

ORDINANCE NO. 119

AMENDING CHAPTER 5 BY ADDING
THERETO ARTICLE IV,
ENTITLED "PLUMBING"

AN ORDINANCE AMENDING CHAPTER 5 OF THE CODE OF THE
CITY OF CHARLOTTE BY ADDING THERETO ARTICLE IV,
ENTITLED "PLUMBING".

BE IT ORDAINED by the City Council of the City of Charlotte, North Carolina;

Section 1. The Code of the City of Charlotte is hereby amended by adding
to Chapter 5 thereof Article IV, entitled "PLUMBING", to read as follows:

ARTICLE IV PLUMBING

PART 1 - ADMINISTRATIVE

Sec. 5-400 TITLE. This Article shall be know and may be cited
as THE PLUMBING CODE OF THE CITY OF CHARLOTTE, NORTH CAROLINA, hereinafter
referred to as THIS CODE.

Sec. 5-401. SCOPE. The provisions of this Code shall apply
to the installation, erection, alteration, repair, use and maintenance
of plumbing systems consisting of house sewers, building drains, waste,
ventilating systems, hot and cold water supply systems, fixtures, and
appurtenances thereof under the jurisdiction of this Code.

Sec. 5-402. PLUMBING ADVISORY BOARD.

(a) Created. The Plumbing Advisory Board, as appointed by
the City Manager, shall consist of five members as follows: Two contractors
engaged in plumbing contracting, one plumber holding a journeyman plumber's
certificate as issued by the City of Charlotte, North Carolina, one profession-
al engineer registered in North Carolina and whose principal field is
mechanical engineeering and one architect registered in North Carolina. The
two plumbing contracts shall be licensed according to GS-87, Article 2.

(b) Membership. One member of the Advisory Board shall be
appointed for a term of one year, two for a term of two years, and two
for a term of three years. Thereafter, each term shall be three years.
A member may serve no more than two full terms consecutively. The City
Manager may remove any member from the Board for continued absence from
the meetings or upon the request of the Board.

(c) Officers. The Board shll elect a Chairman and Vice Chairman
from its membership. The Chairman shall serve for a period of one year.
The Chief Plumbing Inspector shall be an ex-officio member without power
to vote and shall serve as the Secretary of the Board. The Inspection
Department will perform all secretarial duties for the Board under the
direction of the Chief Plumbing Inspector.

(d) Rules. Three members of the Board shall constitute a quorum. The affirmative vote of at least two members shall be required for every action of the Board. Every action of the Board shall be by resolution with certified copies to the Building Standards Board and to other interested parties, if any. A member of the Board shall be disqualified from passing on any question in which he, his immediate family or any corporation in which he or any member of his immediate family is a stockholder is personally interested.

All meetings of the Board shall be open to the public. The Board shall keep the minutes of its proceedings, showing the vote of each member on every question. The Board shall meet at least once a month, if there is business to come before it, and a meeting of the Board may be called by the Chairman or at the request of the City Manager or Building Standards Board. The Board shall establish all of the rules and regulations for its own procedure not inconsistent with the provisions of this code.

(e) Powers. 1. The Board shall hear and take action on any appeal from a decision of the Chief Plumbing Inspector.

2. The Board shall have power to recommend necessary changes to this Code and all requests for amendments, changes or additions to this Code shall be heard first by this Board. The Board shall submit to the Building Standards Board its findings and recommendations concerning any requested amendment, change or addition to the Code. Should there be a request for a change that is not approved by the Board, the change must obtain a three-fourths majority vote of the Building Standards Board before it can be recommended to the North Carolina Building Code Council for approval and subsequently to the City Council for enactment into law.

3. The Board shall act as advisor to the Inspection Department on matters of interpretation of the Code and on request for technical assistance.

4. Decisions of the Board shall be subject to approval by the Building Standards Board.

(f) Procedure for Hearing Appeals. All requests for hearings or other business to come before the Board shall be filed with the Chief Plumbing Inspector at least two weeks before the next monthly meeting. Appeals from the decision of the Chief Plumbing Inspector must be made

within fifteen (15) days from the date of his decision by filing with the Chief Plumbing Inspector a notice of appeal, specifying the grounds for the appeal. An appeal stays all proceedings in furtherance of the action appealed from, unless the Chief Plumbing Inspector shall determine that in his opinion a stay would cause imminent peril to life or property. In such case, proceedings shall not be stayed except by a restraining order granted by a Court of Record with notice to the Chief Plumbing Inspector showing due cause.

An appeal involving a particular plumbing system must have the approval of the building owner before an appeal is filed with the Chief Plumbing Inspector. The Board shall hold a public hearing on each appeal and give due notice to the party or parties concerned and shall give notice to the public by posting, publication, or otherwise as the Board shall deem appropriate. In passing upon any questions, the Board may require submission of evidence or proof to substantiate claims, and may require additional data and testw which, in the opinion of the Board, are needed for adequate consideration of the appeal.

The Board shall have the power to reverse or affirm in whole or in part, or modify the decision of the Chief Plumbing Inspector. The Board shall in every case reach a decision without unreasonable or unnecessary delay, and should such Board not decide within sixty (60) days after the appeal is filed, the action of the Chief Plumbing Inspector shall be deemed sustained. Every decision shall be promptly filed in the office of the Chief Plumbing Inspector and shall be open to public inspection. A certified copy of every decision on an appeal shall be sent by mail or delivered to the appellant and a copy shall be filed with the Building Standards Board and publicly posted in the office of the Chief Plumbing Inspector for two weeks after filing.

Interpretation of the requirements of this Code may be made by the Board only when the enforcement of the strict letter of the Code would do manifest injustice, and would be contrary to the spirit and purpose of this Code or public interest. A decision of the Board shall specify the conditions upon which the decision is made and the reasons therefore. The Chief Plumbing Inspector shall be bound by the decisions of the Board.

Any persons aggrieved by the decision of the Board, whether previously a part to the proceeding or not, or a municipal officer or Board member may, within fifteen (15) days after the filing of the decision of the Board in the office of the Chief Plumbing Inspector, apply to the Building Standards Board for a hearing. All questions involving the provisions of the State Code shall be subject to the limitations imposed by the State Code, and no decision of the Board shall conflict with the State Code or the decisions of the North Carolina Building Code Council, and where similar, the more stringent shall apply.

Sec. 5-403. DUTIES OF PLUMBING INSPECTOR. The plumbing inspector shall have the power, and it shall be his duty, to enforce the requirements and provisions of this Code; to approve or disapprove plans and specifications pertinent to plumbing within a reasonable time after receipt of an application; to issue permits, notices and certificates; to witness tests and to perform such other duties that may be required by the local governing authority, in connection with the administration and enforcement of this Code and other applicable plumbing regulations. The Superintendent of the Building Inspection Department, with the approval of the City Manager, shall appoint the Chief Plumbing Inspector and his assistants who shall be skilled and experienced in plumbing and drainage, and shall be qualified journeyman plumbers, holding certificates as issued by the City of Charlotte, North Carolina, for a minimum of five (5) years.

Sec. 5-404. RIGHT OF ACCESS FOR PURPOSES OF INSPECTION, POWER TO CONDEMN, REVOKING OF LICENSE, EXCEPTION. The plumbing inspector shall have the right to enter public or private property within the jurisdiction of this Code at such reasonable time as may be necessary for the performance of his duties. The plumbing inspector is empowered to condemn any plumbing system, or segment thereof, fixtures, apparatus or appurtenances which are not installed, altered or restored in accordance with the provisions of this Code. In the interest of public health, the administrative authority further shall have the right to condemn any plumbing system or part thereof which is a detriment to health and safety and require that same be remedied immediately.

The inspector shall promptly condemn and order the removal of any defective material or any part of the plumbing system not installed

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in accordance with this Code. If faulty or defective work has not been corrected after seven (7) days written notice to the address of the plumber holding the license for such work, such plumber's license shall be revoked by the City Manager. The presence of any wilfully hidden defects shall be sufficient cause for the revocation of the plumber's license. Such plumber whose license is in question shall have the right to appeal to the Plumbing Advisory Board but, pending a decision by the Plumbing Advisory Board with respect to such appeal, no further permits shall be issued for additional work by such plumber.

Buildings constructed by the State of North Carolina in accordance with plans and specifications approved by the North Carolina Department of Administration are not subject to inspection by the plumbing inspector of a county or municipality or the codes and requirements thereof. (See G.S. 143-135.1)

Sec. 5-405. DISCRETIONARY POWER, APPEAL. In event plumbing cannot be reasonably installed, altered or restored in accordance with the provisions of this Code, due to structural barrier, then in this event, the decision of the Plumbing inspector shall prevail, based upon generally accepted standards that will not jeopardize the public health or safety. Should any controversy arise relating to the interpretation of this Code, the master plumber may appeal to the local governing authority whose decision shall be final, provided, however, an appeal from the local governing authority may be taken to the North Carolina Building Code Council or Superior Court, as provided for in G.S. 143-140.

Sec. 5-406. MASTER PLUMBER, BOND. The words, "Master Plumber", when used in this Code, shall be deemed and held to mean, a person who holds a current license issued by the State Board of Examiners of Plumbing and Heating Contractors, in accordance with the provisions of G.S. 87, Article 2, which authorizes the said person to engage in the business of plumbing contracting in cities or towns having a population of more than 3500, in accordance with last official U. S. Census.

Before any firm, person, or corporation shall engage in the business of master plumber or do or cause to be done any plumbing work in the City of Charlotte, said person, firm or corporation shall furnish an approved bond in the sum of \$1,000.00, conditioned upon the faithful performance of duty in making connections with the sewers of the said City, and to indemnify said City against loss to person or property in any manner whatsoever for any negligence or unskilled or negligent work or conduct in the installation of

any plumbing or house drainage, or for any damage to the sewers, sidewalks or streets of said City or for the use of defective or improper materials, in connection therewith; also to insure payment of inspection fees.

