ARTICLE 15. PLUMBING AND GAS PIPING

Sub-Article 1. Definitions of Plumbing Terms

(14.1). §C26-1193.0 Definitions of Plumbing Terms.-For the purposes of this article, the words and terms listed in sections C26-1194.0 through C26-1219.0, shall have the meanings therein given.

(14.1.1). §C26-1194.0 Branch.-The term "branch" shall mean that part of a piping system which extends from the main to fixtures on two or less consecutive floors.

(14.1.2). §C26-1195.0 Caliber or Size of Pipes and Tubes.-The term "caliber" or "size" of a pipe or tube shall mean the nominal internal diameter of such pipe, except that for brass and copper tubing, and brass and copper pipe of other than iron pipe sizes, such terms shall mean the outside diameter.

(14.1.3). §C26-1196.0 Dead End.-The term "dead end" shall mean a branch which is terminated at a developed length of two feet by a fitting not used for admitting liquids to the pipe.

(14.1.4). §C26-1197.0 Developed Length.-The term "developed length" of a pipe shall mean the length along the center line of the pipe and fittings.

(14.1.5). §C26-1198.0 Drainage System.-The term "drainage system" shall mean that part of a plumbing system which receives, conveys and removes liquid and water-carried wastes and storm water.

(14.1.6). §C26-1199.0 Gas Piping.-The term "gas piping" shall mean the installation, repair, replacement and relocation of pipes, fixtures and other apparatus for distributing the gas supplied by a Public Utility for illumination or fuel in any premises.

(14.1.7). §C26-1200.0 House Drain.-The term "house drain" shall mean that part of the lowest piping of a house drainage system which receives the discharge from soil, waste and other drainage pipes and conveys such discharge by gravity to the house sewer and which piping ends at the outside of the front wall of the structure, vault, area or other extension.

(14.1.8). §C26-1201.0 Leader.-The term "leader" shall mean any vertical line of storm water piping.

(14.1.9). §C26-1202.0 Local Ventilating Pipe.-The term "local ventilating pipe" shall mean a pipe on the fixture side of the trap through which pipe vapors or foul air are removed from a room or fixture.

(14.1.10). §C26-1203.0 Main.-The term "main", when applied to any system of horizontal, vertical or continuous piping, shall mean that part of such system to which fixtures are connected directly or through branch pipes.

(14.1.11). §C26-1204.0 Plumbing.-The term "plumbing" shall mean the installation, repair, replacement and relocation of the pipes, fixtures and other apparatus for bringing in and distributing the water supply, removing liquid and water carried wastes, removing rain water and other liquid drainage and preventing trap siphonage and back pressure.

(14.1.12). §C26-1205.0 Plumbing Fixture.-The term "plumbing fixture" shall mean a receptacle intended to receive and discharge water or other liquid, or water-carried waste into a drainage system.

(14.1.13). §C26-1206.0 Plumbing System.-The term "plumbing system" when applied to a structure, shall include the water supply distributing pipes, the fixtures and fixture traps, the soil, waste and vent pipes, the house drain and house sewer and the storm water system, with their devices, appurtenances and connections within the structure and adjacent premises, except that such term shall not include the hot water distribution piping of a hot water heating system or

connections between various pieces of apparatus of a boiler plant, engine room machines, air conditioning and refrigerating systems, but such term shall include the primary water supply to any of the excepted systems or equipment and the main drains or wastes from such excepted systems or equipments.

(14.1.14). §C26-1207.0 Pool.-The term "pool" shall mean a swimming plunge bath or other bath designed to accommodate more than one bather at a time.

(14.1.15). §C26-1208.0 Sewers-House, Private, Public, Sanitary and Storm.-

a. The term "house sewer" shall mean that part of a house drainage system which extends from the house drain to a connection with a public sewer, private sewer or an approved sewage disposal plant and which conveys the drainage of out one plot.

b. The term "private sewer" shall mean a sewer which complies with the provisions of section 82d9-5.0 of the code.

c. The term "public sewer" shall mean a sewer constructed and operated by the city.

d. The term "sanitary sewer" shall mean a sewer designed or used to carry liquid or water-borne wastes from plumbing fixtures.

e. The term "storm sewer" shall mean a sewer carrying rain or sub-surface water.

(14.1.16). §C26-1209.0 Soil Pipe.-The term "soil pipe" shall mean any pipe which conveys to the house drain the discharge of water-closets or the discharge of other fixtures receiving fecal matter.

(14.1.17). §C26-1210.0 Stack.-The term "stack" shall mean any vertical line of soil, waste or vent piping.

(14.1.18). §C26-1211.0 Sub-house Drain.-The term "sub-house drain" shall mean that portion of a drainage system which cannot drain by gravity into the sewer.

(14.11.1, paragraph four, first sentence) §C26-1212.0 Sub-House Drainage System.-The term "sub-house drainage system" shall mean piping for a system such as is described in section C26-1315.0.

(14.1.19). §C26-1213.0 Trap.-The term "trap" shall mean a fitting or device so constructed as to prevent the passage of air or gas through a pipe or fixture, without materially affecting the flow of sewage or waste water.

(14.1.20). §C26-1214.0 Trap Seal.-The term "trap seal" shall mean the vertical distance between the crown weir and the dip of the trap.

(14.1.21). §C26-1215.0 Vent Pipe.-The term "vent pipe" shall mean any pipe provided to ventilate a house drainage system and to prevent trap siphonage and back pressure.

(14.1.22). §C26-1216.0 Waste Pipe.-The term "waste pipe" shall mean any pipe which receives the discharge of any fixture, except water-closets and all other fixtures receiving fecal matter, and conveys such discharge to a house drain, or a soil or waste stack.

(14.1.23). §C26-1217.0 Waste Pipe, Indirect.-The term "indirect waste pipe" shall mean a waste pipe which fails to connect directly with a house drain or a soil or waste stack.

(14.1.24). §C26-1218.0 Water Distribution Pipe.-The term "water distribution pipe" shall mean a pipe which conveys water to be used for plumbing systems in any part of premises.

(14.1.25). §C26-1219.0 Water Service Pipe.-The term "water service pipe" shall mean that portion of the water pipe which supplies one or more structures, and which pipe extends from the public or private main in the street to a main stopcock or valve inside the structure or to the point where the water supply is fully metered.

Sub-Article 2. General Plumbing Regulations

(14.2.1). §C26-1220.0 Sanitary Drainage.-In every structure in which the disposal of liquid or water-borne wastes or drainage is required, provision shall be made for conveying such wastes to a sewer. Where a sewer is not available, provision shall be made for disposing of such wastes by a method approved by the superintendent. Every such structure shall have its sanitary drainage system independently connected to a sewer or disposal system but, at the discretion of the superintendent, structures on the same lot or plot and under the same ownership, may be connected to the same sewer or disposal system. Where the street is without a public sewer, the superintendent may permit a row of dwellings to be served by a private sewer, under such conditions as he may deem adequate.

(14.2.2). §C26-1221.0 Storm Water Drainage.-Provision shall be made in every structure for conveying storm water to a sewer. Where a storm or combined sewer is not available, provisions shall be made for disposing of such storm water by a method approved by the superintendent. When a sewer is installed subsequent to the completion of an existing private dwelling, conveyance of storm water thereto may be waived in those parts of the city where the soil is of good porosity, provided the superintendent is satisfied that the roof drainage will not flow onto adjoining property or across a city sidewalk, or that such drainage is adequately contained by dry wells located at least eight feet from such private dwelling and from the side and rear lot lines, and will not discharge into or interfere with septic tanks, cesspools, seepage pits, tile fields, or any part of a private sewage disposal system, or is adequately disposed of by a drain constructed of heavy cast iron in accordance with section 227.0 of this title. Such waiver shall be effective only during the period that the property remains improved with private dwellings. Nothing in this local law shall be construed as relieving the owners of the property of the obligation of paying the assessments for benefit imposed for the construction of the sewer provided for in the approved drainage plan.

(14.2.2.1). §C26-1221.1 Drainage of Garages.-

1.

(1) Application and definitions. The provisions of this section shall apply to all garages whether built in, attached to or isolated from a one or two-family dwelling erected on the same lot or plot and to driveways providing entrance to or egress from such garages.

(2) The term “lot” as used in this section shall mean a lot or plot on which a one or two-family dwelling is located and the terms “lot line” and “lot lines” shall mean the line or lines bounding such lot or plot.

2. When there is no storm water or combined sewer in the streets in front of or adjacent to any such lot, the finished floor level of any accessory garage as described in section 1 of this act shall be not more than eighteen (18) inches below the lowest leve1 of the proposed or established street grade directly in front of or adjacent to the lot, depending upon which street provides entrance to such garage.

(a) When the furthermost wall of any such garage is distant more than one hundred and thirty (130) feet from the center line of the street on which the lot fronts, the elevation of the floor of such garage shall be increased one-eight (1/8) inch for each one (1) foot of distance in excess of said one hundred and thirty (130) feet.

(b) When any such garage is served by a driveway extending across the rear of the lot and serving other garages, the surface of such garage floor shall be at least six (6) inches above the surface of the driveway directly in front of the entrance door.

(c) A common driveway serving more than two (2) garages, each of which is erected on the same lot with a one- or two-family dwelling, as described in section 1, and which driveway extends across the rear portion of such lots approximately parallel to the rear lot lines and is directly connected to one or two streets, shall at no point on its surface be more than twenty-four (24) inches below the lowest level of the proposed or established street grade directly in front of or adjacent to such lot.

3. When there is a storm water or combined sewer in any street in front of or adjacent to any such lot built in conformity with an adopted or proposed public drainage plan, the finished floor level of any accessory garage, as described in section 1, shall be at an elevation above the top of such sewer at least one-eighth (1/8) inch for each foot of distance measured horizontally from the center line of such sewer to the furthermost wall of such garage plus twelve (12) inches.

(a) When there is a storm water or combined sewer in any street in front of or adjacent to any such lot built in conformity with an adopted or proposed public drainage plan, the finished surface of a common driveway, such as described in section 2 (c) hereof, which serves any such accessory garages, shall be built at an elevation not less than six (6) inches below the floor level of such garages.

4. Construction.-All garage floors and driveways shall be constructed of plain concrete laid on firm soil or rock.

All such garage floors shall be not less than four (4) inches thick and driveways serving more than two (2) garages shall be at least seven (7) inches thick and shall be provided with expansion joints along both the side and rear lot lines but in no instance shall such joints be located more than fifty (50) feet apart.

