Appended to G.N. 238/1938

[2]LICENSED PLUMBERS RULES

(SECTION 39)

[Commencement 27th August, 1939]

PART I
GENERAL

Short title.

1. These Rules may be cited as the Licensed Plumbers Rules.

Interpretation.

2. In these Rules, unless the context otherwise requires —

"licensed plumber" means a person licensed as a plumber under the provisions of section 18 of the Act;

"Minister" means the Minister responsible for water and sewerage.

Plumbers to comply with Rules.

3. In carrying out any work for which a licensed plumber is licensed under the provisions of the Act he shall comply with the requirements of these Rules.

Water supply and pressure.

4. (1) In no premises intended for human habitation or occupation in which there is an existing supply of pure water shall the latter be connected with any impure water supply, or cross connected by means of any plumbing fixture to the drainage system.

(2) Every building intended for human habitation in which there is either any existing water closet or other plumbing fixture shall be provided with a supply of water adequate in volume and pressure to flush such water closet or other plumbing fixture; and any pipe conveying water to such water closet shall be of sufficient size to supply water at a rate required for adequate flushing without unduly reducing the pressure at any other fixture.

[2] Made under section 35 of the Water and Sewerage Act, 1933, (No 7 of 1933) and continued in force by section 41 of the Water and Sewerage Act, 1976 (No. 6 of 1976).

Location of fixtures.

5. No trapped plumbing fixture shall be installed in any room which does not contain a window placed in an external wall or which is not otherwise provided with adequate ventilation.

Rain water.

6. No gutter, pipe, conduit or other contrivance for conveying rain water shall be led into any house drain leading to the main sewer.

Relief valve for hot water.

7. Every device for heating water and storing it in boilers, or tanks, shall be so designed and installed as to prevent any damage from explosion or any back flaw of hot water through any meter connected with the public water supply.

Multiple dwellings.

8. One private water closet at least shall be installed for each family in multiple dwellings provided with a house drainage system.

Design of drainage system.

9. The entire house drainage system shall be so designed, constructed and maintained, as to conduct the waste water or sewerage quickly from the fixture to the place of disposal with velocities which will guard against fouling and the deposit of solids, and which will prevent clogging.

Independent system.

10. Every drainage and plumbing system in respect of any new building or of any new work to be installed in any existing building shall be independent of and separate from that of any other building, and every building shall have an independent connection with a public or private sewer whenever connection with any such sewer shall be practicable:

Provided nevertheless that, when any building is situate in the rear of any other building on an interior lot, and, for the purpose of connection with a drainage system, no private sewer is available, or can be constructed through any alley, court yard, or driveway, to the rear building, the house drain from the front building may be extended to the rear building and the whole shall be deemed to be one house drain.

PART II
HOUSE SEWERS, AND MAIN SOIL OR WASTE PIPES

Street sewer connection.

11. Every house sewer shall be connected with the street sewer at an angle of forty-five degrees; and in any case where there is no existing connection the junction shall be effected by the Minister at the expense of the owner of the premises in which such house sewer is to be installed.

Slope of horizontal connection.

12. Every horizontal pipe shall be run in practical alignment and at a uniform grade of not less than one-eighth of an inch per foot, and shall be supported or anchored at intervals which shall not exceed ten feet. Every stack shall be supported at its base; and every pipe shall be rigidly secured.

Change in direction.

13. Every change in direction shall be made by the appropriate use of 45 Wyes, half Wyes, long sweep bends, sixth, eight or sixteenth bends:

Provided that on vertical stacks single sanitary tees, and in soil and waste lines where the change in direction of flow is from the horizontal to the vertical, short quarter bends may be used. Tees and crosses may be used in vent pipes only.

Fixtures prohibited.

14. No double hub, double tee, or double sanitary tee branch shall be used on soil or waste lines. The drilling and tapping of house drains, soil, waste, or vent pipes, and the use of saddle hubs and bands is prohibited.

Protection of pipes.

15. Every pipe passing under or through any wall shall be protected from breakage; and every pipe passing under or through cinder, concrete or other corrosive material shall be protected against external corrosion.

Open trench work.

16. Every excavation required to be made within the walls of a building for the installation of any house drainage system, or any part thereof, shall be open trench work, and all such trench work shall be kept open until the piping has been inspected, tested and approved.

Materials of house sewer.

17. A house sewer shall —

(a) from any street sewer to a point five feet outside the inner face of the wall of the building, be made of cast iron or vitrified clay piping;

(b) from a point of five feet outside the inner face of the wall of the building and inside of the wall of the building, be made of cast iron;

(c) when above ground, be of cast iron, galvanised wrought iron or steel, lead or brass, approved standards.

Size of drains, sewers, etc.

18. The size of every sanitary house drain, sanitary house sewer, and horizontal branch shall be determined on the basis of the total number of fixture units drained by them in accordance with the following table:

MAXIMUM NUMBER OF FIXTURE UNITS AS HEREINAFTER DEFINED (SANITARY SYSTEM ONLY)

GRADE

Dia. of pipe.	1/8 in. to ft.	¼ in. to ft.	½ in. to ft.
1¼ ins.	1	1	1
1½ ins.	2	2	3
2 ins.	5	6	8
3 ins.	15	18	21
4 ins.	84	96	114
5 ins.	162	216	264
6 ins.	300	450	600
8 ins.	990	1392	2220
9 ins.	1350	1900	3100
10 ins.	1800	2520	3900
12 ins.	3084	4320	6912

Provided that —

(a) the minimum diameter for a sanitary house sewer shall be four inches;

(b) no water closet shall discharge into a drain pipe less than four inches in diameter;

(c) not more than two water closets shall discharge into four inch horizontal branch, house drain or sewer.