Sec. 5-407. JOURNEYMAN PLUMBER AND EXAMINATIONS. For the purpose of this Code, the words, "Journeyman Plumber", shall be deemed and held to mean a person who is skilled in the art of installing plumbing, and who is employed by, and under the supervision and jurisdiction of a Master Plumber as defined herein.

Any person who wishes to be employed by a qualified plumbing contractor as a journeyman plumber shall appear in person before the examining board (which board shall consist of one master plumber, one journeyman plumber, and the plumbing inspector, the members of said board to be appointed by the City Manager), and exhibit proof of the right to be engaged as a journeyman plumber. Each applicant for this examination shall pay a fee of \$5.00. All examination fees shall go to the members of the examining board as remuneration for the time and services of the board members in connection with holding said examinations.

Sec. 5-408. APPLICATIONS, PERMITS REQUIRED: EXCEPTIONS. Applications shall be made to, and permits shall be obtained from the plumbing inspector, for the installation of plumbing systems or the extensions, alterations or general repairs thereof, in accordance with the provisions of this Code, however, the provisions of this section of the Code shall not apply to those who make minor repairs or replacements to an already installed system of plumbing, on the house side of a trap, provided such repairs or replacements in no wise disrupt the original water supply, waste or ventilating systems. In event a fixture is replaced, a permit shall be secured and same shall be inspected by the plumbing inspector.

All repair work must be done by bonded licensed plumbers or their registered journeyman plumbers.

Sec. 5-409. APPLICATIONS, PERMITS ISSUED TO MASTER PLUMBERS. Applications to install plumbing in the City of Charlotte shall be received from, and permits issued only to, master plumbers, as defined herein.

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Sec. 5-410. MASTER PLUMBER NOT TO SECURE PERMIT FOR OTHERS.

No master plumber shall secure a permit from the plumbing inspector for others, not qualified in accordance with the provisions of this Code, to install plumbing.

Sec. 5-411. APPLICATIONS, PERMITS REQUIRED BEFORE WORK BEGINS. Applications must be approved by, and permits secured from the plumbing inspector before beginning the installation, alteration or restoration of plumbing, as provided in this Code.

Sec. 5-412. PERMIT MAY BE REVOKED, DAMAGES. The plumbing inspector, at any time during the progress of the installation of plumbing, may revoke a permit for reason of noncompliance with the provisions of this code, and, further, upon the condition that interested parties shall have no claim for damages that may result from such procedure.

Sec. 5-413. PERMIT MAY BE REFUSED. Additional permits shall not be issued to any master plumber during a period in which he refuses to correct previous defects in the installation of plumbing as required by the plumbing inspector.

Sec. 5-414. INSPECTION REQUIRED. All plumbing installed in accordance with the provisions of this Code shall be inspected by the plumbing inspector and no part of the plumbing system shall be covered until same has been so inspected and approved as herein prescribed.

Sec. 5-415. REQUEST FOR INSPECTION. Calls for inspection shall be filed in the plumbing inspector's office at or before 9:30 A.M. in order to receive attention that day.

Sec. 5-416. FINAL INSPECTION. When the installation, alteration or restoration of plumbing has been completed in accordance with the provisions of this code, a request for final inspection shall be filed at the office of the plumbing inspector by the master plumber.

Sec. 5-417. PLUMBING SYSTEM TO BE TESTED. In order to prevent the use of defective materials and to provide for water tight or air tight joints, the piping of the entire drainage and venting system shall be tested in the presence of the plumbing

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inspector by application of the water test as follows. If such test is applied to the entire system, all openings in the piping shall be tightly closed, except the highest openings above the roof, and the entire system shall be filled with water to the point of overflow. If the system is tested in sections each opening shall be tightly plugged, except the highest opening of the section under the test, and each section shall be completely filled with water. No section shall be tested with less than a ten (10) foot head of water. In testing successive sections, at least the upper ten (10) feet of the next succeeding section shall be tested so that no joint or pipe in the building shall have been submitted to a test of less than a ten (10) foot head of water. In lieu of the above water test, the plumbing inspector may require an air test, to consist of not less than five (5) pounds per square inch of pressure in the system. In either of the above tests, the plumbing system shall sustain a constant water level or air pressure per square inch for a period of not less than fifteen (15) minutes. If either of the above tests reveals defective materials or workmanship, same shall be replaced or corrected, and testing as provided in this section, shall be repeated. A roughing-in test shall be required before any piping of the plumbing system is concealed or fixtures set.

Sec. 5-418. TEST OF EXISTING PLUMBING. In event the plumbing inspector has reason to believe that insanitary conditions exist, in habitable buildings or on premises, he may require the owner or agent thereof to provide for tests, as described in Sec. 5-417 hereof, and in event defective materials or workmanship are revealed by such tests, the said owner or agent shall immediately repair the plumbing system in accordance with the directions of the plumbing inspector, and in accordance with the provisions of this Code.

Sec. 5-419. MATERIALS AND LABOR FOR TESTS. All equipment, material, power and labor necessary for inspection and tests shall be furnished by the master plumber.

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Sec. 5-420. FINAL CERTIFICATE OF INSPECTION ISSUED BY PLUMBING INSPECTOR. If, after the final inspection and tests of plumbing, as provided for in this Code, the plumbing inspector approves of same he shall issue a certificate of compliance to the master plumber. A property owner or his agent shall be entitled to a copy of said certificate of compliance upon request to the plumbing inspector.

Sec. 5-421. PERMITS AND FEES. No person, firm or corporation other than a master plumber or a journeyman plumber employed by a master plumber shall make or cause to be made connections to any plumbing fixture drain, waste, soil, or vent pipe, or water supply system in connection therewith. A permit must be secured from the plumbing inspector or his representative to do so, and it shall be the duty of the plumbing inspector to keep suitable records of all permits issued.

Applications for plumbing permits shall be made on or before date work is begun on a prescribed form and shall state the correct lot, block or street number where work is to be performed and the name of the owner of the property together with a readable drawing of the work, indicating pipe sizes and character of material.

If, after permit is secured, it is desired to alter or deviate in any manner from the terms of the application and drawing submitted at time of securing the permit, notice of such intention shall be given to the plumbing inspector, and a correct drawing furnished before the inspection is made.

Permit shall be revoked by the plumbing inspector for any material departure from the approved application and drawing, or in case any false statement or representation was made in securing the permit.

Each permit shall lapse by limitation and become void if the work is not commenced within 12 months from date of issue.

A plumbing inspection fee of one dollar fifty cents (\$1.50) per fixture shall be charged and paid to the City of Charlotte on or before the 10th day of the month following date permit is issued.

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Whenever an inspection is required where no fixtures are installed, an inspection fee of \$1.50 shall be paid for each inspection. In the event of default in payment of fees as above prescribed, no further permits shall be issued to the person in default until such time as his account is paid in full.

A permit shall be required for the following changes and replacements: Change of sewer from septic tank to a sanitary sewer, replacement or installation of hot water tank, change from terra cotta sewer to iron pipe, installation of indirect waste, or for moving any fixture from one location to another. The fee set forth in the above paragraph of this section shall be charged for each such change or replacement.

Extra plumbing inspections shall be charged for at the rate of \$1.50 per trip. "Extra plumbing inspection" shall mean any additional inspection trip made by the plumbing inspector or his assistants, where necessary on account of the failure of any plumbing contractor or certified plumber in charge of the work to specify properly the location of the work, or to install plumbing or apparatus in proper manner or where necessary in any case in order to insure compliance with this article.

Sec. 5-422. PROPERTY OWNERS, AGENT TO REPAIR OR REPLACE CONDEMNED PLUMBING. It shall be the duty of any owner, agent or person having control of property to immediately repair or replace in accordance with the provisions of this Code, any segment of the plumbing system which has been condemned by the plumbing inspector.

Sec. 5-423. DISCONTINUANCE OF SEWER CONNECTION. For persistent discharge into the city sewer of substances injurious thereto, the plumbing inspector shall have the power to disconnect the sewer connection.

Sec. 5-424. PLUMBING FOR TENEMENTS AND CERTAIN OTHER BUILDINGS. Every owner of any tenement house, boarding and lodging house, workshop, store or manufactory shall provide adequate plumbing fixtures for such houses or tenements and for the lodgers or workers therein, where such building

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property line abuts a street or alley wherein is laid a public sewer. All water closets shall be located in well lighted and ventilated rooms, and shall be kept in a sanitary condition. There shall be provided one (1) water closet for every fifteen (15) men or women inhabitants or employees in such shops, factories or other buildings, these to be located as remotely from each other as is possible. Separate toilet rooms and at least one (1) for each family shall be provided for apartments and flats which are to be occupied by separate families.

Sec. 5-425. LOCATION OF WINDOWS IN RELATION TO VENT STACKS. In the event that a structure is built higher than an existing structure, the owner of the structure shall not locate windows within ten (10) feet of any existing vent stack on the lower structure, unless the owner of such higher structure shall defray the expenses of or shall himself make such alterations as are necessary to conform with the provisions of this Code.

Sec. 5-426. LOCATION OF WATER CLOSETS WITH REFERENCE TO WORKING AREA. In the construction of commercial and industrial buildings water closets shall be located not more than one floor above or below the regular working area of occupants; however, the above rule shall be waived when passenger elevators are provided.

Sec. 5-427. INDIVIDUAL SEWAGE DISPOSAL SYSTEM. In those instances where the installation of a private residential sewage disposal system cannot be avoided, septic tanks shall be installed according to the North Carolina State Board of Health and the Mecklenburg County Health Department regulations.

Sec. 5-428. INDIVIDUAL WATER SUPPLY. Where connection to a municipal water supply or public water system is not possible, private water supplies shall be constructed in accordance with State Board of Health Bulletin No. 476, "Protection of Private Water Supplies."