5. Drainage.-Drainage of ramps leading to garages shall in no instance begin or terminate at a point within the street area and driveways leading to such ramps shall be provided with adequate drains connected in storm water or combined sewers when such sewers are available for use. When there are no such sewers available, driveways shall be served by adequate dry wells constructed on each lot and approved by the department.

Driveways for the common use of two (2) or more garages constructed below the street level shall be provided with a drain on and for each separate lot. Such driveways shall be so constructed that the surface of the portion on each lot will be properly pitched toward its drain and in cases where a storm water or combined sewer is not available, a drywell of adequate size shall be provided on each separate lot to receive the drainage from such lot.

Where substantial differences in elevation of the surrounding streets are encountered, the superintendent shall have power to grant modifications within the spirit and intent of this act.

(14.2.3). §C26-1222.0 Materials and Arrangement of Plumbing Systems.-The kind and quality of materials for plumbing systems and the arrangement, installation and construction of such systems, shall be in accordance with this title and the rules of the board.

(14.2.4). §C26-1223.0 Water Supply.-Every structure intended for human occupancy shall be provided with a supply of pure and wholesome water. It shall be unlawful to connect such pure water supply with any unsafe water supplies or to cross connect such pure water supply to any drainage system. Every structure shall be provided with a supply of water sufficient to keep the plumbing fixtures sanitary. Where supply from water mains in the street is available each such structure shall be adequately supplied with water from such mains.

(14.2.5). §C26-1224.0 Plumbing Fixtures.-Every structure intended for human occupancy shall be provided with a sufficient number of suitable plumbing fixtures. Such fixtures shall be generally located within the structure, as required by the rules of the board.

(14.2.6). §C26-1225.0 Replacements and Alterations in Plumbing System.-A plumbing system lawfully installed before January first, nineteen hundred thirty-eight, may be either replaced or altered to an extent involving fifty percent or less of such plumbing system without being made to comply with this title, provided that the system is repaired or altered in a safe and sanitary manner to the satisfaction of the superintendent. If any replacements or alterations involve more than fifty percent of the fixture units and the piping used in connection therewith in the system, such whole system shall be made to comply with this title, except that any fixture may be replaced with another fixture of similar capacity and purpose without regard to the preceding limitations of this section.

(14.2.7) §C26-1226.0 Cesspools, privy vaults and septic tanks.-

a. Cesspools, privy vaults and septic tanks may be constructed only by special permission of the superintendent except that during construction work, privy vaults of a temporary nature may be constructed without such permission where street sewers are available.

b. Cesspools, privy vaults and septic tanks shall be constructed in a manner approved by the superintendent.

c. It shall be unlawful to use cesspools as privy vaults or to use privy vaults as cesspools. Cesspools, privy vaults and septic tanks shall be located at least fifteen feet from any structure and shall be located on the same lot as the structure which they are to serve.

d. As soon as sewers are available, the drainage system, including leaders, drains, cesspools, privy vaults and septic tanks, shall be connected in accordance with the rules of the board; every cesspool or privy vault shall be emptied, cleaned, disinfected and filled with fresh earth.

e. The board shall have power to grant exemptions to subdivision a of this section in cases where houses or buildings are already constructed and the board finds that it will be impractical to connect the storm water drains and leaders in the storm sewers and that proper drainage is otherwise provided for.

Sub-Article 3. Quality and Weights of Materials for Plumbing Systems

(14.3.1). §C26-1227.0 General Requirement for Quality of Plumbing Systems.-All materials used in any part of a drainage or plumbing system shall be free from defects.

(14.3.2). §C26-1228.0 Vitrified Clay Sewer Pipe.-Vitrified clay sewer pipe and fittings shall conform to the standard specifications for clay sewer pipe of the A.S.T.M., D., C 13-35.

(14.3.3). §C26-1229.0 Cast Iron Water, Soil and Waste Pipe and Fittings.-

a. Cast iron soil and waste pipe and fittings for drainage and venting shall be uncoated and shall otherwise conform to the standard specifications for cast iron soil pipe and fittings of the American Standard Cast Iron Soil Pipe and Fittings, D; A401-1935, except that spigot end may be either with or without a bead, and shall conform to Commercial Standard CS-188-59.

b. Such cast iron soil pipe shall be uncoated “extra heavy” pipe and, including the hub, shall have at least the following average weight per laying length of five feet.

	Weight in Pounds	
Size in Inches	**Single Hub Pipe**	**Double Hub Pipe**
2	25	26
3	45	47
4	60	63
5	75	78
6	95	100
8	150	157
10	215	225
12	270	285
15	375	395

(14.3.4). §C26-1230.0 Wrought Iron Pipe.-

a. Wrought iron pipe shall conform to the standard specifications for welded wrought iron pipe of the A.S.T.M., D., A 72-33, and shall be galvanized.

b. Such pipe shall have a least the following average thickness and weight per linear foot:

Diameter in Inches.	**Thickness in Inches.**	**Weight per Linear Foot in Pounds.**
1/2	0.109	0.85
3/4	0.113	1.13
1	0.133	1.68
1 1/4	0.140	2.28
1 1/2	0.145	2.72
2	0.154	3.65
2 1/2	0.203	5.74
3	0.216	7.57
3 1/2	0.226	9.11
4	0.237	10.79
5	0.258	14.62
6	0.280	18.97
8	0.322	28.55
10	0.365	40.48
12	0.375	49.56

(14.3.5). §C26-1231.0 Steel Pipe.-

a. Steel pipe shall conform to the standard specifications for welded and seamless steel pipe of the A.S.T.M., D., A 120-36, and shall be galvanized.

b. Steel pipe shall have at least the same average thicknesses and weights per linear foot as prescribed for wrought iron pipe in section C26-1230.0.

(14.3.6). §C26-1232.0 Lead Pipe-Sizes and Weights.-

a. Lead pipe shall be of the best quality of drawn pipe, with the minimum weights per linear foot given in the following table:

Lead Soil, Waste, Vent or Flush Pipes. Including Bends and Traps		
	Weight per Foot.	
Internal Diameter, Inches.	Pounds.	Ounces.
1	2	..
1 1/4	2	8
1 1/2	3	..
2	4	..
3	6	..
4	8	..

b. Lead water supply pipes shall be of the quality and weight known commercially as Grade AA for pressures less than eighty pounds; for pressures of eighty pounds or more, lead water supply pipe shall be Grade AAA.

c. The minimum weights and thicknesses of Grade AA and Grade AAA lead water supply pipes shall be in accordance with the following table:

Internal Diameter, Inches.	Grade AA		Grade AAA	
	Thickness in Inches.	Weight Per Linear Foot in Pounds.	Thickness in Inches.	Weight Per Linear Foot in Pounds.
3/8	.218	2.00	.256	2.50
1/2	.188	2.00	.256	3.00
5/8	.200	3.00	.231	3.50
3/4	.231	3.50	.293	4.75
1	.246	4.75	.298	6.00
1 1/4	.257	6.00	.319	7.75
1 1/2	.288	8.00	.386	11.25
2	.375	13.75	.504	19.50

(14.3.7). §C26-1233.0 Sheet Lead.-Sheet lead shall weigh at least four pounds per square foot.

§C26-1234.0 Brass Pipe.-

a. Threaded Brass Pipe.

1. Brass pipe, when used with threaded fittings, shall conform to the standard specifications for brass pipe, standard sizes of the A.S.T.M., D., B43-33, except that the minimum proportion of copper shall be sixty per cent.

2. Such pipe shall have at least the following average thickness and weight per linear foot:

Diameter in Inches.	Thickness in Inches.	Weight per Linear Foot in Pounds.
3/8	0.09	0.612
1/2	0.107	0.911
3/4	0.114	1.24
1	0.126	1.74
1 1/4	0.146	2.56
1 1/2	0.150	3.04
2	0.156	4.02
2 1/2	0.187	5.83
3	0.219	8.31
3 1/2	0.25	10.85
4	0.25	12.29
4 1/2	0.25	13.74
5	0.25	15.40
6	0.25	18.44
8	0.312	30.9
10	0.365	45.2
12	0.375	55.3

b. Unthreaded Brass Pipe.

1. Brass pipe, when used unthreaded and with faced fed silver brazed joints or approved welded joints, shall have a copper content of at least eighty-five per cent, and shall conform to the specifications for threaded pipe, or to the following specifications:

Diameter in Inches.	Thickness in Inches.	Weight per Linear Foot in Pounds.
3/8	.065	.472
1/2	.065	.600
3/4	.065	.763
1	.065	.968
1 1/4	.065	1.235
1 1/2	.065	1.423
2	.065	1.791
2 1/2	.068	2.278
3	.083	3.384
3 1/2	.095	4.427
4	.107	5.610
5	.132	8.555
6	.158	12.193
8	0.205	20.598
10	0.256	32.059
12	0.313	46.500

§C26-1235.0 Copper Pipe.-

a. Threaded Copper Pipe.

1. Copper pipe, when used with threaded fittings, shall conform to the standard specifications for copper pipe, standard sizes of the A.S.T.M., D., B42-33.

2. Such pipe shall have at least the following average thickness and weight per linear foot:

Diameter in Inches.	Thickness in Inches.	Weight per Linear Foot in Pounds.
3/8	0.09	0.64
1/2	0.107	0.95
3/4	0.114	1.30
1	0.126	1.85
1 1/4	0.146	2.69
1 1/2	0.150	3.20
2	0.156	4.23
2 1/2	0.187	6.14
3	0.219	8.75
3 1/2	0.25	11.41
4	0.25	12.94
4 1/2	0.25	14.46
5	0.25	16.21
6	0.25	19.41
8	0.312	31.600
10	0.365	46.200
12	0.375	56.500

b. Unthreaded Copper Pipe.

