

233. The house-drain shall not be less than four inches in diameter and the fall to the sewer connection shall not be less than one-quarter of an inch to the foot throughout its entire length. It shall be laid in a trench cut to a uniform grade, or, within the external walls of the house, if by reason of impracticability of grade in that situation, it may be suspended from the floor beams by iron or steel hangers.

Said house-drain must extend at least five feet outside the external wall of the house before being connected with the sewer connection and no house shall be built over the sewer connection.

Where it is necessary to carry any soil or waste pipe beneath the floor of a basement or cellar which is provided with a concrete, brick or other permanent floor, such pipe shall be placed so as to be accessible at all clean-outs. In no case shall a soil or waste pipe be completely concreted over or in any way made not readily accessible.

The house-drain shall be extended, undiminished in calibre and unchanged in quality of material, up through the house as near vertical as possible throughout its upward course as the soil pipe or stack, and then as the ventilating pipe to such a point above the roof as is hereinafter provided.

The house-drain, the vertical soil pipe or stack the ventilating pipe and all branch pipes or fittings directly connected therewith shall be constructed of either cast iron, galvanized wrought iron or brass, of quality as hereinafter provided, except where especially stated differently.

234. A house or running trap shall be installed in the house-drain as near as possible to the point where the house-drain leaves the cellar or enters the external wall of the house, and no connection shall be made to the house-drain between the said trap and the sewer. Such trap shall be of a form and variety approved by the plumbing inspector concerned, and shall correspond in weight of metal and quality to that of the house-drain in question. It shall at no point be less than four inches in calibre, and shall be provided with a suitable clean-out which shall be constructed according to these regulations. House-traps, must in all cases, be readily accessible, so as to be easily cleaned and when situated beneath the cellar floor, shall be placed in a substantial box or man-hole with a suitable cover.

235. A ventilating pipe or fresh air inlet shall connect to the house-drain by means of T, Y or other such connection at a point back, as far as practicable on the house side of the house or running trap. In no case shall said fresh air inlet be connected directly over the trap (to guard against frost). Said inlet shall be extended from its point of connection to the house-drain to outside the external wall of the house, to a point eighteen inches, if practicable, above the surface of the ground and not less, if practicable, in the opinion of the plumbing inspector than fifteen feet from any window, door or other opening in the house. It shall be provided at its open end with a cap or cowl giving an open area one-fourth more than the area of the pipe, or it shall be provided with a return bend. It shall be of the same material as the house-drain, and never less than four inches in diameter when the house drain is four inches and shall be larger with larger house-drain at the direction of the plumbing inspector.

236. A clean-out shall be placed on the house-drain as close as possible to the point where it leaves the house and on the sewer side of the house trap. Clean-outs shall be formed by means of a full Y as directed by the plumbing inspector, and shall, when necessary, be extended without change of direction, or surrounded by a proper manhole, so as to be readily accessible.

Clean-outs shall be provided at the foot of each stack, and at all decided changes in direction, and must in all cases be readily accessible.

The clean-outs on the house-traps, house-drains and stacks shall be of the full diameter of the traps, drains and stacks on which they are placed, except where said traps, drains and stacks are more than four inches in calibre, in which cases the clean-outs shall not be less than four inches in calibre. Clean-outs fitted on cast-iron pipes shall be leaded and caulked into hubs and never into a plain piece of pipe.

All caps or covers on clean-outs shall be of brass not less than one-eighth inch in thickness and shall have a solid square or hexagonal nut on top of cap; they shall

be screwed and made air-tight by means of a suitable gasket; the bodies of the clean-outs shall be of brass or iron.

237. The arrangement of drain, soil, waste and vent pipe shall be as direct as possible. All changes in direction in horizontal pipes shall be made with full Y branches and eighth or sixteenth bends, and shall have a clean-out in the end of the Y branch. T Y's may be used on vertical soil and waste lines when it is impossible or impracticable to use a Y branch, but they shall not be used on horizontal lines. Quarter bends may be used on the vent system, fresh air inlet, rain-water leaders or on floor or yard drains. T's may be used on the vent system and in taking off the fresh-air inlet from the house-drain.

No connection to any iron drain, soil or vent pipe shall be made by boring or tapping the pipe, or by a saddle. No inverted joints nor double hubs nor heel connections shall be used on soil or waste pipes below the fixtures.

All fittings shall correspond in weight and quality with the pipes to which they are attached. Special fittings approved of by the plumbing inspector may be used in any part of the system.

238. The diameters of soil and waste pipes shall not be less than these given in the following table:

Pipes:	Calibre, inches
Main soil pipes .....	4
Branch soil pipes .....	4
Main waste-pipes (except slop wastes) baths and laundry tubs .....	2
Tubs set in ranges of three or more .....	2
Branch waste-pipes for basins and refrigerators ....	1½
Branch waste-pipes for all other fixtures .....	1½
Branch waste-pipes for slop sinks .....	3

In large buildings, or where batteries of fixtures are used the size of the pipes shall be determined by the plumbing inspector, the sizes in the foregoing table being minimum.

239. All main waste pipes shall be constructed of cast iron or brass piping. Branch waste pipes when not laid horizontally and when not over ten feet long, may be constructed of lead. Horizontal waste pipes when not over six feet long may be constructed of lead. Brass and cast iron pipes shall be used on all waste pipes when possible.