Sec. 5-429. AIR CONDITIONING EQUIPMENT: APPLICATION REQUIRED. No installation of air conditioning equipment requiring the use of water for direct cooling, in the absence of evaporative condensers or cooling towers, shall be installed on any

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premises supplied from a municipal water system until a permit authorizing such installation has been issued by the local administrative authority. Applications for permits shall specify the make, type, and tonnage of installation, the minimum and maximum water requirements and such additional information regarding the proposed installation as may be required.

Sec. 5-430. SEWER CONNECTIONS OUTSIDE OF CITY LIMITS. All persons living outside the limits of the City of Charlotte shall be permitted to make connections with the sanitary sewer and/or city water lines of the City of Charlotte only as provided herein.

Permission to connect with the City sewer system will be conditioned upon the premises being supplied with City water and upon the plumbing being installed in accordance with this Article. All work installed must be done by a person or persons qualified in Sec. 5-409.

PART 2 - TECHNICAL

Sec. 5-431 - DEFINITIONS

For the purpose of this Article the following words and phrases are deemed and held to mean:

1. Administrative Authority - The Administrative Authority is the individual official, board, department or agency established and authorized by the State, county, city or other political subdivision to administer and enforce the provisions of this Plumbing Code as adopted or amended.
2. Air Gap - The air gap in a water supply system for plumbing fixtures is the unobstructed vertical distance between the supply fitting outlet (spout) and the highest possible water level in the receptor when flooded, not considering any below rim overflow attachment, whether operative or not.
3. Approved - Approved means accepted or acceptable under an applicable specification stated or cited in this code or accepted as suitable for the proposed use by the Administrative Authority.
4. Area Drain - An area drain is a drain installed to collect surface or rain water from an area or open court on the ground level.

5. Backflow- Backflow means the flow of water or other liquids, mixtures or substances into a potable water supply system from any source not intended for its supply. Back-siphonage is one type of backflow.

6. Backflow Connection - A backflow connection is any arrangement whereby backflow can occur.

7. Backflow Preventer - A backflow preventer is a device or means to prevent backflow into the potable water system.

8. Back-Siphonage - Back-siphonage is the flowing back of used, contaminated or polluted water from a plumbing fixture or vessel into water supply pipes due to negative pressure in such pipes.

9. Back Vent Pipe - A back vent pipe is that part of a vent line which connects directly into an individual trap underneath or back of the fixture it serves and extended to the branch or main vent at any point higher than the fixture or fixture trap it serves.

10. Branch - The Branch of any system of piping is that part of the system which extends horizontally at a slight grade, with or without lateral or vertical extensions or vertical arms, from the main to receive fixture, soil or waste outlets not directly connected to the main.

11. Branch Interval - A branch interval is a length of soil, waste or water pipe corresponding in general to a story height, but in no case less than 8 ft. within which the horizontal branches from plumbing fixtures on one floor or story are connected to the stack.

12. Building - A building is a structure built, erected, and framed of component structural parts designed for the housing, shelter, enclosure or support of persons, animals or property of any kind.

13. Building Drain - The building (house) drain is 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 (house) sewer beginning 5 ft. outside the building wall.

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14. Building Sewer - The building (house) sewer is that part of the horizontal piping of a drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sewer, private sewer, individual sewage disposal system or other point of disposal.

15. Circuit Vent - A circuit vent is a branch vent that serves two or more traps and extends from in front of the last fixture connection of the horizontal branch to the vent stack.

16. Combination Fixture - A combination fixture is a fixture combining one sink and tray or a two-or-three compartment sink or tray in one unit.

17. Combination Waste and Vent System - A combination waste and vent system is 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 flow line of the drain.

18. Common Vent - A common vent is a vent connecting at the junction of two fixture drains and serving as a vent for both fixtures.

19. Continuous Vent - A continuous vent is a vertical vent that is a continuation of the drain to which it connects.

20. Continuous Waste - A continuous waste is a drain from two or three fixtures connected to a single trap.

21. Cross-Connection - A cross-connection is any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other water of unknown or questionable safety, whereby water may 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).

22. Dead End - A dead end is a branch leading from a soil, waste, vent, building drain or building sewer, which is terminated at a developed distance of 2ft. or more by means of a cap, plug or other fitting not used for admitting water to the pipe.

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23. Developed Length - The developed length of a pipe is its length along the center line of the pipe and fittings.

24. Drain - A drain or drain pipe is any pipe which carries waste water or water-borne waste in a building drainage system.

25. Drainage Piping - Drainage pipe is all or any part of the piping of a plumbing system, which conveys sewage, drain water or other liquid wastes including the vents.

26. Durham System - Durham System is a term used to describe soil or waste systems where all piping is of threaded pipe, tubing or other such rigid construction, using recessed drainage fittings, to correspond to the types of piping.

27. Fixture Unit - A fixture unit is a quantity in terms of which the load-producing effects of the plumbing system of different kinds of plumbing fixtures are expressed on some arbitrarily chosen scale. For the purpose of this Code, one fixture unit equals one cubic foot or 7 1/2 gallons per minute, which is practically the average discharge of one lavatory with a 1 1/4" plug and a 1 1/2" trap and waste.

28. Floor Drain - A floor drain is a drain installed to collect washings or surplus waste water from a floor surface.

29. Fire Line - A system of pipes and equipment used exclusively to supply water in an emergency for extinguishing fire.

30. Grease Interceptor - An interceptor is a device designed and installed so as to separate and retain deleterious, hazardous, or undesirable matter from normal waste and permit normal sewage or liquid wastes to discharge into the disposal terminal by gravity.

31. Horizontal Branch - A horizontal branch is a drain pipe extending laterally from a soil or waste stack or building drain, with or without vertical sections or branches, which receives the discharge from one or more fixture drains and conducts it to the soil or waste stack or to the building (house) drain.

32. House Drain - See Building Drain

33. House Sewer - See Building Sewer

34. Indirect Waste Pipe - An indirect waste pipe is a pipe that does not connect directly with the drainage system but

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conveys liquid waste by discharging into a plumbing fixture or receptacle which is directly connected to the drainage system.

35. Individual Vent - An individual vent is a pipe installed to vent a fixture trap, and which connects with the vent system above the fixture served or terminates in the open air.

36. Industrial Waste - Industrial waste is liquid waste resulting from the processes employed in industrial establishments and is free of fecal matter.

37. Local Ventilating Pipe - A pipe provided to remove foul air from a room or fixture to the outer air. It is not to be connected to or with any pipe of a house drainage system.

38. Loop Vent - A loop vent is the same as a circuit vent, except that it loops back and connects with a stack vent instead of a vent stack.

39. Main - The main of any system of continuous piping is the principal artery of the system to which branches may be connected.

40. Main Sewer - A main sewer is a common sewer directly controlled by local public authority. Private main sewer is that part of a sewer system that connects to the City Sewer main and continues on private property, with proper manholes to serve one or more buildings, and is to be controlled and maintained by the property owner.

41. Main Vent - The main vent is the principal artery of the venting system to which vent branches may be connected.

42. Outbuilding or Accessory Building - A building or structure which is incidental and subordinate to the principal building and located on the same lot or premises as the principal building or structure.

43. Plumbing - Plumbing, in its broadest sense, is the art and science of creating and maintaining sanitary conditions in and about buildings where people live, work or assemble, by providing permanent means for a supply of safe, pure and wholesome water, ample in volume and of suitable temperatures for drinking, cooking, bathing, washing and cleaning, and to cleanse

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all waste receptacles and like means of reception and speedy and complete removal from the premises of all fluid or semi-fluid organic wastes and other impurities incident to human life and occupation.

Plumbing, in a mechanical sense, is the art and science of installing the pipes to provide the water supply, with apparatus for its control and handling, fixtures and appliances to receive wastes or surplus water, the soil, waste, drain and sewer system for removing the waste or surplus water, traps to prevent sewer air from entering the occupied portion of the building, ventilating pipes to protect the trap seals and provide for a cleansing circulation of air throughout the plumbing system. It includes extensions of the water supply distributing system for fire-fighting or mechanical purposes, and where no street or private sewer exists, it includes the means of sewage disposal, and generally all work usually and customarily done by plumbers to the property line.

44. Plumbing Fixture - A plumbing fixture is any receptacle intended to receive and discharge water, liquid or water-carried wastes into a drainage system with which it is connected.

45. Plumbing System - The plumbing system includes the water supply and distribution pipes; plumbing fixtures and traps; soil, waste and vent pipes; building drains and building sewers including their respective connections, devices and appurtenances within a building or on the premises.

46. Premises - Premises shall be deemed and held to mean a lot or parcel of land, which may or may not contain a structure or building.

47. Pool - A pool is a water receptacle used for swimming or as a plunge or other bath, designed to accommodate more than one bather at a time. This shall include baptistries or ornamental fountain basins, or similar construction. Pools are subject to all rules for trapping, venting and water supply.

48. Potable Water - Potable water is water which is satisfactory for drinking, culinary and domestic purposes and meets

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the requirements of the health authority having jurisdiction.

49. Public or Public Use - In the classification of plumbing fixtures, public applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, railroad stations, public buildings, bars, public comfort stations, and other installations where a number of fixtures are installed so that their use is similarly unrestricted.

50. Relief Vent - A relief vent is a vent the primary function of which is to provide circulation of air between drainage and vent systems.

51. Riser - A riser is a water supply pipe, which extends vertically one full story or more to convey water to branches or fixtures.

52. Sanitary Sewer - A sanitary sewer is a pipe which carries sewage and excludes storm, surface and ground water.

53. Septic Tank - A septic tank is a watertight receptacle which receives the discharge of a drainage system or part thereof, and is designed and constructed so as to separate solids from the liquid, digest organic matter through a period of detention, and allow the liquids to discharge into the soil outside of the tank through a system of open-joint or perforated piping or disposal pit.

54. Sewage - Sewage is any liquid waste containing animal or vegetable matter in suspension or solution, and may include liquids containing chemicals in solution.

55. Size and Length - The size of pipe is the nominal internal diameter, except that other than iron pipe size tubing is measured by its outside diameter. The developed length of a pipe is its length along the center line of pipe and fitting.