1. Copper pipe, when used unthreaded and faced fed silver joints or approved welded joints, shall conform to the specifications for threaded pipe or to the following specifications:

Diameter in Inches.	Thickness in Inches.	Weight per Linear Foot in Pounds.
3/8	.065	.483
1/2	.065	.613
3/4	.065	.780
1	.065	.989
1 1/4	.065	1.26
1 1/2	.065	1.45
2	.065	1.83
2 1/2	.068	2.32
3	.083	3.45
3 1/2	.095	4.52
4	.107	5.72
5	.132	8.73
6	.158	12.44
8	0.205	21.018
10	0.256	32.713
12	0.313	47.500

(14.3.10). §C26-1236.0 Threaded Fittings.-

a. Plain, screwed fittings shall be made of cast iron, galvanized malleable iron, brass, bronze or copper and shall be of at least standard weight and dimensions.

b. Drainage fittings shall be recessed type of cast iron, galvanized malleable iron, brass, bronze or copper, and shall have a smooth interior waterways and the threads shall be tapped so that branches shall have a uniform grade of at least one-eighth of an inch per foot.

c. The galvanizing of malleable fittings shall be in accordance with the requirements for galvanizing wrought iron pipe in section C26-1230.0.

d. Cast iron screwed drainage fittings shall conform to the American standard specifications for cast iron screwed fittings, B 16, d-27, for one hundred twenty-five pound steam fittings.

(14.3.11). §C26-1237.0 Clean-outs.-The bodies of clean-out ferrules shall be made of standard pipe sizes, conforming in thickness to the requirements for pipe and fittings of the same metal, and such bodies shall extend at least one-quarter of an inch above the hub. The clean-out cap or plug shall be of heavy brass at least one-eighth inch thick and such cap or plug shall be provided with a raised solid, square or hexagonal nut at least one inch high. Such nut shall have a diagonal of at least one and one-half inches or a recessed socket for removal. The engaging part shall have at least six threads of standard iron pipe size and shall be tapered.

(14.3.12). §C26-1238.0 Materials for House Sewers.-House sewers shall be constructed of extra heavy cast iron pipe installed in conformity with the standards of the borough president, except that in the case of the house sewers of one or two-family dwellings, vitrified clay sewer pipe or approved reinforced concrete pipe may be used when the ground is neither made nor filled in and when the pipes are at least three feet below the surface and in the opinion of the superintendent there is no danger of settlement by frost or from any other cause.

(14.3.13). §C26-1239.0 Plumbing Material Within Buildings.-Drainage and vent piping within structures shall be of extra heavy cast iron, galvanized steel or galvanized wrought iron, lead, brass or copper, singly or in combination, except that it shall be unlawful to use galvanized steel or wrought iron pipe underground. The maximum developed length to which lead pipe may be used in connection with anyone fixture shall be five feet.

(14.3.14). §C26-1240.0 New Plumbing Materials.-Other materials than those authorized may be used provided that such materials have been tested and approved in accordance with the rules of the board.

(14.3.15). §C26-1241.0 Prohibited Plumbing Fittings.-It shall be unlawful to use double hubs or sleeves on soil or waste lines. It shall be unlawful to drill or tap house drains, soil waste, or vent pipes, or to use saddle hubs or bands.

Sub-Article 4. Joints and Connections in Plumbing Systems

(14.4.1). §C26-1242.0 Tightness of Plumbing Joints and Connections.-Joints and connections shall be made gas and water tight.

(14.4.2). §C26-1243.0 Joints in Vitrified Clay Pipe.-Joints in vitrified clay sewer pipe shall be firmly packed with oakum or hemp and shall be secured with cement mortar or asphaltic compound at least one inch deep.

(14.4.3). §C26-1244.0 Caulked Joints.-Joints for bell and spigot metal drainage and vent pipe shall be firmly packed with picked oakum or hemp and shall be secured with molten lead. At least twelve ounces of fine, soft pig lead shall be used for each inch in diameter of the pipe used. Lead shall be run in one pouring and caulked tight. Lead joints for water supply piping shall conform to the regulations of the department of water supply, gas and electricity.

(14.4.4). §C26-1245.0 Caulking Ferrules and Soldering Nipples.-

a. Brass caulking ferrules shall be either of the best quality of cast brass or cold drawn seamless tube ferrules, with weights and dimensions in accordance with the following table:

Pipe Size, inches	Actual Inside diameter, inches	Length, inches	Weight	
			Pounds	Ounces
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

b. Soldering nipples shall be of brass pipe, iron pipe size, or heavy cast brass, of at least the following weights:

Diameter, in inches	Weights, ounces	
1 1/4	6	
1 1/2	8	
2	14	
	Weights	
Diameter, in inches	Pounds	Ounces
2 1/2	1	6
3	2	..
4	3	8

c. Soldering bushings shall be of brass pipe, iron pipe size, or heavy brass or copper.

(14.4.5). §C26-1246.0 Screw Joints.-

a. Screw joints shall be tapered with the threads sharp and true and all burrs due to cutting shall be reamed out smooth.

b. Where fitting compounds, red lead, white lead, or other joint materials are used in making up threaded joints, such materials shall be applied to the male threads only.

(14.4.6). §C26-1247.0 Wiped Solder Joints.-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, either manufactured or made in the field, with an exposed surface of the solder on each side of the joint of at least three-quarters of an inch, and a minimum thickness at the thickest part of the joint of three-eighths of an inch. It shall be unlawful to use overcast or cup joints.

(14.4.7). §C26-1248.0 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 a caulking ferrule, soldering nipple or bushing.

(14.4.8). §C26-1249.0 Fixture Flanges.-Flanges to receive fixture outlets shall be at least three-sixteenths of an inch thick and shall be made of brass or bronze.

(14.4.9). §C26-1250.0 Water-closet, Pedestal Urinal and Trap, and Standard Slop Sink Connections.-The connections between drainage pipes and water-closets floor outlet slop sinks, pedestal urinals and earthenware trap standards, shall be made by means of brass flanges caulked to the drainage pipes. Such connections may be wiped or soldered to lead pipes. Such connections may be bolted to the earthenware with an approved gasket or washer between the earthenware and the connection. Floor outlet connections shall be set on an approved floor slab or ring made of materials impervious to moisture.

(14.4.10). §C26-1251.0 Slip Joints and Unions.-Slip joints or unions shall be permitted only in trap seals or in the inlet side of the trap, except that where it is impracticable to provide otherwise for expansion in stacks of unusual height the superintendent may permit the use of an approved type of expansion joint which comprises in part a slip joint.

(14.4.11). §C26-1252.0 Roof Joints.-Where the pipes pass through roofs, the joints shall be made watertight by the use of copper, lead or cast iron plates or flashings.

(14.4.12). §C26-1253.0 Expansion and Contraction in Vertical Plumbing Pipes.-In structures exceeding one hundred fifty feet in height, adequate means shall be provided for taking care of the expansion and contraction of all vertical lines of pipe.

(14.4.13). §C26-1254.0 Welding of Plumbing Joints and Connections.-

a. Joints and connections for water or gas pipe made of brass copper, black steel or black wrought iron, or combinations of these materials, may be made by welding.

b. It shall be unlawful to weld any galvanized pipe, cast iron pipe or drain, soil or vent pipe of any material.

c. The electrodes, welding wire and welding rods used in welding shall meet the requirements of section C26-324.0. Welding shall be done in accordance with the American Standard Code for pressure piping B 31.1-1935. Contractors desiring to use welding shall be required to satisfy the superintendent as to their ability to produce joints and connections.

d. Silver brazing of standard brass pipe fittings to copper or brass pipes shall be accepted where the face fed alloy is inserted into a space between the inside face of the hub of the standard fitting and the exterior surface of the pipe. Such silver brazing alloy shall have a melting point greater than one thousand degrees Fahrenheit.

Sub-Article 5. Traps and Clean-Outs

(14.5.1). §C26-1255.0 Fixture Traps, Where Required.-Each fixture shall be separately trapped as near to such fixture as possible, except that a battery of two or three laundry trays, one sink and two laundry trays, or two compartment sinks may connect with a single trap when the outlets of such types of fixtures are two inches or less. Traps shall be as near to the fixture as possible, but such traps shall in any case be within two feet developed length from the outlet of such fixture. It shall be unlawful to discharge the waste from a bathtub or other fixture into the water-closet trap or bend. It shall be unlawful to double trap fixtures.

(14.5.2). §C26-1256.0 Design of Traps.-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, one-quarter inch smaller in diameter than the specified diameter of the trap, will pass freely from the outlet end entirely through the seal of the trap. The minimum diameter of traps for fixtures shall be that diameter given for the soil or waste branch in section C26-1292.0, except that in the case of water-closets, the required minimum shall be two and one-half inches. In cases other than fixtures, the size of the trap shall be the same as the size of the discharge pipe connecting thereto.

(14.5.3.) §C26-1257.0 Water Seal.-Fixture traps shall have a water seal of at least two inches. All other traps shall have a water seal of at least three inches.

(14.5.4). §C26-1258.0 Setting and Protection of Traps.-Traps shall be set true with respect to their water seals and shall be protected from frost and evaporation.

(14.5.5). §C26-1259.0 Back-water Valves.-Back-water valves shall have all bearing parts made of corrosion resisting metal and such valves shall be so constructed as to insure a positive mechanical seal and remain closed, except when discharging wastes. Back-water valves shall be of types approved by the board.

(14.5.6). §C26-1260.0 Prohibited Traps.-It shall be unlawful to use masons' traps or catch basins inside of buildings, traps with partitions, bell, pot, bottle or “D” traps or traps depending

for their seal upon the action of movable parts or concealed interior partitions, except that bell traps may be used on refrigerator safes and receptors. Traps having covers, hand holes or clean-outs held in place by lugs or bolts acting as interceptors for grease, plaster or similar substances, may be used if such traps are approved by the board.

(14.5.7). §C26-1261.0 Clean-outs Required.-Easily accessible cleanouts shall be provided at the foot of each vertical waste, soil stack or inside leader, on all hand holes of running traps, on all exposed or accessible fixture traps, except earthenware traps, and at each change of direction of horizontal run. Clean-outs shall be of the same nominal size as the pipes up to four inches, and such cleanouts shall be at least four inches for larger pipes. The maximum distance between the clean-outs in horizontal soil lines shall be fifty feet.

(14.5.8). §C26-1262.0 Clean-outs Equivalents.-Any floor or wall connection of fixture traps when bolted or screwed to the floor or wall shall be regarded as a clean-out.

Sub-Article 6. Hangers and Supports for Plumbing Piping

(14.6.1). §C26-1263.0 Vertical Piping.-Vertical piping shall be securely supported at the base at maximum intervals of every other floor, provided that such maximum interval is twenty-five feet or less.

