorily. The water in the pool shall meet the following clarity criterion:

A black disc twelve inches in diameter on the bottom of the pool at the deepest point is clearly visible from the side-walks of the pool at all distances up to ten yards, measured from a line drawn across the pool, through the object. The fresh water supply point of discharge to the pool, through a pipe, firmly fixed at a point at least eight inches above the overflow level of the pool under the diving board. There shall be a vacuum breaker and check valve installed on this line 7' 6" above pool water level. No drinking fountain or plumbing fixture is to be connected to this water supply.

SEC. 1726.6 - WATER DISINFECTION. Chlorine disinfectant in the form of sodium or calcium hypochlorite or other disinfectant material approved by the Health Department of the City of Providence, shall be applied daily as frequently as needed to maintain a residual of not less than 0.5 ppm of free chlorine, or equivalent strength for other approved materials, throughout the pool volume while the pool is in use. The PH of the water shall meet the requirements of the City of Providence potable water supply. A test kit with permanent color standards shall be provided at all pools and be used at frequent intervals to check on the adequacy of chlorine treatment, or other disinfectant materials, and hydrogen-ion concentration to the pool water. The buildings, grounds, dressing rooms, and all other family pool facilities shall be kept clean and in a sanitary condition and maintained free from garbage, trash, and other refuse.

SEC. 1726.7 - WATER SUPPLY. All swimming pools shall be provided with a potable water supply, free of cross-connections with a pool or its equipment.

SEC. 1726.8 WATER TREATMENT. The treatment system shall be so designed and installed as to provide in the water at all times when the pool is in use; excess chlorine of not less than 0.4 ppm or more than 0.6 ppm, or excess chloramine between 0.7 and 1.0 ppm, or disinfection may be provided by other approved means.

The pool owner shall be instructed in proper care and maintenance of the pool by the supplier or builder, including the use of high test calcium hypochlorite (dry chlorine) or sodium hypochlorite (liquid Chlorine) or equally effective germicide and algacide, and the importance of proper PH (alkalinity and acidity control).

SEC. 1726.9 - INLETS TO POOL. Pools shall be provided with filtered water inlet supply fittings installed so as to provide uniform circulation of water throughout the pool without existence of dead spots

The filtered inlet supply fittings shall be two (2) feet from ends on sides of tank and twelve (12) to fourteen (14) feet apart on sides of tank, on ends of tank five (5) feet apart. The piping of re-circulating systems shall be kept entirely separate from the City of Providence Water supply.

SEC. 1726.10 - OUTLET FITTING. The outlet fitting which connects to the re-circulation system shall be installed at the lowest point in the pool. It shall be ample in size with a free grating or screen area sufficient to minimize chances of clogging or occurrences of suction dangerous to the safety of bathers. The grating or screen openings shall be such that bathers' fingers or toes will not be caught or injured.

SEC. 1726.11 - OVERFLOW GUTTERS. Pools shall be entirely surrounded by overflow gutters having necessary pitch to prevent any accumulations, having ample size to carry off normal amounts of water introduced into them and also having easy access for cleaning.

SEC. 1726.13 - SKIMMERS. Skimmers may be permitted in lieu of overflow gutters providing they adequately remove floating oils and wastes and shall meet the requirements of the plumbing inspector.

SEC. 1726.14 - HAIR AND LINT INTERCEPTORS. Hair and lint interceptors shall be installed so that all water drawn from the pool for re-circulation shall pass through the hair and lint interceptors before reaching the filter.

SEC. 1726.15 - DRAINAGE FROM POOL. Drain outlet fittings from a pool shall not be directly connected to a sewer line. Drainage shall be by gravity or pumping or syphoning out into the top of an approved catch basin with check valve on outlet to sewer or sump with a trap and check valve. It shall be so constructed as to eliminate the possibility of sewerage backing into the pool.

The water from the pool shall not be drained onto streets or sidewalks or any other public property or disposed of in a manner that will cause a nuisance.

Pools shall be equipped with facilities for completely emptying the pool and for the discharge of the pool water to the sewer, and shall be at a rate not exceeding two hundred and fifty gallons per minute.

Water drained from the pool shall not be discharged to the sewer system during periods of rain or storms. This shall be a permit requirement.

SEC. 1726.16 - RECIRCULATION SYSTEMS. Pools shall be equipped with a water recirculation and filtration system. Pools with sand filter equipment shall be capable of effecting one turnover of the pool volume in eighteen hours or less at a rate of filtration not exceeding four gallons per square foot per minute.