56. Soil Pipe - A soil pipe is any pipe which conveys the discharge of water closets or fixtures, having similar functions, with or without the discharge from other fixtures, to the building drain or building sewer.

57. Stack - Stack is a general term for any vertical line of soil, waste or vent piping.

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58. Stack Vent - A stack vent is the extension of a soil or waste stack above the highest horizontal or fixture branch connected to the stack. (See Vent Stack).

59. Storm Water Drain - A storm water drain (or sewer) is a drain used for conveying rain water, surface water, sub-surface water, condensate, cooling water or other non-potable water, not discharged from any plumbing fixture waste.

60. Structure- A structure is a building, house, bridge, any variation of a house, such as an apartment, hotel, office building, church, store, shed, tent, or viewing stand.

61. Sub-House Drain - Sub-house drain is that portion of a drainage system which cannot drain by gravity into the sewer.

62. System - When the word "system" is used in this Article, same shall refer to the "plumbing system" as defined herein.

63. Trap - A trap is a fitting or device constructed to prevent the passage of air or gas through a pipe without materially affecting the flow of sewage or waste water through it.

64. Trap Seal- The trap seal is the vertical distance between the crown weir and the dip of the trap.

65. Vent Pipe - A vent pipe is any pipe conveying air provided to ventilate a building drainage system and to prevent trap siphonage or other disturbance to trap seals.

66. Vent Stack - A vent stack, sometimes called a main vent, is a vertical vent pipe installed primarily for the purpose of providing circulation of air to or from any part of the house drainage system (See Stack Vent).

67. Waste Pipe and Special Wastes - A waste pipe is any pipe which receives the discharge of any fixture, except water closets or similar fixtures, and conveys the same to the house drain, soil or waste stack. When such pipe does not connect direct to the house drain or soil stack, it is termed a special waste.

68. Water Distribution Pipes - The water distribution pipes are those which convey water from the service pipe to the plumbing, fixture or to any part of the premises.

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69. Water Mains - A water main (street) is a general water supply pipe for public community use.

70. Water Service Pipe - The water service pipe is the pipe from the water main to the building served.

71. Water Supply System - A water supply system consists of the water service pipe, the water distributing pipes, and the necessary connecting pipes, fittings and control valves.

72. Wet Vent - A wet vent is a vent which receives the discharge from wastes other than water closets.

Sec. 5-432 - GENERAL REGULATIONS

(a) - WORKMANSHIP

Workmanship shall be of such character as to fully secure the results sought in all the sections of this Chapter.

In providing right-of-way for all plumbing waste vent, water or gas piping, care shall be taken to confine all holes or notching to the minimum required for the pipe size. All plumbing work shall be installed in accordance with this Code.

(b) - GRADES OF HORIZONTAL PIPING

All horizontal piping shall be run in practical alignment and shall be supported or anchored to effectively prevent sagging at intervals not to exceed 5 ft. All stacks shall be supported at their bases, and all pipes shall be rigidly secured. The minimum grades for pipe 4" or less in diameter shall be 1/4" per foot, and for sizes greater than 4", the minimum shall be 1/8" per foot.

Piping shall be installed without undue stresses or strains and provisions made for expansion, contraction, and structural settlement. No structural member shall be weakened beyond a safe limit by cutting, notching or otherwise, unless provision is made for carrying the structural load.

(c) - CHANGE IN DIRECTION

All changes in direction shall be made by the appropriate use of 45 degree Y's, half Y's, long sweep quarter bends, sixth, eighth, or sixteenth bends, except that single sanitary T's may be used on vertical stacks, and short quarter bends may be used in soil and waste lines where the change in direction of flow is from the

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horizontal to the vertical. T's and crosses may be used in vent pipes and on water distributing pipes.

(d) - PROHIBITED FITTINGS

No low side or heel outlet quarter bend shall be used on horizontal waste lines except when used as wet vents. Double hub fittings shall not be used on waste lines. The drilling and tapping of house drains, waste or vent pipes, and the use of saddle hubs and bands are prohibited. Any fitting or connection which has an enlargement, chamber, or recess with a ledge, shoulder or reduction of the pipe area, that offers an obstruction to flow through the drain is prohibited.

(e) - PROHIBITED CONNECTIONS

No fixture, fitting, device or construction shall be installed which may provide a backflow connection between a distributing system of water for drinking and domestic purposes and a drainage system, soil or waste pipe, so as to permit or make possible the backflow of sewage or waste into the water supply system.

No interconnection or cross-connection shall be made between a water supply system carrying water meeting accepted standards of purity, and any other water supply system. No person shall directly or indirectly connect any open gutter, rain water leader, or cesspool into any sewer.

(f) - DEAD ENDS

In the installation of any drainage system, dead ends shall be prohibited. Cleanouts shall not be considered dead ends, but unwashed and unvented connections to cleanouts shall be kept as short as possible.

(g) - PROTECTION OF MATERIAL

All pipes passing under or through walls shall be protected from breakage with a sleeve one inch larger than the pipe used. All pipes through or under concrete or other corrosive materials shall be protected against external corrosion.

(h) - PROTECTION OF ELECTRICAL MACHINERY

Any drain, line leader or water line likely to sweat and located over electrical machines, pumps, control or switch boards shall be covered with anti-sweat covering.

(i) - PROTECTION OF WATER TANKS

Drainage piping shall not pass directly over water supply tanks or reservoirs unless such tanks or reservoirs are covered and amply protected.

Sec. 5-433 - QUALITY AND WEIGHTS OF MATERIALS

(a) - QUALITY

All materials used in any drainage or plumbing system, or part thereof, shall be free from defects.

Drainage and vent piping within structures shall be of extra heavy cast iron, lead according to Sec. 5-433 (g), galvanized wrought iron, galvanized steel, brass or type "L" or heavier hard copper of required size and wall thickness, singly or in combination. All lead bends and lead traps shall be extra heavy in weight. The maximum unsupported developed length in which lead pipe may be used shall be 1- $\frac{1}{2}$ ft. but underground, water service may be of lead. All cast iron soil pipe installed below grade shall be coated and when installed above grade may be coated or uncoated. The use of galvanized drainage pipe and copper pipe below grade is prohibited.

Vents within structure shall be extra heavy cast iron soil pipe and fittings or galvanized steel, galvanized wrought iron pipe, brass or copper. When galvanized pipe is used for vents galvanized cast iron, or galvanized malleable type fittings shall be used. No galvanized or copper vents shall be installed below ground.

(b) - LABEL: WEIGHT OF SOIL PIPE

Each length of pipe, fitting, trap, fixture and device used in a plumbing or drainage system shall be stamped or indelibly marked with the weight or quality thereof and the maker's mark or name. The weight of cast iron soil pipe shall not be more than 5% less, for a regular single-hub laying length of 5ft.(plus hub) than the following table, and fittings shall correspond thereto in wall thickness:

STANDARD WEIGHT CAST IRON PIPE			
INCHES	POUNDS	INCHES	POUNDS
2	20	5	52
3	30	6	65
4	40	8	100

EXTRA HEAVY CAST IRON PIPE			
INCHES	POUNDS	INCHES	POUNDS
2	25	5	75
3	45	6	95
4	60	8	150

All cast iron soil pipe and fittings shall conform to Commercial Standard CS 188-59.

(c) - WROUGHT-IRON PIPE

All wrought-iron pipe shall conform to the A.S.T.M. "Standard Specifications for Welded Wrought-Iron Pipe" (A72-59T), and shall be galvanized.

(d) - MILD STEEL PIPE

All steel pipe shall conform to the A.S.T.M. "Standard Specifications for Black and Hot-dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses" (A120-57T), and shall be galvanized.

(e) - BRASS AND COPPER PIPE

Brass and copper pipe shall conform respectively to the Standard Specifications of A.S.T.M. for "Seamless Red Brass Pipe, Standard Sizes," and for "Seamless Copper Pipe, Standard Sizes" (Numbers B43-58 and B42-58, respectively.)

(f) - COPPER TUBING

Copper tubing for water supply distribution systems shall conform to the A.S.T.M. "Standard Specification for Seamless Copper Water Tube" (B88-58). Copper tubing used for underground water supply or service shall be type K or L. Type M. copper is permitted to be used above ground only.

(g) - LEAD PIPE, DIAMETER, WEIGHTS (WHEN PERMITTED)

All lead pipe shall be of best quality of drawn pipe, of not less weight per linear foot than shown below and in accordance with Commercial Standards CS95-41 or Lead Industries Association Standards:

Lead, Soil, Waste, Vent or Flush Pipes:

INTERNAL DIAMETER INCHES	WEIGHTS PER FOOT	
	LBS.	OZ.
1	2	---
1 1/4	2	8
1 1/2	3	8
2	4	12
3	6	---
4	8	---

Lead traps and bends shall be in accordance with Commercial Standards CS96-41 or Lead Industries Association Standards, and shall have a wall thickness of not less than 1/8".

Calking lead shall be in accordance with Commercial Standards CS94-41 or Lead Industries Association Standards.

(h) - CLAY SEWER PIPE FOR PRIVATE SEWER MAINS

Shall conform to A.S.T.M. Standards C13-57T for standard strength and C200-59T for extra strength.

All private sewer mains shall be installed according to City Engineering Department specifications.

(i) - CONCRETE SEWER PIPE FOR PRIVATE SEWER MAINS.

If reinforced, shall meet A.S.T.M. Standard No. C76-59T and if non-reinforced, shall meet A.S.T.M. Standard No. C14-59.

(j) - COPPER SEWER PIPE AND FITTINGS

As a minimum requirement copper sewer pipe and fittings shall be at least type "L".

(k) - ASBESTOS CEMENT SEWER PIPE FOR PRIVATE SEWER MAINS.

Shall conform to A.S.T.M. Standard O428-59T, or Federal Specifications SS-P331 - (a) with amendments.