(14.6.2). §C26-1264.0 Horizontal Piping.-Horizontal piping shall be securely supported at maximum intervals of ten feet.

(14.6.3). §C26-1265.0 Hangers.-Hangers shall be made of metal of heavy pattern and shall be securely attached to the building construction.

(14.6.4). §C26-1266.0 Bases of Risers and Horizontal Runs.-Bases of risers and horizontal runs in cellars may be supported on substantial masonry piers.

(14.6.5). §C26-1267.0 Pipes in the Ground.-Pipes in the ground shall be laid for the entire length on a firm bed.

Sub-Article 7. Water Supply and Distribution

(14.7.1.1) §C26-1268.0 Service Pipes.-

a. Street Connections.-House service pipes shall be connected to the street mains by taps, or wet connections and stopcocks or valves placed under the sidewalk at the curb, in compliance with the rules and under the supervision of the department of water supply, gas and electricity.

(14.7.1.2). b. Stopcock or Valve.-A separate stopcock or valve shall be placed upon the service pipe inside the front wall and within two feet of the point of entrance.

(14.7.1.3). c. Sizes of Water Pipes.-

1. The diameter of street service pipe shall be as required by the department of water supply, gas and electricity.

2. The minimum diameter of all riser lines in plumbing systems shall be three-quarters of an inch, except that one-half inch lead, copper or brass pipes may be used.

3. Every portion of a water distribution system shall be of such pipe sizes and arrangement as will insure an adequate supply of water to each plumbing fixture served, and in the case of water-closets and urinals, the supplies to such fixtures shall be adequate to flush each fixture fully.

4. Water-closets shall be supplied with water either from water closet tanks or from flush valves where the water pressure is sufficient to insure adequate supply. Flush valves, equipped with approved vacuum breakers; and tanks, equipped with approved vacuum

breaker type ball cocks, shall be supplied from risers and branches from which other supply branch may be taken. No flush valve supply riser shall be less than one and one-quarter inches in diameter and where the number of flush valves supplied is more than two, such riser shall be at least one and one-half inches in diameter. No main branch to flush valves shall be less than one and one-quarter inches in diameter, with individual branches of not less than one inch diameter, except that in private dwellings of not over two stories in height the superintendent may, in his discretion, permit a reduction in the size of risers and branches. When it is permissible to supply flush valves equipped with approved vacuum breakers; and water closet tanks equipped with approved vacuum breaker type ball cocks, from other than gravity tanks, they shall be supplied from risers and branches from which other supply branches may be taken.

(14.7.1.4). d. Materials for Water Supply Pipes.-

1. Water supply pipes for plumbing systems shall be lead, galvanized wrought iron or steel, copper, brass, or cast iron, galvanized cast iron, or galvanized malleable iron fittings.

2. It shall be unlawful to distribute water through pipes or fittings previously used for any other purpose.

(14.7.2). §C26-1269.0 Stopcocks or Valves on Water Supply Pipes.-Separate stopcocks or valves, always accessible shall be placed at the foot of each riser line; and in structures other than residence structures occupied exclusively by one or two families, or having less than sixteen sleeping rooms, such stopcocks or valves shall be placed on each branch line from the riser for each isolated fixture or group of fixtures; except that only one such stopcock or valve shall be required for all the fixtures contained in a single apartment, suite, store or loft occupied by one tenant when all such fixtures are supplied from one branch line. Such stopcock or valve may be located outside of the apartment, suite, store or loft which it serves.

(14.7.3). §C26-1270.0 Sizes of Water Supply Branches.-Water supply branches to fixtures shall have a minimum diameter of three-eighths of an inch when such branches are made of lead, copper or brass and a minimum diameter of one-half of an inch when such branches are made of other material, except when such branches are connected to flush valves. Water supply branches connected to flush valves shall have a minimum diameter of one inch for waterclosets and a minimum diameter of three-quarters of an inch for urinals.

(14.7.4). §C26-1271.0 Hot Water Supply Systems.-

a. Where hot water supply systems are installed, the hot water riser shall be covered with approved insulating material unless the hot and cold water risers are six inches or more apart.

b. In all buildings which are more than four stories in height and which are supplied with hot water, and in all other buildings where the developed length of the hot water piping from the source of hot water supply to the extreme fixture supplied exceeds one hundred feet, a hot water return circulation system shall be installed. The circulation return shall in all cases be one-half inch or more in diameter.

(14.7.5). §C26-1272.0 Relief Valves for Hot Water Systems.-An approved type of pressure relief valve shall be provided in each hot water supply system. Such relief valve shall be so located that there is no shut-off valve, meter or check valve between the water heating boiler or device and the relief valve.

(14.7.6.1). §C26-1273.0 House Supply Tanks.-

a. House Supply Tanks Required.-When the water pressure is insufficient to supply all fixtures freely and continuously a house supply tank shall be provided, which tank shall be adequate to supply in fixtures amply and at all times.

(14.7.6.2). b. Supply of House Tanks.-House supply tanks shall be supplied from the street pressure or, when necessary, by power pumps; when such tanks are supplied from the street pressure, ball locks shall be provided.

(14.7.6.3). c. Design of House Supply Tanks.-

1. Gravity house supply tanks shall be built of wood or steel or of wood lined with tinned and planished copper and such tanks shall be supported on steel beams. Such tanks shall be provided with suitable covers.

2. Pressure tanks shall be cylindrical closed pressure vessels and shall be built of steel, unless otherwise specifically approved by the superintendent. Such tanks shall be designed for at least the water working pressures under which they are to operate.

(14.7.6.4.). d. Overflow Pipes for House Supply Tanks.-Overflow pipes for gravity tanks shall discharge, whenever possible above and within six inches of the roof. Where such discharge is impossible, such overflow pipes shall be trapped and discharged over an open water supplied sink three and one-half feet or less above the floor, or connected through a check valve to a leader. It shall be unlawful to connect overflow pipes with any part of the plumbing, except as provided above. Overflow pipes shall be at least one commercial size larger than the supply pipe, but where the capacity of tanks is five hundred gallons or more, the minimum size of such pipes shall be four inches.

(14.7.6.5). e. Emptying Pipes for House Supply Tanks.-

1. Emptying pipes shall be provided and discharged as required for overflow pipes in subdivision d of this section.

2. Each tank shall be provided with emptying pipes having the following minimum diameters:

(a) Two and one-half inches for a tank of five thousand or more gallons capacity.

(b) Three inches for a tank of more than five thousand gallons and ten thousand gallons or less capacity.

(c) Four inches for a tank of more than ten thousand gallons capacity.

3. Each emptying pipe shall be equipped with a valve of the same diameter as the pipe.

(14.7.7). §C26-1274.0 Protection of Plumbing Systems Against Freezing.-Concealed water pipes, storage tanks, flushing cisterns, and exposed pipes or tanks subject to freezing temperatures, shall be effectively protected against freezing.

(14.7.8). §C26-1275.0 Air Chambers.-Self-closing devices shall be provided with air chambers complying with the rules of the department of water supply, gas and electricity.

Sub-Article 8. Plumbing Fixtures

(14.8.1) §C26-1276.0 Materials for Plumbing Fixtures.-

a. Plumbing fixtures shall be made of impervious materials with a smooth surface which shall be easily kept clean.

b. Water-closet bowls and traps shall be made of glazed vitreous earthenware, in one piece, and shall be of such form as to hold a sufficient quantity of water, when filled to the trap overflow, to prevent fouling of surfaces, and such bowls and traps shall be provided with integral flushing rims so constructed as to flush the entire interior of the bowl.

c. It shall be unlawful to use rubber connections on flush pipes.

d. Urinals shall be made of glazed earthenware.

(14.8.2.1). §C26-1277.0 Water-closets.-

a. Outside Location of Water-closets prohibited.-Water-closet accommodations in structures erected after January first, nineteen hundred thirty-eight, shall be placed inside of the structures which they serve, except as provided in section C26-1226.0 for temporary privies, or privies to be used where no public sewer is available. Whenever a street sewer connection is available, it shall be unlawful to replace an outside water-closet with an outside water-closet.

(14.8.2.2). b. Prohibited Types of Water-closets.-

1. It shall be unlawful to have pan, plunger, offset washout and washout, or other water-closets having unventilated spaces or walls which are not thoroughly washed out at each flushing.

2. Long hopper closets may be permitted only when the superintendent is convinced that there is exposure to frost.

(14.8.2.3). c. Flushing and Overflow of Water-closets.-

1. Every water-closet or urinal shall be flushed from a separate flush tank, the water from which is used for that purpose only, or such water-closet or urinal shall be flushed through an approved flush valve, as provided in subdivision c of section C26-1268.0.

2. It shall be unlawful to connect water-closets or urinals directly to a water supply system, except through approved flush valves so located as to prevent pollution of the water supply.

3. Overflows of flush tanks may discharge into water-closets or urinals, but it shall be unlawful to connect such overflows with any part of the drainage system.

(14.8.2.4). d. Iron and Automatic Flush Tanks.-Iron and automatic flush tanks for water-closets and urinals may be used only by special permission of the superintendent and with the approval of the department of water supply, gas and electricity.

(14.8.2.5). e. Flush Tank Lining.-The lining of water-closets and urinal flush tanks made of wood or other absorbent material shall he of at least ten-ounce copper.

(14.8.2.6). f. Flush Pipe Sizes.-Water-closet flush pipes shall be at least one and one-quarter inches in diameter and urinal flush pipes shall be at least one inch in diameter. Such pipes may be of copper tubing at least 0.0313 inch in thickness (No. 22 U.S. gage). Flush pipes shall be of non-ferrous metal.

(14.8.2.7). g. Wood Enclosure for Plumbing Fixtures.-Fixtures shall be devoid of permanent wood enclosures.

(14.8.2.8). h. Anti-siphon Devices.-Wherever the supply to a fixture is introduced into such fixture below the overflow level, such supply shall be provided with an approved vacuum breaker which will prevent the siphoning of water from such fixture into the supply piping.

(14.8.2.9). i. Capacity of flush tanks.-Each water-closet and urinal shall be supplied with a volume of water adequate to flush and clean the fixture and to refill the trap seal at each flushing, and flush tanks shall be of sufficient capacity to supply the required volume.