SEC. 1727.0 - MISCELLANIOUS INDUSTRIAL AND HAZARDOUS USES

In any and all uses or occupancies of buildings and structures not specifically covered in this Code which discharge objectionable wastes dangerous to the public health and safety in the opinion of the Director or Superintendent of Health shall be provided with approved traps, interceptors, separators and other devices in accordance with the approved rules, before said waste is entered into the public sewer system.

SEC. 1727.1 - OPEN GUTTER DISCHARGES. The discharge from open gutters of industrial plants shall pass through one or more fixed metal strainers or screens of approved materials to an interceptor complying with the provisions of Section 1713.0 before emptying into the sanitary plumbing system.

SEC. 1728.0 - GAS PIPING SYSTEMS

SEC. 1728.1 - INSPECTIONS. Inspections shall be made of all rough piping installations authorized by the approved plans and permit before it has been covered or concealed and before any fixture or appliance has been attached thereto.

SEC. 1728.2 - PRESSURE TESTS. After the complete installations of gas piping and before any fixtures or appliances have been attached, the system shall be subjected to an air pressure test in accordance with the approved rules. The tests shall be made in the presence of the Director, or his duly authorized representative, and all test apparatus shall be furnished and the costs shall be borne by the permit holder. All welded piping shall be tested to withstand an air pressure of not less than fifty (50) pounds per square inch for not less than ten (10) minutes.

SEC. 1728.3 - CERTIFICATE OF APPROVAL. No piping or connection to piping of any meter, gas heater or range shall be covered up until the certificate of approval of the Director has been issued as provided in Section 1705.0.

SEC. 1728.4 - MATERIALS FOR GAS PIPING. Gas supply and distribution pipes shall be made only of materials which conform to the provisions of this Code and the approved rules adopted thereunder. In the absence of such rules, compliance with the A.G.A. specifications listed in Appendix C shall be deemed to meet the requirements of this section.

SEC. 1728.5 - PIPING AND FITTINGS.

51 - Pipe Gradients. All gas piping shall be run straight without sags or traps, shall be so pitched as to drain back to the riser, and from the riser to the meter or inlet; and all such equipment shall be installed and protected as provided in the approved rules.

.52 - Hangars and Supports. All gas piping shall be rigidly supported at intervals of not more than six (6) feet by incombustible straps, hooks or other approved supports.

.53 - Gas Piping in Masonry. When neccessary to conceal piping in bricks, stone, concrete or other masonry walls, suitable recesses shall be provided and no gas piping shall be incorporated in the construction.

.54 - Flexible Piping. The use of lead pipe, hose, or other flexible pipe, tubing or fittings shall be prohibited; except that approved flexible tubing connectors shall be permitted for gas appliances which burn not more than ninety (90) cubic feet of gas per hour.

.55 - Gas Appliances. All gas ranges and heaters shall have a straightway stopcock or valve on each branch supply and the installation of gas brackets, fixtures and clearances shall be installed to minimize the fire hazard to surrounding construction and trim in accordance with the provisions of Articles 10 and 11 and the approved ruled adopted thereunder.

SEC. 1728.6 - MAIN BUILDING SHUT-OFF. Each gas service connection which is brought into a structure shall be fitted with a straightway stopcock or shut-off valve, placed in an accessible position immediately inside of the wall through which such connection enters, except that such a stopcock or shut-off valve will not be required for low pressure gas service connection to one or two family residences in which the size of the service pipe is less than two (2) inches.

SEC. 1728.7 - UTILITY MAIN SHUT-OFF VALVE. An outside stopcock or shut-off valve shall be provided in the service connection from the main to any structure, except in a low pressure service connection to a one or two family residence in which the size of the service pipe is less than one and one-half ($1\frac{1}{2}$) inches. This outside shut-off shall be located in an approved flush covered box at or near the curb line in the sidewalk or other acceptable open area. Such valve box shall be identified with the word "GAS", or other marking clearly identifying the valve box as a gas connection, cast or otherwise permanently inscribed on the cover.

.71 - When alterations or repairs are made to a building, structure, or gas piping system the requirements of this section shall not apply to an existing gas connection unless the replacement of a section of the gas connection adjacent to the curb line is necessary for other reasons.

SEC. 1728.8 - METERS. Meters shall be located as near as practicable to the point of entrance of the service and preferable in the cellar or basement of the building or structure. The location shall be accessible, clean, dry, properly ventilated and free from steam or chemical fumes; and the meter shall be protected against extreme cold or heat.