240. All vertical pipes, and stacks shall be securely supported at their base. All horizontal hanging cast iron pipes shall be supported at intervals of not more than five feet by sufficient wrought iron or steel pipe hangers or brick or cement piers. All horizontal lead pipes shall have continuous support throughout their entire length.

241. All soil, waste and ventilating pipes shall be located inside the house and all terminals of such pipes shall be located not less than twelve feet distant from and three feet above any opening, door or window in that, or any adjoining house existing at the date of the issuance of the permit; all pipe terminals shall project above the roof at least two feet.

On houses the roofs of which are used for drying purposes the stack shall be extended seven feet above the roof and shall be adequately braced. The portion of all pipe terminals above the roof shall have a hub and shall, where it goes through the roof, be flashed with 5 lb. sheet lead, or by other method approved by the plumbing inspector so as to be made thoroughly water-tight.

242. Except when hereinafter specified, the waste pipe of every independent fixture shall be furnished with a separate trap which shall be placed as near as practicable to the fixture which it serves and never more than two feet therefrom.

All sinks shall have separate self-cleansing traps; a wash-basin and one bath-tub may be connected to the house-drain through one four inch drum or pitcher trap, when said drum or pitcher trap is not over three and a half feet from the nearest outlet of the fixtures. The like conditions apply to a set of wash-tubs. Not more than four wash-basins in a continuous line may be connected to the house-drain through one four inch drum or pitcher trap.

There shall be only one trap in connection with one closet which trap shall be incorporated with the closet bowl.

All traps must have at least one and a half inch water seal and be set true to their level. Traps shall not be less than the size of the waste pipe to which they are attached and shall be adequately supported.

Vent horns on traps are prohibited. All traps except earthenware traps shall have water-tight clean-outs, and shall be located so as to be easily accessible. Special forms of traps, however, not provided with clean-outs, but easily cleaned, may be installed at the discretion of the plumbing inspector. Drum traps, except wherein specified, may be placed beneath the floor when the clean-out of such trap is flush with the floor. No form of S or goose-neck trap shall be placed beneath the floor. Bell traps, defective traps and all other traps other than drum or pitcher traps in connection with fixtures, not self-cleaning, are prohibited.

Traps for special use, such as grease, sand or other like traps shall be installed under the supervision of the plumbing inspector, should such be called for or permitted by the regulations of any sub-district board.

243. No waste pipe from any refrigerator, cold storage or other receptacle in which food stuffs are kept or stored shall be directly connected with any drain, soil or waste pipe, but such waste pipes shall discharge in an open water supplied fixture or floor drain properly trapped. Refrigerator wastes shall be trapped separately and so arranged as to admit of frequent flushing and shall be as short as possible. Where two or more refrigerator waste pipes are connected together, or to a stack, said waste pipe or stack shall be extended through the roof for ventilation.

Waste pipes from soda water fountains and the like, and from safes under fixtures and overflow pipes from tanks, shall not connect directly with any drains, soil or waste pipe, but shall discharge into an open fixture properly trapped.

244. All traps which in the opinion of the plumbing inspector are liable to syphonage shall be protected from syphonage by anti-syphon or vent pipes. All vent pipes shall be constructed of brass cast iron or galvanized wrought iron, though lead pipe may be used for distances not greater than ten feet, in which case it must be exposed to view. Vent pipes shall be of not less calibre than the traps which they serve. They shall enter the waste pipe within eighteen inches of the trap.

Vent pipes for water-closets shall be connected to the highest point of the bend or the hub to which the bend connects and must be at least two inches in diameter. Vent pipes for not more than three closets and less than thirty feet in length, need not be greater than two inches in diameter. If for more than three closets or more than thirty feet in length they shall be of three inch bore.

All vent pipes shall run as direct as is practicable and if one and a half inches in diameter they shall not exceed thirty feet in length. All offsets in ventilating pipes shall, when practicable, be made at an angle of not less than 45 degrees to the horizontal.

Branch ventilating pipes shall be kept above the top of all fixtures connected therewith, and be constructed in such manner as to prevent the use thereof as soil and wastepipes. All vents to the main stack shall be connected above the highest fixture.

Vent terminals through the roof shall be constructed according to regulation 242, and shall be increased at least one inch in diameter going through the roof. Two or more vent pipes may be connected into or with a main vent, but in every such case such main vent must be increased one inch or more, according as the plumbing inspector may direct. Vent piping shall be run whenever practicable, on the continuous or loop vent system.

The trap for the upper fixture on a line of soil or waste pipe, if within five feet of the stack in a horizontal line, shall not require a special vent pipe, unless the outlet is branched into a stack more than eighteen inches below the top water line of the trap. Two water-closets, when branched into a double Y branch or only one water closet on a stack when within five feet of the stack require no special vent pipe.

245. Weight and quality of piping. All cast iron pipes and fittings shall be sound cylindrical and smooth, free from cracks, sand holes or other defects, and of a uniform thickness. Pipes, including the hubs, shall not weigh less than the following specified weights per linear foot: Diameter of pipe. Weight per linear foot

2 inches .....	4 lbs.
3 inches .....	6 lbs.
4 inches .....	9 lbs.
5 inches .....	12 lbs.
6 inches .....	15 lbs.