(14.8.3.1). §C26-1278.0 Swimming Pools.-

a. Construction of Swimming Pools.-Pools shall be built water tight. The inside surface shall be made of a smooth, non-absorbent material with rounded corners, and shall be so constructed as to be easily cleaned.

(14.8.3.2). b. Drainage of Swimming Pools.-

1. Pools shall be provided with a drain outlet so located that the entire pool can be emptied. Pools shall also be supplied with an overflow at the high water line. Such drain shall be at least three inches in diameter and shall be trapped before connecting with the drainage system. The trap shall be vented. Such overflow shall be connected to the inlet side of the trap and on the sewer side of the valve on the emptying drain. Drain and circulating outlets shall be fitted with a device to reduce the vortex. The spaces around the pool shall be drained in such a manner as to prevent the water from draining into the pool. Such spaces may pitch into drained gutters built into the sides of the pool. The drains in the gutters may also serve as overflows.

2. The size of the drain and vent connections shall be determined by the capacity of the pool when filled to the overflow level.

3. The diameter of the trap shall be at least the diameter of the drain pipe.

(14.8.3.3). c. Circulation of Water in Swimming Pools.-

1. Pools shall be equipped to provide a continuous supply of clear wholesome water at the rate of twenty gallons per hour for each bather using the pool in any one hour. The supply may be either fresh water from an approved water supply system, or such supply may be recirculated if approved means are provided for filtering and sterilizing the water before such water is reintroduced into the pool. The inlets shall be located so as to circulate the water over the entire area of the pool.

2. The piping of recirculating systems shall be kept entirely separate from the city or domestic supply system.

(14.8.3.4). d. Sterilizing and Filtration Equipment for Swimming Pools.-Sterilizing and filtration equipment shall be adequate to keep pool in a sanitary condition at all times.

(14.8.3.5). e. Shower Baths and Toilet Facilities.-Adequate shower bath and toilet accommodations, conveniently located for the use of the bathers, shall be provided for all pools.

(14.8.3.6). f. Cleaning of Swimming Pools.-Swimming pools shall have their interior surfaces thoroughly cleaned at such intervals as the superintendent may prescribe but in any event, all interior surfaces shall be thoroughly cleaned each time the pool is drained.

(14.8.3.7). g. Sign Indicating Maximum Approved Capacity.-There shall be placed above each swimming pool at a location designated by the superintendent, a conspicuous sign bearing a legend stating the maximum number of persons permitted to use the pool in any one hour. The sign shall be of a form and type prescribed by the superintendent.

(14.8.4). §C26-1279.0 Number of Toilet Fixtures Required.-

a. Every office building, school, store, warehouse, manufacturing establishment or other structure, where workmen or workwoman are or will be employed, shall be provided with at least one water closet.

b. Water-closets shall be provided for each sex according to the following table. 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.

Number of persons	Number of closets	Ratio
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

Thereafter, water closets shall be provided at the rate of one closet for every thirty persons, except that in schools designed for a minimum occupancy of four hundred pupils, at least one toilet fixture shall be provided for each forty pupils and in toilets for boys, at least one-quarter of the fixtures shall be water-closets.

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

d. For dwellings to be occupied by one or two families, at least one water-closet shall be provided for each family in the apartment occupied by such family. Where there are more than two families provision shall be made as required in the multiple dwelling law.

e. Places of public or semi-public assembly accommodating large numbers of persons, shall be provided with a sufficient number of water-closets and urinals as directed by the superintendent. Such water-closets and urinals shall be in an accessible location and shall be provided with signs plainly indicating their purpose.

(14.8.5). §C26-1280.0 Location of Toilet Fixtures.-

a. Water-closets shall be readably accessible to the persons using them. It shall be unlawful to locate water-closets more than one floor above or below the regular working place of the persons using them, except that the superintendent may determine the location of water-closets in warehouses, garages, and similar structures of low occupancy.

b. The requirement of this section as to location shall be inapplicable when passenger elevators are provided in sufficient numbers and employees are permitted to use such elevators in going to the toilet room floors.

Sub-Article 9. Drainage and Venting of Plumbing Systems

(14.9.1). §C26-1281.0 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 in accordance with the rules of the board.

(14.9.2). §C26-1282.0 Protection of Stacks.-Soil or waste stacks shall be installed inside of the structure.

(14.9.3). §C26-1283.0 Prohibited Plumbing Connections.-It shall be unlawful to make any waste connection to a bend of a water-closet or similar fixture. It shall be unlawful to use oil or waste vents as soil or waste pipes.

(14.9.4). §C26-1284.0 Changes in Direction in Plumbing Systems.-Changes in direction shall be made by the appropriate use of forty-five degrees wyes, half wyes, long sweep quarter bends, sixth, eighth or sixteenth bends, or long turn tee-wye fittings, except that short turn tee-wye fittings may be used on vertical stacks. Fittings other than the above may be used if such fittings

are approved in accordance with the rules of the board. All quarter bends shall be long turn. Tees and crosses may be used in vent pipes.

(14.9.5). §C26-1285.0 Grade of Horizontal Drainage Piping.-Horizontal drainage piping shall be run in practical alignment and at a uniform grade of at least one-eighth of an inch per foot.

(14.9.6). §C26-1286.0 Old House Drains and Sewers.-Old house drains and house sewers may be used for connections to new structures or new plumbing only when such drains and sewers are found, on examination, to conform in all respects to the requirements of the borough president and the rules of the board.

(14.9.7). §C26-1287.0 House Drains for Rear Buildings.-When a structure stands in the rear of another structure on the same interior lot, and a private sewer is unavailable or cannot be constructed the house drain of the front structure may be extended to the rear, and the whole considered as one house drain.

(14.9.8). §C26-1288.0 Location of House Sewers.-It shall be unlawful to lay house sewers within ten feet of any foundation or property line unless such sewers are constructed of cast iron pipe.

(14.9.9). §C26-1289.0 House Traps and Fresh Air Inlets.-

a. Every structure in which plumbing fixtures or leaders are installed, shall be provided with a house trap. Such trap shall be located on the house drain near the front wall of the structure inside of the property line and on the sewer side of all connections, except a connection used to receive the discharge from a sewer lift, oil separator, blow-off pipe or leaders. If such trap is placed outside of a house or below a cellar floor, such trap shall be made accessible in a masonry manhole, with an approved cover.

b. A fresh air inlet pipe shall be provided for each house drain discharging directly into a house trap. Such fresh air inlet pipe shall connect with such house drain just ahead of the house trap and such inlet pipe shall be of a diameter at least half the diameter of the house drain, where such inlet pipe connects thereto but in any case not less than three inches (3") and shall extend to the outer air and terminate in an open end at least six inches above grade. Such open end shall be protected by a perforated metal plate permanently fixed in the mouth of the inlet. Such metal plate shall have a clear ventilating area at least equal to the area of the pipe.

c. It shall be unlawful to use curb boxes or similar devices with gratings placed in sidewalks as fresh air inlets.

d. In all new one and two family dwellings constructed so that the level of the lowest floor is less than 7 feet no inches above mean high water level, and drains or sanitary plumbing fixtures are installed in such cellar or basement, a back-water valve approved by the Board of Standards and Appeals shall be installed.

Back-water valves shall be located either inside at the front wall when such front wall is at or near the building line or outside the building when the front wall is set back from the building line. Such back-water valves shall be on the sewer side of the house trap. Back-water valves shall be accessible for maintenance and servicing.

(14.9.10). §C26-1290.0 Floor Drains.-

a. Floor drains shall be permitted only when it can be shown to the satisfaction of the superintendent that their use is absolutely necessary.

b. Cellar or basement floor drains or groups of drains shall connect into a trap or traps of adequate size. Such traps shall be so constructed that they can be readily cleaned. The venting of such traps shall be unnecessary. The drain inlet shall be so located that it is at all

times in full view. When such drains are subject to back flow or back pressure, they shall be equipped, subject to the approval of the superintendent, with adequate backwater valves of a type approved by the board. The maximum distance from the trap to any floor drain shall be fifteen feet.

c. Floor drains located more than one story above the lowest part of the house drain shall be connected to the sanitary system and shall be provided with a re-vent and a properly controlled water supply connection four feet or less above the drain. Shower bath drains, drains in floor urinals or any other drain used as a part or in connection with a plumbing fixture, shall be considered a plumbing fixture. Floor drains in garages or other structures where such drains receive the discharge of oils and similar substances, shall be installed as provided in section C26-1296.0 and section C26-1313.0.

(14.9.11). §C26-1291.0 Fixture Units.-

a. The following table based upon the rate of discharge from a lavatory as the unit shall be employed to determine fixture equivalents.

One lavatory or wash basin	1
One bathtub	2
One laundry tray	2
One sink (except slop sink)	2
One combination fixture	3
One urinal	3
One shower bath	2
One floor drain	2
One slop sink	3
One water-closet	6
One slop sink with flushing rim	6
One drinking fountain	1/2
One dental cuspidor	1/2
One bathroom group containing one water-closet, one lavatory and one bathtub, with or without shower or one shower stall	6
One bathroom group containing one water-closet, one lavatory, one bathtub and one shower	7
Sterilizers with 1/2 inch waste connections	1/2
Each 1.000 gallons of capacity of a swimming pool	1

b. For fixtures other than those mentioned in the above list, the number of units shall be established by the size of the waste connections on the following basis:

Size of Waste Outlet in Fixtures.	Number of Units.
1/2 inch, 3/4 inch, less than 1 inch	1/2
1 inch	1
1 1/4 inch	2
1 1/2 inch	3
2 inches	5 1/2
2 1/2 inches	8
3 inches	15
4 inches	30
5 inches	50
6 inches	80
8 inches	160

c. Where the term "water-closet" is used in sections C26-1291.0 through C26-1295.0 it shall include bed pan washers, hoppers and similar fixtures receiving fecal matter.

(14.9.12). §C26-1292.0 Minimum Size of Individual Soil and Waste Branches.-

a. Minimum sizes of soil or waste branches to individual fixtures shall be in accordance with the following table:

Water-closet	3 inches
Floor drains	3 inches
Urinal	2 inches
Slop sink	3 inches
Sink (except slop sink)	2 inches
Bath tub	1 1/2 inches
Laundry tray	1 1/2 inches
Shower bath	2 inches
Lavatory	1 1/2 inches
Drinking fountain	1 1/2 inches
Dental cuspidor	1 1/2 inches
Sterilizers with 1/2 inch waste outlet	1 1/2 inches
Combination fixture (laundry tubs and kitchen sinks)	2 inches

b. The size of any stack, house drain and house sewer shall be at least that of the largest branch connected to it.