.91 - Materials. In addition to the requirements of Sections 407.0 piping for liquefied petroleum gas shall be designed and installed of approved materials suitable for use on such systems.

.92 - Shutoffs. A main shut-off valve shall be provided outside of the building on the supply side of the main connection; and auxiliary shut-offs on the supply side of every appliance connection.

.93 - Relief Valves. The terminals from relief valves shall discharge directly to the outer air at a point not less than five (5) feet distant from any window or other opening in the building or in adjoining structures.

.94 - Installation of Bulk Oxygen Systems at Consumer Sites to conform to NFPA Standards No. 566, 1965.

.95 - Installation of non-flammable medical gas system to conform to NFPA Standards No. 565, 1962.

SEC. 1729.1 - LICENSE AND FEES. Every sprinkler company, making application for a limited license to carry on the business of Sprinkler fitting and every person making application for a limited license to carry on the business of laying drains as a licensed drainlayer shall pay the sum of Twenty-Five (\$25.00) Dollars as a license fee before a license shall be issued. Every person making application for a license to carry on the business of drainlaying or sprinkler fitting shall furnish a bond in the sum of three thousand dollars, with one or more sureties, satisfactory to the Director of Public Works, conditioned substantially, that the applicant shall indemnify save harmless the City of Providence and said Director of Public Works from all suit and actions of every name and description brought against said City, or any officer of said City, for or on account of any injuries or damages received or sustained by any person in consequence of or resulting from any work performed by said applicant, his servants or agents, or of or from any improper materials used in said work, or of or from any negligence in guarding said work, or of or from any act or omission of said applicant, his servants or agents; that said applicant shall faithfully perform said work in all respects and shall also replace and restore that portion of any street in which said applicant, his servants, or agents, shall make any excavation, to as good condition as that in which the same was before said work was performed, and shall also keep and maintain such street in like good condition to the satisfaction of the Director of Public Works for the period of one year, and with or without notice to said applicant, repair such street and that the cost thereof shall be paid by said applicant; and that said applicant shall comply in all respects with the rules and regulations established by said Director of Public Works relative to said work, and shall also pay all fines imposed upon him for violation of any such rule or regulation.

SEC. 1730.0 - TRANSFER OF PLUMBING WORK

SEC. 1730.1 - After a plan for any plumbing work has been approved by the Director, no plan for the same work, to be performed by another plumber, shall be approved by Director except on the written request of the party for whom the work is being performed, and on notice to the plumber who filed the first plan; and upon such request and notice the Director may accept and approve a like-plan, or a different plan, from

any other plumber for such work.

SEC. 1731.0 - INSPECTION OF WORK OF PLUMBING AND DRAINLAYING

SEC. 1731.1 - Notice in writing must be sent to said Director whenever the work is sufficiently advanced for inspection, but no application for inspection of plumbing or drainage work shall be received at the office of the Director unless filed in writing upon blanks provided for the purpose; and in case it shall be necessary for said Director to inspect said work more than once, by reason of the same not being ready for inspection after notice has been given to said Director of the Completion of work, then said Director may charge and collect from said plumber or drain-layer the sum of five dollars for each visit of inspection required to be made as aforesaid; and all fees or fines collected by the Director hereunder shall be paid as required by law.

SEC. 1731.2- Licensed plumbers shall before installing water mains, distributing pipes, or connections, make a written description of, and file a plan for all new work, alterations, or additions of, the ordinary, designed, or special uses to which the water is to be applied. Whether for human consumption or otherwise, also a description of all fixtures, apparatus, or appliances to be used, and connected to the City of Providence Water Supply.

VENTILATION

SEC. 505.2 - OPERATION OF VENTILATION SYSTEMS. Where mechanical ventilation is accepted as an alternate for natural ventilation or is required under the conditions herein prescribed, the system, equipment and distributing ducts shall be installed in accordance with the provisions of Article 10 and 18; and such systems shall be kept in operation at all times during normal occupancy of the building or space so equipped.

SEC. 506.0 - EXISTING BUILDINGS.

SEC. 506.1 - UNSAFE CONDITIONS. In all existing rooms or spaces in which the provisions for light and ventilation do not meet the requirements of this article and which, in the opinion of the Director, are dangerous to the health and safety of the occupants, he shall order the repairs or installations required to render the building or structure livable for the posted use and occupancy.