(l) - ACID WASTES AND VENTS

Wastes, vent pipe and fittings shall be of an acid proof material or as approved by the Administrative Authority. In no case shall corrosive liquids, spent acids or other harmful chemicals which might destroy or injure a drain, sewer, soil or waste pipe, or which might create noxious or toxic fumes, discharge into the plumbing system without being thoroughly

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diluted or neutralized by passing through a properly constructed and acceptable dilution or neutralizing device. Such device shall be automatically provided with a sufficient intake of diluting water or a neutralizing medium, so as to make its contents non-injurious before being discharged into the soil or sewerage system.

(m) - SHEET LEAD

Sheet lead shall weigh not less than four (4) pounds per square foot.

(n) - SHEET COPPER OR BRASS

Sheet copper or brass shall be not lighter than No. 17 B and S gauge, except that for local and interior ventilating pipe it shall be not lighter than 23B and S gauge.

(o) - THREADED FITTINGS

Plain screwed fittings for use with wrought-iron or steel pipe vents may be of galvanized cast iron or of galvanized malleable iron, of standard weights and dimensions.

Screwed drainage fittings for use on soil, waste or leaders shall be of the recessed drainage type, with smooth interior waterway, and with threads tapped out of solid metal.

Screwed fittings for brass or copper pipe shall be cast red brass, malleable pattern, for water supply or vents, and recessed drainage pattern for soil or waste.

All screwed fittings on water supply pipes shall be either brass or malleable and beaded.

All malleable iron fittings shall be galvanized.

American standard tapered pipe thread shall be used on all threaded fittings.

(p) - FITTINGS

Fittings for copper tubing, if sweated type or flared joint type, shall conform to all of the patterns of good practice. They shall be without defects.

(q) - CALKING FERRULES WHEN PERMITTED

Calking ferrules shall be of the best quality and red cast brass, with weights and dimensions in accordance with the following table:

PIPE SIZE (INCHES)	ACTUAL INSIDE DIAMETER INCHES	LENGTH INCHES	WEIGHT LBS. OZS.
2	2 1/4	4 1/2	1
3	3 1/4	4 1/2	1 12
4	4 1/4	4 1/2	2 8

(r) - SOLDERING NIPPLES AND BUSHINGS WHEN PERMITTED

Soldering nipples shall be of red brass or copper pipe, iron pipe size, or of heavy, cast red brass not less than following weights:

DIAMETER INCHES	WEIGHTS OZS.	DIAMETER INCHES	WEIGHT LBS. OZS.
1 1/4	6	2 1/2	1 6
1 1/2	8	3	2 0
2	14	4	3 8

Soldering bushings shall be of heavy, cast red brass, with iron pipe threads.

(s) - FLOOR FLANGES FOR WATER CLOSETS

Brass floor flanges for water closets shall be not less than 3/16 of an inch thick.

Sec. 5-434 - JOINTS AND CONNECTIONS

(a) - TIGHTNESS OF PLUMBING JOINTS AND CONNECTIONS

Joints and connections shall be made permanently gas and watertight.

(b) - CALKED JOINTS

Joints for cast iron bell and spigot soil pipe for drainage and vent pipe shall be firmly packed with picked oakum or hemp and secured with molten lead, at least 1" deep. Lead shall be run in one pouring and calked tight. Lead joints for water supply piping shall conform to the regulations of Section 9a of the American Water Works Association's Specifications No. C600-54T.

(c) - SCREWED JOINTS

Screw joints shall be tapered, with threads sharp and true, and burrs formed in cutting shall be completely removed by reaming before installation.

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(d) - WIPED SOLDER JOINTS WHEN PERMITTED

Joints in lead pipes or between lead pipe and brass or copper pipes, ferrules, soldering nipples, bushings or traps, in all cases, shall be full wiped joints, with an exposed surface of the solder on each side of the joint of at least 3/4", and a minimum thickness at the thickest part of the joint of 3/8". Overcast or cup joints are prohibited.

(e) - COPPER TUBING JOINTS

Copper tubing joints shall be made by cleaning tubing and fitting, fitting sleeve, applying any suitable flux, and bringing to a heat that will produce a full and complete capillary sweated joint on the application of the proper grade of solder, or flanged fittings where permitted.

(f) - JOINTS OF LEAD, TO CAST IRON, STEEL OR WROUGHT IRON

Joints of lead to cast iron, steel or wrought iron shall be made by means of calking ferrule, soldering nipple or bushing.

(g) - CLOSET PEDESTAL URINAL, OR ANY FIXTURE REQUIRING 4" WASTE CONNECTIONS

In setting closet bowls, pedestal urinals, or any fixture requiring a 4" connection, a brass floor flange and an approved setting compound, wax or graphite gasket shall be used to make a tight joint.

(h) - SLIP JOINTS AND UNIONS

Slip joints or unions shall be permitted in drainage piping only in trap seals or on the inlet side of the trap, and must not be used in vent piping. They may be used in exposed water piping, in a plumbing fixture supply.

(i) - INCREASERS AND REDUCERS

Where different sizes of drainage pipe, or pipes and fittings, are to be connected, proper sizes of increasers and reducers shall be employed. Reduction of size of drain pipes in the direction of flow is prohibited.

Where different sizes of water pipes, or pipes and fittings, are to be connected, proper sizes of fittings shall be used.

(j) - ROOF FLASHINGS

Joints where pipes pass through roofs shall be made water-tight by use of copper flashing, or sheet lead.

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(k) - EXPANSION AND CONTRACTION IN HORIZONTAL AND VERTICAL HOT WATER LINES

Adequate means shall be provided for expansion and contraction of all hot water supply pipes when necessary.

Sec. 5-435 - TRAPS AND CLEANOUTS

(a) - TRAPS REQUIRED FOR EACH FIXTURE

Every fixture shall be trapped by a water-sealed trap placed as near to the fixture as possible. No fixture shall be double trapped.

(b) - PROTECTION FROM SIPHONAGE AND BACK PRESSURE

Traps shall be protected from siphonage and back pressure and for this purpose the waste line leading from them shall be vented if it is farther than $3\frac{1}{2}$ ft. from sewer side of trap to vent pipe to which it connects. On a 3" or 4" vent serving a double bathroom on the same floor, but below any branch vent, four minor fixtures may be connected if within the required distance.

(c) - ANTISIPHONAGE TRAPS

What is known as an antisiphon trap shall only be permitted in isolated cases and shall be a type approved by Administrative Authority.

(d) - TRAPS AND CLEANOUTS

Traps shall be self-cleaning and water-sealed and shall have a scouring action. Traps for bathtubs, lavatories, sinks and other similar fixtures, shall either be integral or shall be of lead, brass, cast iron or galvanized malleable iron. Traps shall have a full size bore, smooth interior waterway, such that a solid ball $1/4$ " smaller in diameter than the specified diameter of the trap will pass freely from the outlet and entirely through the seal of the trap. The minimum diameter of traps for fixtures shall be that given for the soil or waste branches (except that in the case of water closets the required minimum shall be $2\frac{1}{8}$ "). In cases other than fixtures, the size of the trap shall be the same as the discharge pipe connection thereto. Running traps and "S" traps are prohibited.

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(e) - WATER SEAL

All traps shall have a water seal of at least 2".

(f) - SETTING AND PROTECTION OF TRAPS

Traps shall be set true with respect to their water seals and protected from frost and evaporation and other loss of seal.

(g) - BACK-WATER VALVES

Connection of a building drainage system to the public sewer is at the owner's risk. Where plumbing fixtures are set at a level only slightly higher than the public sewer, or for any other reason, there is a possibility of a backflow of sewage, the owner may, at his discretion install a back-water valve as probable protection.

(h) - GREASE INTERCEPTORS OR TRAPS

In commercial buildings, a grease interceptor shall be installed in waste lines leading from sinks, drains, or other fixtures in the following establishments when in the opinion of the Administrative Authority, a hazard exists:
restaurants, hotel kitchens or bars, factory cafeterias or restaurants, clubs or other establishments where grease can be introduced into the drainage system in quantities that can effect line stoppage or hinder sewage disposal.

(i) - CLEANOUTS FOR WASTE STACKS AND SEWERS

At the foot of every vertical waste stack exceeding 12 ft. in height, at changes in direction of flow that would not permit free passage of sewer tapes, and in straight runs of sewer at not more than 70 ft. intervals for 3" and larger, and 30 ft. for 2" and smaller, approved cleanouts shall be installed. Y fittings shall be used for insertion of cleanout connections into sewers. The plumber is required to provide and install cleanout within 10 ft. of the property line. Cleanouts on all drainage waste lines shall be a brass plug.

Where horizontal waste arms are used on kitchen sinks, there is to be installed above the floor or under the floor where it is accessible, a test tee with brass plug, this is for the purpose of unstopping the vertical and horizontal waste line.

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(j) - CLEANOUT FERRULES

The body of cleanout ferrules shall be made so as to permit the insertion of a test plug through the ferrule, and shall be made gas and watertight without the aid of any flux or compound.

Cleanouts used on extra heavy cast iron soil pipe, the ferrule shall be of extra heavy cast iron, and 4" long, with brass plug and the nut shall be 5/8" high. Cleanouts used on standard weight or service weight pipe shall be known as standard cleanouts.

(k) - ACCESSIBILITY REQUIRED

All traps, cleanouts and back-water valves shall be accessible. There shall be a minimum of 3 ft. clearance between cleanout and any obstruction that would interfere with proper cleaning.

Sec. 5-436 - WATER SUPPLY AND DISTRIBUTION AND QUALITY OF WATER SUPPLY(a) - POTABLE WATER

The quality of the water supply for all premises intended for human occupancy shall conform to the accepted standards of purity for potable water, as established by the United States Public Health Service.

(b) - BACK-FLOW

Every supply outlet or connection to fixtures or appliances shall be protected from back-flow by means of an approved air gap, or back-flow preventer between the control valve of the outlet and the fixture or appliance. Back-flow preventers and vacuum breaker devices shall be of approved design.

No plumbing fixture, device or construction shall be installed which will provide a cross-connection between a distributing system of water for drinking and domestic purposes and a drainage system, soil, air or waste pipe so as to permit or make possible the back-flow of sewage or waste into the water supply system.