(14.9.13). §C26-1293.0 Branch Soils and Wastes.-The required size of branch soils and wastes receiving the discharge of two or more fixtures, shall be determined on the basis of the total number of fixture units drained by branch soils and wastes, in accordance with the following table:

Maximum Number of Fixture Units Permitted.	Maximum Number of Water-Closets Permitted.	Diameter of Branch.
2	..	1 1/2 inches
9	..	2 inches
20	..	2 1/2 inches
35	1	3 inches
100	11	4 inches
250	28	5 inches

(14.9.14). §C26-1294.0 Soil and Waste Stacks.-

a. Soil or waste stacks shall extend through the roof undiminished in size as such size is established at the base, and such stacks shall also meet the requirements of section C26-1307.0.

b. Soil and waste stacks shall be as direct as possible, and such stacks shall be free from sharp angles and turns. The required size of a soil or waste stack shall be independently determined by the fixture units connected to such stack and the total length, in accordance with the following table:

Size of Stacks.			
Maximum Number of Fixture Units Permitted.	**Maximum Number of Water-Closets Permitted.**	**Diameter of Stacks.**	**Maximum Developed Lengths.**
4	..	1 1/2 inches	50 feet
14	..	2 inches	75 feet
36	..	2 1/2 inches	100 feet
90	1	3 inches	150 feet
400	40	4 inches	300 feet
1,000	120	5 inches	500 feet
1,800	200	6 inches	Unlimited
3,500	400	8 inches	Unlimited
5,000	600	10 inches	Unlimited

c. When the above table calls for a stack four inches or more in diameter which does not receive the discharge of any water-closet, the diameter may be reduced one size without changing the loading or the developed length. (Par. c as added by L.L. 1940, No. 52, May 16.

d. It shall be unlawful to discharge water-closets into a stack less than three inches in diameter. It shall be unlawful to discharge more than one water-closet into a three-inch stack or branch.

e. The size of the horizontal run from the base of the soil or waste stack to the house drain, shall be in accordance with the table for sanitary house drains in section C26-1295.0, except that the size shall be at least that of the largest stack connected to such horizontal run.

(14.9.15). §C26-1295.0 Size of House Drains and House Sewers.-

a. The required size of sanitary house drains and sanitary house sewers shall be determined on the basis of the total number of fixture units drained by them, in accordance with the following table:

Sanitary Systems Only.	
Maximum Number of Fixture Units Permitted.	**Diameter of House Drain in Inches.**
2	1 1/2
9	2
25	2 1/2
70	3
200	4
400	5
660	6
1,500	8
2,800	10
5,000	12

b. The minimum size of a house drain receiving the discharge of a water-closet shall be four inches in diameter, continued full size to all vertical stacks receiving the discharge of a water-closet.

c. House drains receiving the discharge of any plumbing fixture shall be connected to at least one stack with a minimum diameter of three inches and extend through the roof.

(14.9.16). §C26-1296.0 Oil Separators.-

a. When the liquid wastes from any structure consist wholly or in part of volatile, inflammable oil, and an oil separator is required by law, the fixtures receiving such wastes shall be connected to an independent drainage system discharging into such separator. Every oil separator shall have an individual three-inch vent extending from the top of such separator to the outer air at a point at least twelve feet above street level.

b. The discharge from the oil separator shall be either independently connected to the sewer or to the sewer side of the house trap.

c. A separator shall be accepted in lieu of a house trap.

d. A fresh air inlet shall be provided from the drain at the inlet side of the separator to the outer air and such inlet shall terminate with the open end at least six inches above grade. The diameter of such inlet pipe shall be equal to the diameter of such drain but in any case such diameter shall be three inches or more.

e. The horizontal drain and one riser shall be at least three inches in diameter. Risers shall be carried full size through the roof.

f. Oil separators shall be installed in accordance with the rules of the board.

(14.9.17). §C26-1297.0 Acid Systems.-

a. It shall be unlawful to discharge into the regular plumbing system any acids or liquids of any kind which may be injurious to such system. Such acids or liquids shall be discharged through an independent system directly to the sewer. Piping for both drainage and vents shall be of acid resisting material approved by the superintendent.

b. The superintendent may, however, permit the discharge, into the regular plumbing system, of chemically neutralized acid waste or other liquids which would otherwise be injurious to the system, if in his opinion, the treatment of these liquids renders them no more harmful than regular waste and drainage.

(14.9.18). §C26-1298.0 Combined Storm and Sanitary Drainage Systems.-

a. Whenever a combined storm and sanitary drainage system is employed, the required sizes of all parts of such system shall be determined by adding to the drained area an allowance in

square feet for each fixture unit on the sanitary system, except that combined sanitary and storm house sewers shall be at least four inches in size. Such allowance shall be determined in accordance with the following table:

Add to the drained area the following number of square feet:

30 for each of the first 6 fixture units;
20 for each of the next 4 fixture units;
14 for each of the next 10 fixture units;
9 for each of the next 10 fixture units;
6 for each of the next 1,470 fixture units;
5 for each of the next 1,500 fixture units;
4 for each of the next 2,000 fixture units;
3 for each fixture unit thereafter.

b. The required sizes of the sanitary system and the storm system up to their point of junction may be independently determined from the tables applying to these separate systems.

c. The required sizes of storm water house drains, house sewers and all other storm water piping, shall be determined on the basis of the total drained area in horizontal projection, in accordance with the following table:

Size of Piping For Storm Water Only			
	Maximum Drained Area in Square Feet.		
	A	**B**	**C**
Diameter of Pipe in Inches.	**Fall, 1/8 Inch to a Foot.**	**Fall, 1/4 Inch to a Foot.**	**Fall, 1/2 Inch to a Foot.**
2	250	350	500
2 1/2	450	600	900
3	700	1,000	1,500
4	1,500	2,100	3,000
5	2,700	3,800	5,500
6	4,300	6,100	9,000
8	9,600	13,000	19,000
10	16,500	24,000	35,000
12	27,000	40,000	56,000

d. The size of the horizontal run from the base of the leader to the house drain, including the trap, shall be in accordance with the above table.

e. Leaders shall be at least of the size required in Column C of the above table.

(14.9.19). §C26-1299.0 Drainage of Yards, Areas and Roofs.-Except for driveway or a paved area pitched toward an unpaved area which will accommodate the rainfall on the same lot of a fully detached one or two family dwelling erected prior to the enactment of this section, areas, yards, courts and court yards, if paved, together will all roofs, shall be drained into a storm sewer or combined sewer. When drains used for such purpose are connected with the combined sewer, such drains shall be effectively trapped. One trap may serve all such connections. All traps shall be protected against frost. It shall be unlawful to drain such areas, yards, courts, court yards, and roofs into sewers intended for sewage only.

(14.9.20). §C26-1300.0 Leaders.-Every building shall be provided with gutters and leaders for disposing of water from the roof in such manner as to prevent injury to the walls and foundations, except that the superintendent, in his discretion, may grant permission for the omission of gutters and leaders, in special cases. When such gutters or leaders are omitted, the

surface of the ground adjacent to the foundation walls shall be graded so as to prevent injury to the walls and foundations.

(14.9.21). §C26-1301.0 Prohibited Connections With Leaders.-It shall be unlawful to use leaders as soil, waste or vent pipes, or to use soil, waste or vent pipes as leaders, except as provided in subdivision d of section C26-1273.0, and in section C26-1314.0.

(14.9.22). §C26-1302.0 Protection of Traps by Vents.-

a. Every fixture trap shall be protected against siphonage and back pressure. Every fixture trap shall be individually vented, except as otherwise provided in this section .and except that the topmost fixture may be without a vent if such fixture is within two feet of the main waste or soil stack. It shall be unlawful to install crown vents.

b. In schools, traps of sinks in chemical laboratories may be installed without vents provided that:

1. Traps are of deep seal type.

2. Wastes are connected to an independent stack of acid resisting materials which serves chemical laboratory fixtures on not more than two floors and which extends without other connections to an independent house trap and house sewer, except that all similar laboratory stacks may be connected into a single line which is connected through the independent house trap to the street sewer.

(14.9.23). §C26-1303.0 Vent Pipe Grades.-Vent and branch vent pipes shall be free from drops or sags or such pipes shall be so graded and connected as to drip back by gravity to a soil or waste pipe. Where vent pipes connect to a horizontal soil or waste pipe, the vent branch shall be taken off above the center line of the pipe and the vent pipe shall rise vertically or at an angle of forty-five degrees to the vertical before offsetting horizontally or connecting to the branch, main waste or soil vent.

(14.9.24). §C26-1304.0 Distance of Vent From Trap Seal.-The maximum distance from the vent intersection with the waste or soil pipe to the dip of the trap shall be two feet developed length. The vent opening from the soil or waste pipe, except for water-closets and similar fixtures, shall be above the dip of the trap. Branch vent lines shall be kept above the tops of all connecting fixtures, in order to prevent the use of vent pipes as soil or waste pipes.

(14.9.25). §C26-1305.0 Main Vents to Connect at Base.-

a. Main vents or vent stacks shall connect at their base to the main soil or waste pipe at least three feet below the lowest vent branch. The size of such connection shall be as required by section C26-1306.0. Such stacks shall extend undiminished and unincreased in size above the roof or such stacks shall be reconnected with the main soil or waste stack at least three feet above the highest fixture branch. The pipe above the intersection shall be increased as required by section C26-1306.0.

b. Wherever possible, the base of the vent stack shall receive the wash of the adjoining soil or waste.

(14.9.26). §C26-1306.0 Required Size of Vents.-

a. The required size of the vent 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 following table. Vents shall be at least one and one-half inches in diameter. The diameter of every vent stack shall be at least one-half the diameter of the soil or waste stack served. In determining the developed length of vent pipes the vent stack and branches shall be considered continuous.