SEC. 506.2 - ALTERATIONS. No building shall hereafter be altered or rearranged so as to reduce either the size of a room, the fresh air supply, or the amount of available natural light to less than that required for buildings hereafter erected; or to create an additional room, unless made to conform to the requirements of Section 507.0. Unless greater provision of artificial light and ventilation is deemed necessary by the Director to insure healthful living conditions, he may permit new rooms to be of the same height as existing rooms in the same story.

SEC. 506.3 - UNCOVERED YARD AND COURT AREA. No building shall be hereafter enlarged, nor shall the lot on which it is located be diminished so as to decrease the required courts or yards to less than that prescribed in this article for the natural lighting and ventilation of new buildings.

SEC. 507.4 - ALTERNATE DEVICES. In place of the means for natural light and ventilation herein prescribed, alternate arrangement of windows, louvres, or other methods and devices that will provide the equivalent performance requirements shall be permitted when complying with the approved rules.

SEC. 507.5 - ALTERNATE VENTILATION. In all spaces when the volume of net space per person is less than four hundred (400) cubic feet and the required window ventilation is not provided, means of mechanical ventilation shall be installed to comply with Section 505.0 and Article 18.

SEC. 513.0 - BATH AND TOILET ROOMS

Every bath and toilet room shall be lighted and ventilated by one of the methods prescribed in this section.

SEC. 513.1 - EXTERIOR WINDOWS. By windows opening to the outer air as provided in Section 507.0 but in no case less than three (3) square feet in area;

SEC. 513.2 - VENT SHAFT WINDOWS. By opening on a vent shaft with a cross-sectional area of one (1) square foot for every foot in height, but not less than nine (9) square feet in area, open to the outer air at top constructed with equivalent side louver openings;

SEC. 513.3 - VENTS AND DUCTS. By individual vents or ducts constructed of approved incombustible materials complying with Section 1019.0, with a cross-sectional area of one-half (1/2) square foot, and one-third (1/3) additional square foot for each additional water closet or urinal above two (2) in number. Such ducts shall be of adequate height and so located as to insure an adequate minimum supply of fresh air in accordance with the approved rules.

SEC. 513.4 - SKYLIGHTS. By a skylight of approved incombustible construction not less than three (3) square feet in area, with ventilating openings.

SEC. 513.5 - MECHANICAL VENTILATION SYSTEM. By any system of mechanical or gravity ventilation capable of exhausting forty (40) cubic feet of air per minute per water closet or urinal in public bathrooms, and not less than twenty-five (25) cubic feet of air per minute in private bathrooms, but in no case shall the fresh air supply be less than specified in Section 515.0.

SEC. 515.0 - REQUIRED FRESH AIR SUPPLY.

Mechanical or gravity systems of ventilation shall provide the minimum fresh air supply in cubic feet per minute per square foot of floor area of rooms and spaces as herein prescribed.

SEC. 515.5 - OPERATING ROOMS. Operating rooms of institutional buildings, lockers and rest rooms, laboratories, toilet and bathrooms shall be provided with not less than two (2) cubic feet of fresh air.

SECTION 2. This Ordinance shall take effect upon its passage and all ordinances or parts of ordinances inconsistent herewith are hereby repealed.

IN CITY
COUNCIL
MAY 16 1972
FIRST READING
READ AND PASSED
Vincent L. Caspia
CLERK

APPROVED
JUN 2 1972
Joseph H. Carley
MAYOR

IN CITY
COUNCIL
JUN 8 - 1972
FINAL READING
READ AND PASSED
.....
PRESIDENT
Vincent L. Caspia
CLERK

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REVISING, AMENDING, AND MODIFYING
THE PLUMBING CODE OF THE CITY OF
PROVIDENCE CONTAINED WITHIN
CHAPTER 1079, 1956, SECTIONS
1700-1731, ENTITLED "PLUMBING,
DRAINAGE, AND GAS PIPING" AND
SECTIONS 505.2-515.0, ENTITLED
"VENTILATION," CONTAINED WITHIN
AND ALSO KNOWN AS THE "BUILDING
ORDINANCES OF THE CITY OF
PROVIDENCE."

IN CITY
COUNCIL

APR 6 - 1972

FIRST READING
REFERRED TO COMMITTEE ON
ORDINANCES

Constance C. Cypres
CLERK

THE COMMITTEE ON
ORDINANCES

Approves the report of
The WILLIAM C. CYPRES
William C. Cypres
MAY 10 1972 Clerk

*Councilman Bianetta
and Councilman Lynch, by request*

APR 3 2 42 PM '72
DEPT. OF CITY CLERK
PROVIDENCE, R.I.

FILED