Approved back-flow preventers or vacuum breakers must be used with any supply fixture, the outlet end of which may at times be submerged, such as hose and spray, direct flush valve and under-rim water supply connections to a plumbing fixture or receptacle

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in which the surface of the water is exposed at any time to atmospheric pressure. Every flushometer valve shall be equipped with an approved vacuum breaker, where cross connections are possible.

(c) - WATER PIPES: MINIMUM SIZE OF WATER SERVICE PIPES

The minimum size of water service pipes from the curb to the building shall be of sufficient size to furnish an adequate flow of water to meet the requirements of the building at peak demand and in no case shall be less than 3/4", and must extend full size to each residential bathroom and water heater with 1/2" branches to fixtures. If flushometers or other devices requiring a high rate of water flow are used, the water-service pipe shall be designed to supply this flow. Where galvanized lines pass through concrete floors or walls, protective sleeves or covering must be used.

(d) - HOT WATER SUPPLY

Hot water supply to one (1) bath shall be a minimum size of 1/2". All water pipe must be reamed. Boiler tubes shall not be less than 3/4" and shall be brass or copper. All hot water heaters shall have a separate control valve on the cold water supply.

(e) - SCHEDULE OF MINIMUM WATER PIPE SIZES

Schedule of minimum water pipe sizes in new work, where flush valves are not used:

	<u>GALVANIZED</u>
One to eight fixtures	3/4 inch
Nine to fourteen fixtures	1 inch
Fifteen to twenty-five fixtures	1 1/4 inches
Twenty-six to thirty-five fixtures	1 1/2 inches
Thirty-six to fifty-five fixtures	2 inches
	<u>COPPER</u>
One to three fixtures	1/2 inch
Four to twelve fixtures	3/4 inch
Twelve to twenty fixtures	1 inch
Twenty to thirty fixtures	1 1/4 inches
Thirty to fifty fixtures	1 1/2 inches
Over fifty fixtures	2 inches

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(f) - VALVE ON INSIDE

On the inside of the building at an approved location, there shall be installed a valve of approved design, which shall be of the same size as the main supply pipe and shall be equipped with a drain cock. Combination stop and waste valves and cocks shall not be installed in an underground service pipe.

(g) - COMPRESSION STOP AND WASTE VALVES IN BUILDING

The main cut-off valve on the water supply must be accessible inside of the house when there is no basement. There shall be a separate cut-off for each house, apartment or building.

(h) - FIXTURES, STOPS AND SUPPLIES

All fixtures, except bathtubs and showers, shall be provided with stops on supplies to same. Floor supplies are prohibited on all new work and shall be avoided where possible on renovations.

(i) - HOT WATER PIPES BETWEEN HEATER AND STORAGE TANK

Hot water pipes between heater and storage tank should preferably be of copper or brass.

(j) - OVER RIM TRIMMINGS

Water shall be supplied to fixtures by over rim trimmings, and closet flush valves shall be equipped with vacuum breaker.

(k) - HEATER, STORAGE TANK AND RELIEF VALVE

The diameter of the top of a heater shall not be larger than the body of the heater and the heater shall be connected to not less than a thirty (30) gallon extra heavy storage tank, and shall be equipped with automatic reseating type temperature and pressure relief valve. The above relief valve shall be installed in accordance with manufacturers recommendation and the discharge shall be piped to a safe point of disposal. Temperature and pressure relief valve shall comply with American Standard Z-21-22-1958, and shall be so labeled. Listing by the American Gas Association will be accepted as evidence of compliance with the above requirements provided the listing is clearly indicated. Minimum size 3/4" inlet and outlet is required.

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(l) - RETURN PIPES FROM BOILER TO HEATER

Return pipes from boiler to heater shall be connected to the lower side tapping on the boiler.

(m) - GAS, OIL AND ELECTRIC WATER HEATERS

Gas heaters shall be installed in accordance with the regulations suggested by the American Gas Association. All gas and oil water heaters shall be vented. Automatic reseating type temperature and pressure relief valves are required on all oil, electric, gas heaters, storage or pressure heating vessels. Where required by the State Boiler Inspection Law, Rules and Regulations, temperature and/or pressure relief valves of a type approved by the American Society of Mechanical Engineers shall be used. All relief valves shall comply with Sec. 5-436 (k).

(n) - AIR CHAMBERS

Water supply piping systems shall be provided with air chambers or shock absorbers when necessary.

Sec. 5-437 - PLUMBING FIXTURES

(a) - SECONDHAND FIXTURES

Secondhand fixtures, and fixtures previously used in another building or location may not be installed unless they have been thoroughly cleansed and approved by the Administrative Authority.

(b) - HOW INSTALLED

All plumbing fixtures shall be installed free and open in a manner to afford access for cleaning. Where practical, all pipes from fixtures shall be run to the wall.

(c) - BUILT-IN BATHTUBS

Built-in bathtubs and other built-in fixtures which have concealed union, slip, or gasket water or waste connections should be so located that a suitable access door can be provided in the construction to permit repairs and replacements.

(d) - WATER CLOSETS

All water closet bowls shall be of wash down, siphon jet or siphon action type and shall be of vitreous china and shall be supplied with water from tanks or other approved flushing devices. The use of frost proof, wash out, range and hopper closets is prohibited.

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All water closets installed in Class two and three buildings as described in Sec. 5-439 (e) shall be elongated type closet bowl with open front seat.

(e) - BATHTUBS

All bathtubs, placed or replaced, shall be of approved material and design.

(f) - LAVATORIES AND DRINKING FOUNTAINS

Lavatories shall be of non-absorbent material such as vitreous china, enamelled steel, stainless steel or enamelled iron.

All drinking fountains shall be constructed of same materials as lavatories or its equal. The bubbler shall be located so as to be above the overflow rim of the drinking fountain and shall be protected with a shield.

(g) - URINALS

Urinals shall be of vitreous china only and shall be either of the pedestal or blow out or wall hung types with integral trap and suitable flushing devices. Wherever urinals are installed in public toilets, a 2" non-corrosive type floor drain shall be installed in the local area of same. Trough urinals may be used only on such premises as stadiums, parks, prisons, or buildings of occasional occupancy. All trough urinals shall be iron enamel acid resistance with proper flushing devices.

(h) - WOODEN SINKS

Wooden sinks or wash trays shall not be connected to the plumbing system, except that wooden sinks or vats may be used by photographers or engravers for their work wherein strong acids are used.

(i) - FLOOR DRAINS AND AREA DRAINS

Basement and area drains shall be cast iron painted combined floor drain double wall, not less than four inch deep water seal trap, with cleanout flush with floor, and brass cleanout plug size to be same as outlet of trap. This cleanout may be considered in spacing the distance between cleanouts, size of floor drain to be 2, 3, or 4 inch.

This type of floor drain shall be used for equipment requiring indirect waste or drain connection. Where branch waste lines serve above type of drain and is over 20 feet from ventilated line, the end of each branch waste line shall be vented as follows: 4" branch waste line, 2" vent; 2" and 3" branch waste line, 1 - 1/2" vent.

Floor drains above basement may be two, three or four inch case iron P-trap with cast iron, brass or chrome adjustable strainer, drainage flange with weep holes, spigot outlet to trap. Vent to be within 3 ft. 6" of sewer side of trap seal.

(j) - LEAD PANS FOR SHOWER STALL AND RECEPTACLE

Shower stall installation above basement, other than those equipped with an approved receptacle, shall have installed floor of shower stall, a pan constructed of sheet lead weighing not less than four pounds per square foot. Lead pan to be painted with asphalt paint, and turn up on wall not less than 6" above finished floor.

(k) - FIXTURE OVERFLOW

The overflow pipe from a fixture shall be connected on the house or inlet side of the trap and be so arranged that it may be readily and effectively cleaned.

(l) - NUMBER OF TOILET FIXTURES REQUIRED AND BATHING FACILITIES

Every office building, school, store, warehouse, manufacturing establishment, or other structure, where workmen or workwomen are or will be employed, shall be provided with at least one (1) water closet, and if both sexes are employed, at least two (2) water closets.

Water closets shall be provided for each sex according to the following table:

<u>MINIMUM FACILITIES</u>		
<u>NO. OF PERSONS</u>	<u>CLOSETS</u>	<u>RATIO</u>
1-15	1	1 for 15
16-35	2	1 for 17 1/2
36-55	3	1 for 18 1/3
56-80	4	1 for 20
81-110	5	1 for 22
111-150	6	1 for 25
151-190	7	1 for 27 1/7

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and thereafter at the rate of one closet for every thirty (30) persons (except that in schools designed for minimum occupancy of 400 pupils, at least one (1) toilet fixture shall be provided for each forty (40) pupils and in toilets for boys at least 1/3 of the fixtures shall be water closets.)

The number of water closets to be provided for each sex shall in every case be based upon the maximum number of persons of that sex employed at any one time on the given floor, or floors, or in the structure for which such closets are provided.

Whenever a urinal is supplied, one closet less than the required number may be provided for males when more than thirty-five (35) are employed (except that the number of closets in such cases shall be at least 2/3 of the number given in the above table).

Separate toilet facilities shall be installed for each dwelling unit, and each apartment, consisting of, water closet, lavatory, bathtub or shower, and kitchen sink and adequate facilities for furnishing hot water to each required bathtub or shower, lavatory and kitchen sink. Hotels and rooming houses shall be provided with at least one (1) water closet for each four (4) sleeping rooms, and dormitory rooms shall have at least one (1) water closet to each 1,000 square feet of area thereof. Where there are water closets for the two sexes, access thereto must be suitably separated.

Places of public or semi-public assembly accommodating large numbers of persons shall be provided with a sufficient number of water closets and urinals and lavatories described as minimum facilities in Table 7.21.2 of the National Plumbing Code in 1955 published by the American Society of Mechanical Engineers. Such water closets shall be in an accessible location and provided with signs plainly indicating their purpose.