Vent Stacks and Branches.		
Diameter of Pipe	**Maximum Number of Fixture Units Permitted**	**Maximum Developed Length in Feet for Each Size**
1 1/2 inches	6	25
2 inches	40	60
2 1/2 inches	72	100
3 inches	120	150
4 inches	250	250
5 inches	500	300
6 inches	1,250	400
8 inches	2,400	unlimited
10 inches	3,000	unlimited
12 inches	5,000	unlimited

b. Where main stacks are grouped together at the top of a structure into one pipe which extends through the roof, such combined vent shall be at least equal in area to seventy-five percent of the sum of the areas of the stacks connecting into such combined vent.

(14.9.27). §C26-1307.0 Roof Vent Extensions and Terminals.-

a. Roof extensions of soil and waste stacks, or roof vents, shall be run at full size at least one foot above my roof pitched at an angle of thirty degrees or more from the horizontal. Such extensions shall be run full size at least four feet above any roof pitched at an angle of less than thirty degrees from the horizontal. Such extensions shall be run at least five feet where the roof is used for any purpose other than weather protection.

b. If the roof terminal of any vent, soil or waste pipe, is within ten feet of any door, window, scuttle or airshaft, such roof terminal shall extend at least three feet above such opening.

c. When soil waste or vent pipes are extended through the roof, they shall be at least four inches in size. Pipes smaller than four inches shall be provided with a proper increaser located just below the roof line.

(14.9.28). §C26-1308.0 Location of Windows in Relation to Vent Stacks.-In the event that a structure is built higher than a structure erected before January first, nineteen hundred thirty-eight, it shall be unlawful for the owner of such higher structure to locate windows within ten feet of any existing vent stack on such 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 the vent stacks on such lower structure with the provision of this title.

(14.9.29). §C26-1309.0 Vents Not Required.-Vents may be omitted on leader traps, back-water valves, subsoil catch basin traps, or drinking fountains as described in section C26-1312.0.

(14.9.30). §C26-1310.0 Local Vent Connections.-

a. Local vent pipes may be installed.

b. Local vent pipes from fixtures, when installed shall be entirely distinct from other ventilating ducts, flues, or pipes in the structure.

c. Local vent pipes in which condensation may collect shall be provided with drips. Such drips shall either be connected as an indirect waste or shall be connected to the house side of a fixture trap.

(14.9.31). §C26-1311.0 Offsets in Soil, Waste, and Vent Stacks.-When cast iron bell and spigot pipe is used, offsets in soil and waste stacks above the highest fixture connection, and offsets in vent stacks and connections of such vent stacks to a soil or waste pipe at the bottom, or to the house drain, shall be made at an angle of at least forty-five degrees to the horizontal,

except that where it is impractical, because of structural conditions, to provide a forty-five degree angle, the superintendent may permit a reduction in the angle under such conditions as he may prescribe.

Sub-Article 10. Refrigerator, Industrial, Safe and Special Wastes

(14.10.1). §C26-1312.0 Indirect Wastes.-

a. Bar sinks, soda fountains and drinking fountains may be installed with indirect wastes. Where kitchen fixtures, refrigerators, ice boxes or receptacles wherein food is stored, are not water supplied, drips therefrom shall be installed with indirect wastes. Kitchen and similar equipment which is not water supplied shall be installed in indirect wastes.

b. Indirect wastes which receive the discharge from fixtures on more than three floors or which exceed one hundred feet in length shall be extended through the roof.

c. Fixtures connected to indirect wastes shall be trapped, but it shall be unnecessary to vent such fixtures.

d. Indirect wastes shall discharge into a water supplied, trapped and vented sink, floor drain, funnel or other approved receptacle.

e. The size of indirect waste pipes shall be the same as fixed by section C26-1294.0, except that the size of indirect wastes receiving drinking fountains only may be fixed by the number of fixtures connected, without regard to the developed length.

f. Drip pipes from refrigerators, ice boxes or receptacles where food is stored shall be installed as indirect wastes, and such drip pipes shall discharge into a safe pan, receptor, floor drain or sink. The waste from such safe pans or receptors, shall be trapped with traps approved for such use. The piping shall be installed with clean-outs on horizontal runs.

g. The waste pipe from a refrigerator safe or receptor shall be at least one inch in diameter. When such pipe is installed as a stack with branches on separate floor, such pipe shall have a minimum diameter of one and one-quarter inches. Such pipe shall be of brass, copper or galvanized wrought iron.

(14.10.2). §C26-1313.0 Industrial Wastes.-Wastes from hospitals, chemical plants, laundries, abattoirs, or any other industrial wastes, which in the opinion of the superintendent are detrimental to the public sewer system, or public health, shall be treated inside of the structures as directed by the superintendent, before, such wastes are discharged into the sewer. At the time of the filing of plumbing plans for any hospital, chemical plant, laundry, abattoir or any similar industrial structure a statement shall be filed as to what substances, ingredients or matter other than the usual wastes from the human body, will be discharged into the sewer.

(14.10.3). §C26-1314.0 Overflow and Emergency Drains.-

a. 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 or shall be trapped into an open fixture or shall discharge as for refrigerator wastes. With the express permission of the superintendent, such pipes, if provided with a check valve, may be connected to a leader.

b. It shall be unlawful to make connections between water supply pipes at the sanitary system.

Sub-Article 11. Special Conditions

(14.11.1). §C26-1315.0 Drainage Below Sewer Level.-

a. The drainage from such parts of the drainage systems as lie below the crown levels of the street sewer and also from such parts as cannot drain by gravity into the sewer shall be disposed through a system of sub-house drains and shall be lifted by approved means into the sewer.

b. The discharge from any sump or receiving tank required by this article to airtight and vented, shall be connected with the house sewer on the street side of the house trap and the inlet to such sump or receiving tank shall be provided with house trap and fresh air inlets as provided in section C26-1289.0 except as to location.

c. The discharge from any sump or receiving tank not required by this article to be air-tight and vented, shall discharge into a house drain ahead of the house or in the house sewer on the street side of the house trap.

d. Piping for a sub-house drainage system shall be installed in accordance with the requirements for gravity systems. The lifting equipment shall be considered the equivalent of the house sewer.

e. Sub-house drains shall discharge into an air-tight 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 devices automatically operated. When the lifting device forms a trap, an additional trap on the drain may be omitted, but all fixtures and equivalent devices shall be trapped. When sub-drains do not receive the discharge of plumbing fixtures other than cellar floor drains or drips from machinery, it shall be unnecessary for the sump or receiving tank to be air-tight or vented.

(14.11.2). §C26-1316.0 Venting of Ejector Systems.-The venting of sub-house drainage systems shall be as described under (a) and (b) as follows, depending upon whether the system is atmospheric or pneumatic:

(a) The vents of sub-house drainage systems may be connected to the vents of the gravity systems.

(b) When an atmospheric system is used and the sewage is discharged by means of pumps, the sewage receiving tank shall be provided with a three-inch vent pipe which may be connected to the gravity vent system, provided such system is three inches or larger.

(c) When a pneumatic system is used and the sewage is discharged by means of air pressure, the mechanism for the relief of such air pressure in the closed sewage receptacle shall have valves, piping and connections which form part of the sewage ejector device, of sufficient size to relieve the ejector pot to atmospheric pressure in not more than ten seconds. The minimum size for such valves, piping and relief connections in no case shall be less than one and one-quarter inches in diameter. Such pneumatic sewage ejector relief device shall have an independent vent line not less than three inches in diameter connected thereto and carried independently to the roof, terminating in the same manner as required for vent pipes in Section C26-1307.0.

(14.11.3). §C26-1317.0 Motors, Compressors and Air Tanks for Sub-House Drainage Systems.-Motors, compressors, control panels and air tanks shall be so located as to be open for inspection and repair at all times.

(14.11.4). §C26-1318.0 Sub-Soil, Foundation, Clear Water and Absorption Tile Drains.- Sub-soil drains, where installed, shall discharge into a silt interceptor or sand trap. The piping from such interceptor, if connected to the house drain, shall be provided with an approved back

water valve and trap, both accessibly located. The discharge shall be connected behind a leader or area drain trap. The material for sub-soil drains shall be clay pipe laid with open joints, or perforated horseshoe tile.

(14.11.5). §C26-1319.0 Sub-Soil Drains Below Sewer Level.-Sub-soil drains below the sewer and cellar floor drains or drips from machinery shall be discharged into an independent sump or receiving tank. The contents shall be automatically lifted and discharged into a leader or into a storm water drainage system on the inlet or outlet side of the trap. The discharge of automatic systems shall be protected against back pressure.

(14.11.6). §C26-1320.0 Condensers and Blow-Off Tanks.-It shall be unlawful to connect a steam exhaust, boiler blow-off or drip pipe with the house drain. Such pipes shall discharge directly into a condensing tank properly connected to the house sewer. In low pressure steam systems the condensing tank may be omitted, but the waste connection must otherwise be as required in this article.

Sub-Article 12. Tests of Plumbing Systems

(14.12.1). §C26-1321.0 Tests of Plumbing Systems Required.-

a. Every part of any drainage or vent piping shall be subjected to a water test before any such part is concealed or built in. After all the plumbing fixtures have been set, the entire drainage and vent system shall be subjected to a final smoke test.

b. The equipment, materials, power and labor necessary for such tests shall be furnished by, and at the expense of, the plumber.

c. Such tests shall be witnessed by duly qualified inspectors of plumbing who are authorized by the superintendent. Every part of the drainage and vent piping shall be approved by the superintendent both as to installation and tests if such installation tests are satisfactory.

d. If any house drainage or plumbing system or any part thereof is covered before it has been regularly inspected, tested and approved as prescribed in this article, such system or part thereof shall be uncovered upon the direction of the superintendent.

e. If the inspection or test shows any defects, such defects shall be corrected and such inspection and tests shall be repeated until the superintendent is satisfied with the results of such inspection or tests.

f. When the plumbing system has been satisfactorily completed and finally tested, a certificate of approval shall be issued by the superintendent to the plumber.

(14.12.2.1). §C26-1322.0 Methods of Testing Plumbing Systems.-

a. Duration of Plumbing System Tests.-Tests shall be applied for a length of time sufficient to permit a thorough inspection.

(14.12.2.2). b. Water Test.-

1. The water test shall be applied to every party of the entire sanitary drainage, venting and storm water drainage systems. Each system may be tested in its entirety or in sections. All openings in the piping shall be tightly closed.

2. If a single test is to be applied to the entire system, such system shall be filled with water to the point of overflow above the roof.