There shall be at least one (1) lavatory wherever water closets are required.

(m) - LOCATION OF TOILET FIXTURES

Water closets shall be readily accessible to the persons using them.

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Drinking fountains or a bubbler shall not be installed in public toilets.

Sec. 5-438 - HANGERS AND SUPPORTS FOR PLUMBING PIPING

(a) - PIPE AND FIXTURE SUPPORTERS

All horizontal and vertical piping shall be secured or supported at sufficiently close intervals to keep it in alignment and prevent sagging.

Cast-iron soil and waste pipes shall be supported when above ground on strong brick piers not over 5 ft apart, or held in place by strap iron hangers of not less than 16 gauge and 7/8" in width not over 5 ft. apart, or over 30" long, and vertical pipes shall be supported at base and at every story height, and not to exceed every 20 ft. Connections of wall hangers, pipe supports, or fixture settings with brick, stone or concrete backing, shall be made with expansion bolts or through bolts without the use of wooden plugs. In hollow terra cotta block partitions, toggle or through bolts shall be used, and in solid plaster or gypsum block partitions through bolts with large washers shall be used. In wood stud partitions blocking shall be built in before the plastering is done for fastening the fixture supports. All water pipe shall be securely fastened by straps or hangers placed not over 10 ft. apart.

(b) - LOCATION OF FIXTURES

No plumbing fixtures shall be located in any room or apartment which is not provided with adequate ventilation, either natural or artificial.

(c) - VENTILATION PIPE, HOW CONNECTED

Ventilation pipes from toilet rooms shall be installed in compliance with Section 501 of the North Carolina Building Code.

Sec. 5-439 - DRAINAGE AND VENTING OF PLUMBING SYSTEMS

(a) - PROTECTION OF PIPES AGAINST BREAKAGE AND CORROSION

Pipes passing under or through walls shall be protected from breakage. Pipes passing through or under cinder concrete or other corrosive material shall be protected against external corrosion.

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(b) - PROHIBITED PLUMBING CONNECTIONS

The use of wastes or vents for rain leaders, or the use of rain leaders as vents or waste pipes is forbidden.

(c) - BUILDING DRAINS AND SEWERS

(1) ABOVE -GROUND PIPING WITHIN BUILDING: Piping for a drainage system within a building or structure shall be of extra heavy cast iron, galvanized wrought iron, galvanized steel, lead, brass or copper pipe or copper tube type K or L. All copper pipe or copper tube offered for sale or installed within the jurisdiction of this Code shall have standard colors for identification marked thereon in accordance with the Standard Colors as promulgated by the Copper and Brass Research Association Data - 76.

(2) UNDERGROUND PIPING WITHIN BUILDING. All drains within buildings, when underground, shall be cast extra heavy iron soil pipe.

Each residence or building shall have a separate sewer connection to sewer main. The above house or building sewer shall be service weight cast iron pipe, and is to be installed within five feet of that portion of a building or structure nearest the sewer main, and is to terminate at the property line.

(d) - BUILDING DRAINS FOR REAR BUILDINGS

When a structure stands in the rear of another on the same interior lot, and a private sewer is unavailable or cannot be constructed, the building drain of the front structure may be extended to the rear, and the whole considered as one building drain.

(e) - FIXTURE UNITS

The following table shall be employed to determine the minimum diameters of fixture traps, the minimum diameters of waste pipes from single fixtures, and the total fixture unit valves to be assigned to fixtures.

In the classification of plumbing installations, Class I (private) shall apply to fixtures in residences and apartments and to fixtures in private bathrooms of hotels and similar installations where the fixtures are intended for the use of a family or an individual.

Class 2 (semi-private) shall apply to fixtures in office buildings, factories, dormitories and similar installations where the fixtures are intended for the use of the occupants of the building.

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Class 3 (public) shall apply to fixtures in general toilet rooms of schools, gymnasiums, hotels, railroad stations, public comfort stations and other installations (whether paid or free) where a number of fixtures are installed so that their use is similarly unrestricted.

Fixture unit ratings for all fixtures given a single rating shall apply to those fixtures in all classes of installations.

FIXTURE UNITS PER FIXTURE OR GROUP

	MINIMUM NOMINAL TRAP DIAMETER (INCHES)	MINIMUM NOMINAL DIAMETER INDIVIDUAL DRAIN (INCHES)	FIXTURE UNITS
1 lavatory or washbasin, class 1	1 1/4	1 1/2	1
1 lavatory or washbasin, class 2 or 3	1 1/2	1 1/2	2
1 water closet, class 1 same with flush valve	2 1/8	4	3 8
1 water closet, pedestal & Female Urinals class 2 same with flush valve	2 1/8	4	5 8
1 water closet, pedestal & Female Urinals class 3	2 1/8	4	6 8
1 bathtub, class 1	1 1/2	1 1/2	2
1 bathtub, class 2 or 3	2	2	4
1 shower stall, shower head only, class 1	2	2	4
1 shower stall, multiple spray class 1	2	2	4
1 shower stall, shower head only, class 2 or 3	2	2	4
1 shower stall, multiple spray, class 2 or 3 Gang shower for each shower head	3	3	6 5
1 urinal, wall hung, integral trap	2	2	4
1 bathroom group consisting of 1 lavatory, 1 water closet, and 1 bathtub with or without overhead shower head or consisting of 1 lavatory, 1 water closet, 1 shower stall, class 1 (tank type water closet)			6
Above with flush valve water closet			8

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1 bathroom group consisting of 1 lavatory, 1 water closet, 1 bathtub and 1 shower stall in same bathroom, class 1 (tank type water closet)			8
Above with flush valve water closet			10
1 sink, residence or apartment kitchen sink, class 1	1 1/2	2	2
1 sink, butler's or pantry, class 1	1 1/4	1 1/2	1
1 sink, hotel or restaurant, pot sink	2	3	8
1 sink, hotel or restaurant, vegetable sink	2	2	6
1 sink, hotel, or restaurant, glass sink	2	2	3
1 sink, hotel or restaurant, silver sink	2	2	3
1 sink, lunch counter bar sink	2	2	5
1 sink, soda fountain bar sink	2	2	1.5
1 sink, siphon jet service sink, flush rim or mop	3	3	6
1 sink, ordinary service sink	2	2	3
1 sink, bed pan sink or bed pan washer	3	3	6
1 sink, lavatory, surgeon's or medical sink	2	2	1.5
1 sterilizer, instrument, utensil or water	1 1/2	1 1/2	0.5
1 sterilizer, bed pan	3	3	6
1 laundry tray	1 1/2	2	2
1 washing machine	2	2	2
1 combination fixture	2	2	3
1 foot bath or sitz bath	2	2	2
1 infant's or baby's slab bath	2	2	0.5
1 bidet	1 1/2	2	3
1 drinking fountain	1 1/4	1 1/2	0.5
1 cuspidor, fountain or dental	1 1/4	1 1/2	0.5
1 individual refrigerator drain	1	1	0.25
1 floor drain, ordinary	2	2	1
1 floor drain, receiving regular or intermittent discharges from fix- tures shall be counted as the total of the fixtures drained in it.			

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1 floor drain, receiving, overflow from tanks or discharges from unrated fixtures shall be rated on the estimated maximum flow, for each gallon per minute.	3
1 sewage ejector, for each 25 gallons per minute discharge capacity	50

(f) - SOIL AND WASTE STACKS

Soil and waste stacks shall be as direct as possible and free from sharp angles and turns. The required size of soil and waste stacks shall be independently determined by the fixture units connected to the stack, and the total length in accordance with the table at the end of the next section.

(g) - COMMON SOIL OR WASTE AND VENTS

Where bathrooms or water closets or other fixtures are located on opposite sides of a wall or partition, or directly adjacent to each other within the prescribed distance, such fixtures may have a common soil or waste pipe and a common vent. All closet back vents shall be taken from the branch between the fixture and the soil stack.

SOIL AND WASTE STACKS

DIAMETER OF STACKS (INCHES)	MAXIMUM NUMBER OF FIXTURE UNITS PERMITTED	MAXIMUM NUMBER OF WATER CLOSETS PERMITTED	MAXIMUM DEVELOPED LENGTH
2	14	---	75 feet
2 1/2	36	---	100 feet
3	90	---	150 feet
4	300	33	300 feet
5	700	80	500 feet
6	1,050	120	Unlimited
8	2,000	225	Unlimited
10	3,500	400	Unlimited

(h) - CLEANOUTS AND TEST T's

Test T's are required at a suitable location on the sink waste pipe. Where sink line is 10' or less in length, test T's only will be required.

(i) - SINK WASTE PIPES SEPARATELY CONNECTED

Sink waste pipes shall be separately connected to the soil stack or drain.

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Each washing machine shall have a separate 2" P-trap not over 3'6" from a vent. All traps shall be at the location of the washing machine.

(j) - SIZE OF BUILDING SEWERS, BUILDING DRAINS AND HORIZONTAL BRANCHES

The required size of a sanitary building sewer, sanitary building drain or branch of the sanitary building drain, shall be determined in accordance with the table following this section. No water closet shall discharge into a drain less than 4".

DIAMETER OF PIPE (INCHES)	1/4 INCH FALL PER FOOT	MAXIMUM NO. OF FIXTURE UNITS
2		6
2-1/2		15
3		32
4		96
5		234
6		440
8		1,150
10		2,500
12		4,200
15		8,500

(k) - VENT PIPE GRADES

Vent and branch vent pipes shall be free from drops or sags or so graded and connected as to drip back to a soil or waste pipe by gravity. Where vent pipes cannot be a horizontal soil or waste pipe, the vent branch shall be taken off above the center line of the pipe and the vent pipe rise vertically or at an angle of 45° to the vertical before offsetting horizontally or connecting to the branch. Vent pipes of all types when installed horizontally shall be at least 6" above the flood level rim of the highest fixture served by the vents, so as to prevent the use of vent pipes as waste pipes.

(l) - REQUIRED SIZE OF VENTS

The required size of vents shall be determined on the basis of the size of the soil or waste stack, the number of fixture units connected to the vent and the developed length of the pipe in accordance with the table in Sec. 439 (n).

Vents shall be at least 1 1/2" in diameter. The diameter of

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every vent stack shall be at least one half that of the soil or waste stack served. In determining the developed length of the vent pipes, the vent stack and horizontal branches shall be considered continuous.

All sewer main connections serving buildings of houses shall have at least one main stack, a minimum of 3" or 4" in size. A 3" main vent stack is permitted, on one story building or houses, and a maximum of 20 fixture units are permitted in the plumbing system.

(m) - CIRCUIT AND LOOP VENTS

A branch soil pipe which extends not more than 30 ft., serving not more than 10 water closets or pedestal urinals, and having the branches for the fixture laid flat and taken from Y fittings, may be vented by a circuit or loop vent.

Laterals shall not be more than 3 1/2 ft. in length. The vent shall be taken off in front of the last fixture. If more than 8 fixtures discharge into the soil pipe, a full size vent shall be taken off in the center of the battery, and connected to the horizontal vent or run through the roof. Vents shall be the same size as the soil pipe.

(n) - WET VENTS

The vent from a bathtub may be used as a waste pipe for one lavatory. The 2" vent from a water closet may be used as a waste pipe for one (1) sink, lavatory, tub or shower provided these fixtures are on the same floor and serve the same family. Where main stacks are grouped together at the top of a structure into one (1) pipe extended through the roof this combined vent shall be at least equal in area to 75 per cent of the sum of the areas of the stack connecting into it. There shall be not less than a 2" vent for each water closet.

Where wet vent system is used as described above, a maximum of 6 ft. horizontally below the fixture or fixtures if wet vents are permitted, before vent shall rise to the vertical, and not over three fixtures with a maximum of 7 fixture units are permitted on a 2" wet vent.

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The trap area for the above fixture shall not exceed 2". Only one fixture is permitted on a dead end waste arm, regardless of location.

VENT STACKS AND BRANCHES

DIAMETER OF PIPE	MAX.NO.FIXTURES UNITS PERMITTED	MAX.DEVELOPED LENGTH FT. FOR EACH SIZE
1 1/2 inches	3	25
2 "	20	50
2 1/2 "	60	100
3 "	120	150
4 "	250	250
5 "	500	300
6 "	1,250	Unlimited
8 "	2,400	Unlimited
10 "	3,000	Unlimited
12 "	5,000	Unlimited

(o) - ROOF VENT EXTENSION AND TERMINALS

Roof extensions of soil and waste stacks, or roof vents, shall be run at full size at least 1 ft. above roofs and at least 7 ft. where the roof is used for any other purpose than weather protection.

The roof terminal of any vent, soil or waste pipe, if within 10 ft. of any door, window, scuttle or airshaft, shall extend at least 3 ft. above such openings.

(p) - OFFSETS IN SOILS, WASTE AND VENT STACKS

When offsets in soil and waste stacks above the highest fixture connection and offsets in vent stacks and connections to such vent stacks to a soil or waste pipe at the bottom, or to the building drain, should be made at an angle of at least 45° to the horizontal, at the discretion of the Administration Authority.

Sec. 5-440 - REFRIGERATOR, INDUSTRIAL, SAFE AND SPECIAL WASTES

(a) - INDIRECT WASTES

The waste pipes from all refrigerators, ice boxes, rinse sinks, cooling or refrigerating coils, laundry washers, extractors,

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steam tables, egg boilers, coffee urns or similar equipment shall be indirectly connected to a water-supplied sink or receptor and the waste outlet shall terminate at least 2" above the floor rim of such sink or receptor.

The waste pipe from a refrigerator safe or receptor shall be at least 1" in diameter and, when installed as a stack with branches on separate floors, it shall have a minimum diameter of 1 1/4". Such piping shall be of brass, copper or galvanized steel or wrought iron.

(b) - INDUSTRIAL WASTES

Wastes from hospitals, chemical plants, laundries, abbatoirs or any other industrial wastes, which in the opinion of the Administrative Authority or other agency having legal jurisdiction are detrimental to the public sewers or public health, shall first be treated inside of the structure as necessary before discharging into the sewer.

Industrial waste system shall be installed according to Chapter 16, Article III of the Code of the City of Charlotte, North Carolina. This Code is under the jurisdiction of City Water Department.

(c) - OVERFLOW AND EMERGENCY DRAINS

Overflow and drain pipes from expansion tanks, filters, drip pans, cooling jackets, sprinkler systems and similar equipment and from the exhaust of a water lift shall discharge upon the roof, into an open fixture, or discharge as provided for refrigerator wastes. With the express permission of the Administrative Authority such pipes, if provided with a check valve, may be connected to a leader, if above any possible pressure line.

Direct connection between water supply pipes and the sanitary sewer system are prohibited.

Sec. 5-441 - SPECIAL CONDITIONS

(a) - DRAINAGE BELOW SEWER LEVEL

When the whole or part of the drainage system lies below the crown level of the main sewer, such parts as cannot drain by

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gravity into the sewer shall be disposed of through a system of sub-building drains and lifted by approved means into the sewer.

The piping for such systems shall be known as a "sub-building drainage system." Piping for the sub-building drainage system shall be installed in accordance with the requirements for gravity systems. The lifting equipment shall be considered the equivalent of the building sewer.

Sub-building drains shall discharge into an airtight sump or receiving tank so located as to receive the sewage by gravity. From the sump or receiving tank, the sewage shall be lifted and discharged by pumps, pneumatic ejectors or equally efficient methods automatically operated. Hydraulic ejectors are prohibited. On discharge of sewer pump there shall be installed as close to the pump as possible a sewer back water valve and all fixtures and equivalent devices shall be trapped and vented. When sub-drains do not receive the discharge of plumbing fixtures other than cellar floor drains or drips from machinery, the sump or receiving tank need not be airtight or vented.

(b) - RECEIVING TANKS

Receiving tanks (except in pneumatic systems) shall be provided with vent pipes at least 3" in diameter which may be connected to the gravity vent system. Pneumatic receiving tanks shall be provided with relief pipes at least 2" in size, the relief pipe extending independently to the roof and terminating as required for vent pipes in Sec. 5-439 (n).

(c) - CONDENSERS AND BLOW-OFF TANKS

The connection of a steam exhaust, boiler blow-off or drip pipe with the building drain is forbidden. Such pipes shall discharge directly into a condensing tank properly connected to the building sewer. In low pressure steam systems the condensing tank may be omitted but the waste connection must otherwise be as required above. Waste Water when discharge into the sewer shall be at a temperature not higher than 140°F. Where higher temperatures exist, proper cooling methods shall be provided.

Sec. 5-442 - MISCELLANEOUS

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(a) - DEAD ENDS

In the installation of any drainage system, dead ends longer than 5 ft. shall be prohibited.

Section 2. This ordinance shall become effective upon its adoption.

Approved as to form:

City Attorney

Read, approved and adopted by the City Council of the City of Charlotte, North Carolina, in meeting on the 17th day of September, 1962, the reference having been made in Minute Book 42, at Page 192, and recorded in full in Ordinance Book 13, beginning at Page 305.

Lillian R. Hoffman
City Clerk

Ordinance No. 120-ZAn Ordinance Amending Chapter 23
of the City Code - Zoning OrdinanceAn Ordinance Amending the City Code
with respect to the Zoning Ordinance

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE:

Section 1. That, Chapter 23, Section 23-8, of the Code of the City of Charlotte is hereby amended by changing from O-6 to B-1 on the Official Zoning Map, City of Charlotte, N. C. and Perimeter Area the following described property:

BEGINNING at a point in the northerly margin of Waterloo Place, said point being located N. 86-18W 75 feet from the intersection of the westerly margin of Briar Creek Road and the northerly margin of Waterloo Place and running thence in a westerly direction with said margin of Waterloo Place 300 feet to a point; thence N. 3-42 E, 250 feet to a line which is parallel to and 250 feet north of the northerly margin of Waterloo Place; thence in an easterly direction with said parallel line 300 feet, to a point; thence S. 3-42 W, 250 feet to the BEGINNING.

Section 2. That, this ordinance shall become effective upon its adoption.

Approved as to form:

City Attorney

Read, approved and adopted by the City Council of the City of Charlotte, North Carolina, in meeting on the 17th day of September, 1962, the reference having been made in Minute Book 42, at Page 194 and recorded in full in Ordinance Book 13, at Page 352.

Lillian R. Hoffman
City Clerk

Ordinance No.121-Z -

An Ordinance Amending Chapter 23
of the City Code - Zoning Ordinance

An Ordinance Amending the City Code
with respect to the Zoning Ordinance

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHARLOTTE:

Section 1. That, Chapter 23, Section 23-8, of the Code of the City of Charlotte is hereby amended by changing from R-6MF to I-1 on the Official Zoning Map, City of Charlotte, N. C. and Perimeter Area the following described property:

BEGINNING at the intersection of the centerline of Piedmont and Northern Railroad tracks and the northwesterly margin of South Lander Street and running thence with said margin N. 53-30 E 1,099.68 feet to a corner of property owned by Chadwick Mills, Inc.; thence N. 18-05 W 235 Feet, more or less, to an existing I-2 Zoning District Boundary Line, said line being parallel to and 200 feet northwest of South Lander Street; thence in a southwesterly direction with said boundary line 1, 050 feet, more or less, to the centerline of the Piedmont and Northern Railroad tracks; thence in a southerly direction with said centerline 245 feet, more or less to the BEGINNING.

Section 2. That, this ordinance shall become effective upon its adoption.

Approved as to form:

City Attorney

Read, approved and adopted by the City Council of the City of Charlotte, North Carolina, in meeting on the 17th day of September, 1962, the reference having been made in Minute Book 42, at Page 196, and recorded in full in Ordinance Book 13, at Page 353.

Lillian R. Hoffman
City Clerk