3. If the system is tested in sections, each opening, except the highest opening of the section being tested, shall be tightly plugged and each section shall be filled with water; but every section shall be tested with at least a ten-foot head of water. In testing successive sections, at least the upper ten feet of the next lower section shall be retested,

so that every joint or pipe in the structure, except the uppermost ten feet of the system, shall have been subjected to a test of at least a ten-foot head of water.

(14.12.2.3). c. Air Test.-An air test in lieu of a water test shall be accepted only when express permission is obtained from the superintendent. When such a test is permitted, all parts of the plumbing piping shall be tested to a pressure of five pounds of air per square inch and shall be proved tight under such pressure.

(14.12.2.4). d. Smoke Test.-Fixture, leader, drain and house traps shall be filled with water, and a thick, penetrating smoke, produced by one or more approved smoke machines, shall be introduced into the entire system. As the smoke appears at the stack openings on the roof, such openings shall be tightly closed and a pressure equivalent to a one-inch water column shall be applied.

Sub-Article 13. Gas Piping

(14.13.1). §C26-1323.0 General Provisions for Gas Piping.-Gas supply and distribution pipes shall be made of suitable material. Such pipes shall have tight joints. When the gas piping system is completed, it shall be tested in accordance with the rules of the board.

(14.13.2). §C26-1324.0 Gas Service Connection.-

a. Each and every gas service connection which is hereafter brought into a structure shall be fitted with an approved lubrication type shut-off stopcock or shut-off valve or equivalent so designed and constructed as to preclude the core from being blown out by the pressure of the gas in such pipe. Such stopcock or shut-off valve shall be placed in an accessible position immediately inside of the wall through which such connection enters and on the street side of the gas meter and of the gas regulator, if any. Each such existing gas service connection carrying gas at a pressure in excess of one pound per square inch and not now provided with such type stopcock or shut-off valve shall be so equipped before July 1, 1948. Each and every gas service connection which is hereafter installed through a building wall, shall be protected with a suitable wall sleeve which shall extend at least four inches beyond the outer side of the wall and at least one inch beyond the inner side of the wall and which shall be sealed at both ends to prevent the entry of water.

b. In all high pressure areas, the gas company concerned shall at least once each and every year, inspect the stopcock or shut-off valves to insure that they are all in good working order and ready for immediate use.

c. All materials used in the installation of stopcock or shut-off valves shall be approved by the commissioner. All matters in relation to stopcock or shut-off valves not covered by this section shall be determined by the Commissioner.

d. No gas service shall enter a structure constructed on or after the first day of July nineteen hundred forty-nine at a horizontal distance of less than ten feet from the cellar termination of a stairway nor shall any gas meters or gas pressure regulators be located at a lesser distance from such stairway termination, except that, where the width of the building is such that the required ten feet distance cannot be obtained, gas services, meters and regulators (where required) shall be at the maximum distance practicable from such stairway termination.

e. Any requirements of this section shall be in addition to, and not in substitution for, any other requirements prescribed by existing laws or regulations.

f. Any person or persons who shall violate any of the provisions of this section, upon conviction thereof, shall be punishable by a fine of not more than $500, or imprisonment for sixty (60) days, or both.

(14.13.2.1). §C26-1324.1 Gas Regulator and Gas Regulator Vent Outlets.-Each and every existing or hereafter installed gas service connection supplying gas into any building or premises at a pressure in excess of one pound to the square inch shall be provided with a device which will reduce the pressure of such gas prior to entering the meter in the said building or premises to not more than one-half pound per square inch, except that the commissioner may permit a higher pressure for commercial or industrial use. Each such device or regulator shall be provided with a ventilating pipe which shall lead directly to the outer air, and said outlet, where practicable, shall not be located under a window or any opening leading back into the premises. It shall be unlawful for any person to cover over, plug up or otherwise obstruct any gas regulator vent outlet. A gas vent identified by suitable marking shall be attached to the outlet on the outside of the building.

(14.13.2.2). §C26-1324.2 Outside Gas Cut-off.-

a. Hereafter it shall be unlawful to convey manufactured, mixed or natural gas at a pressure in excess of one pound to the square inch into any building, place or premises through a pipe or conduit hereafter constructed unless a cut-off valve or cock and housing assembly of a type approved by the commissioner is installed in such pipe or conduit outside of the building.

b. Each such cut-off valve or cock shall be installed in an approved protective housing. A cover, securely fastened and easily identifiable, shall be provided for the housing. Such cover shall be flush with the surface of the ground and kept in the clear at all times so as to be accessible for immediate use. If a building, place or premises is supplied directly from a gas main in a public street and the curb valve or cock required by section 734 (5)-1.1 of the code is within one hundred feet of the building, the requirements of this section shall be construed as being satisfied.

c. Such cut-off valve or cock shall be capable of being readily operated by removing the cover of the housing and inserting a portable key over the operating nut of the valve or cock.

(14.13.3). §C26-1325.0 Gas Meter Location.-Meters shall be located as near as practicable to the point of entrance of the service and, where possible, such meters shall be located in the cellar or basement, except by special permission from the superintendent. The meter locations shall be clean, dry and free from steam or chemical fumes. Such meters shall be protected against extreme cold or heat, shall be properly ventilated, and shall be readily accessible for reading and inspection.

(14.13.4). §C26-1336.0 Gas Pipe.-All steel gas pipes hereafter installed shall conform to the standard specifications of the A.S.T.M Designation, A-53-47, A-120-47, A-135-46, or A-139-46. Wrought iron pipes shall conform to the standard specifications of A.S.T.M. Designation, A72-45; cast iron pipes to A.S.T.M. Designation, A-44-41; copper pipes to A.S.T.M. Designation B-42-49; brass pipes to A.S.T.M. Designation, B-43-49. Piping shall be at least 3/8-inch in diameter. Cast iron pipe shall be permitted only in underground installations outside of any structure.

(14.13.5). §C26-1327.0 Gas Pipe Fittings.-Fittings hereafter installed shall be malleable iron, steel or brass and shall be either screwed or welded type or flanged type with approved type gasket. Right and left couplings may be used. Ground joint unions and approved type compression couplings may be used on gas piping from the gas service stopcock or valve to and including the gas meter outlet. Ground joint unions may be used also between an appliance shut-off valve or stopcock and the appliance. Approved type compression couplings may be used on gas piping buried outside of buildings. It shall be unlawful to use gasketed unions or running

threads. Any flexible range connector, or other fitting, approved by the board of standards and appeals may be used. Nothing in this section shall be construed as prohibiting the installation and use of any type of fitting approved by the board for use between the point at which a gas service enters the structure and the meter to which the service connects when installed by persons or corporations subject to the jurisdiction of the public service commission of the state of New York.

(14.13.6). §C26-1328.0 Gas Pipe Stopcocks and Valves.-Stopcocks and valves hereafter installed shall be of approved types. Stopcocks and valves shall be tight. The stopcocks on branches shall be provided with "T" handles and shall be capable of being operated by the building occupants.

(14.13.7). §C26-1329.0 Installation of Gas Piping.-

a. All pipes shall be run straight without sags or traps and shall be so pitched as to drain back to the riser and from the riser to the meter. Drops shall be secured with at least one solid metal strap.

b. A drip pocket consisting of a nipple screwed into the bottom of each riser and provided with a cap shall be installed at the back of each gas riser and at all lower points of the gas distribution system.

c. Gas piping outside a structure hereafter installed shall be installed not less than two feet below ground. In a case where exact compliance with this rule would be unusually difficult, the superintendent may permit a modification, provided the piping is otherwise adequately protected. Any piping which is exposed to outdoor temperatures or installed underground with a cover of less than two feet, shall be protected against frost. Where piping is laid in concrete, such piping shall be coated with a preservative paint. Where corrosive conditions exist, the pipe shall be protected in an approved manner.

d. Branch outlet pipes shall be taken from the top or sides of the horizontal lines and not from the bottom.

(14.13.8). §C26-1330.0 Gas Pipe Outlets.-Outlets from concealed piping shall extend one inch through the finished ceiling or wall. Either the outlet fitting or the pipe shall be securely fastened to the wall or stud. All outlets shall be capped until the fixtures are attached.

(14.13.9). §C26-1331.0 Gas Pipe Sizes.-Piping systems shall be so proportioned as to give an adequate volumetric flow of gas to all lighting, cooking and heating fixtures or appliances which are supplied or intended to be supplied from the piping system.

(14.13.10). §C26-1332.0 Gas Range Outlets and Stopcocks.-The minimum diameter of outlets for gas ranges shall be three-quarters of an inch. All gas ranges and heaters shall have a straightway stopcock or valve on each branch supply to such devices.

(14.13.11). §C26-1333.0 Gas Brackets and Fixtures.-

a. Gas brackets and fixtures shall be so placed that the burners are a minimum of three feet below any ceiling or woodwork, except that where proper protection is furnished by a shield, the distance may be eighteen inches or more.

b. It shall be unlawful to use swinging or folding gas brackets.

c. Gas brackets on any lath and plaster partition or on any woodwork shall be at least five inches in length, measured from the burner to the plastered surface or woodwork.

(14.13.12). §C26-1334.0 Test of Gas· Piping.-After all house piping is installed, the plumber shall make air pressure tests on the house piping and the service piping be has installed. When such piping is installed to operate with a gas pressure of one pound per square inch or less, the test pressure shall be equal to a column of mercury six inches in height. When such piping is

installed to operate at pressures in excess of one pound per square inch, the test pressure shall be at least ten pounds per square inch higher than the maximum expected pressure. The maximum expected pressure on the gas service piping installed by the plumber shall be obtained from the utility company serving the area, and the maximum expected pressure on the house piping from the owner of the building. The required test pressures shall be maintained for at least ten minutes and tests shall be performed in the presence of an inspector of the department. It shall be unlawful to cover any piping, or connection to such piping of any meter, or gas appliance until it has been satisfactorily tested as prescribed above. Nothing in this section shall be construed as requiring a plumber to test any piping installed by persons or corporations subject to the jurisdiction of the public service commission of the state of New York.

(14.13.13). §C26-1335.0 Establishing Gas Supply.-It shall be unlawful for any utility company to supply gas to any building, place or premises in which new meters, other than replacements are required until a certificate of approval of the gas installation from the department is filed with such utility company. Said certificate shall be issued only when the gas piping complies with all applicable provisions of this chapter.