Fixture equivalents shall be determined on the rate of discharge from a lavatory as the unit in accordance with the following table —

Fixture	Units.
One lavatory or washbasin	1
One kitchen sink	11½
One bathtub	12
One laundry tray	13
One combination fixture	13
One urinal	13
One shower bath	13
One floor drain	13
One slop sink	14
One water closet	16
One bathroom group consisting of 1 water closet, 1 lavatory and 1 bathtub and overhead shower; or 1 water closet, 1 lavatory and 1 shower compartment	18

Pipe clean-outs.

19. (1) There shall be provided at the foot of every vertical waste or soil stack, a clean-out which shall be easily accessible; and in every house drain there shall be provided two clean-outs at least, one of which shall be at or near the base of the stack, and the other with full size Wye branch, shall be inside the wall near the connection between the house drain and the house sewer.

(2) Every clean-out which shall be at or near the base of the stack shall be of the same nominal size as pipes up to and including four inches in diameter, and in the case of pipes exceeding four inches to be not less than four inches in diameter.

(3) Every horizontal soil pipe shall have at least one clean-out in every fifty feet of length.

Heights of soil or waste stack and vent.

20. Every soil or waste stack and every vent shall extend, without diminution of size, upwards through the roof as direct as possible for at least one foot above the roof, and shall be free from sharp bends or turns:

Provided that where the terminal is within twelve feet of any door, window, scuttle, air shaft or other aperture such extension shall be at least three feet above in highest point thereof:

Provided further that where the roof is used for purposes other than weather protection such extension shall be at least five feet above the roof.

Size of soil or waste stack.

21. Every soil or waste stack shall be of size to be determined by the total number of fixture units as set out in rule 18 hereof, and shall not be less than four inches if a water closet discharges into it.

Replacement of soil waste stack.

22. Wherever in any existing building the sail or waste stack or vent pipe does not extend undiminished through or above the roof, or where there is a sheet metal soil or waste vent pipe, a soil or waste vent pipe of the size and material prescribed by rules 17, 18 and 20 shall be installed in place thereof.

PART III
VENT PIPES

Vent pipe design and size.

23. (1) Every house drainage system shall be so designed as to admit of an adequate circulation of air in all pipes, which shall be assured by means of soil or waste stack vent, or a continuous waste or soil vent, or a loop or circuit vent; but no crown vent shall be installed; nor shall there be any danger of syphonage, aspiration or forcing of trap seals under ordinary use.

(2) Every main vent pipe shall be of a size as described in rules 20 and 21, and every branch vent pipe shall be not less than half the diameter of the soil or waste pipe with a minimum size of one and one-half inches.

Main vent to connect to all traps.

24. Every trap shall be connected with a vent pipe which shall extend above the roof in the manner prescribed in rule 20 hereof; or which shall be connected to the main soil pipe not less than three feet above the highest entrance to the main sail pipe of any fixture.

Distance of vent from trap seal.

25. No trap shall be placed more than five feet horizontal developed length from its vent, and the distance shall be measured along the central line of the waste or soil pipe from the vertical inlet of the trap to the vent opening (except for water-closets and similar fixtures); and the vent opening from the waste or soil nine shall not he below the dip of the trap.

Vent pipe levels.

26. (1) Every vent and branch vent pipe shall be free from drops or sags and be so graded and connected as to drip back to the soil or waste pipe by gravity.

(2) Where any vent pipe connects with horizontal soil or waste pipe, the vent branch shall be taken off above the centre line of the pipe, and the vent must rise vertically or at an angle of forty-five degrees to the vertical to a point six inches above the fixture it is venting before offsetting horizontally or connecting to the branch, main waste, or soil vent.

Circuit or loop vents.

27. It shall not be lawful to install any circuit or loop vent without the permission of the Department, and unless proper plans in connection therewith have been submitted.

PART IV
FIXTURES, TRAPS, ETC.

Prohibited traps.

28. No fixture shall be double-trapped, and no form of trap which depends for its seal upon the action of movable parts or concealed interior partitions shall be used in respect of any fixture; nor shall the waste from any bathtub or other fixture discharge into any water closet trap.

Kinds of traps.

29. (1) Every fixture shall be separately trapped by an accessible, self scouring water seal trap placed as near to the fixture as practicable:

Provided that —

(a) a group of not more than three laundry trays or lavatories or wash basins, or a group of two laundry trays and one sink, may be connected with a single trap; and

(b) the trap is placed centrally; and

(c) the branches connect with the trap seal at an angle of not more than sixty degrees to the vertical arm.

(2) Every fixture trap shall have a water seal of not less than two inches and not more than four inches.

Prohibited connections with drainage system.

30. No refrigerator, ice box, or receptacle for storing food shall be connected directly or indirectly with the drainage system.

Size of traps and waste branch.

31. For any fixture the minimum size (nominal inside diameter) of trap and waste branch shall be not less than that shown in the following table —

Kind of Fixture	Size in inches trap and branch
Bathtubs	1½
Baths, shower, stall	2
Baths, sitz	1½
Baths,foot	1½
Bidets	1½
Combination fixtures	1½
Drinking fountains	1¼
Fountain cuspidors	1½
Sinks, hotel or public	2
Sinks, large hotel or public	2
Sinks, small, pantry or bar	1½
Sinks, dishwasher	1½
Sinks, slop with trap combined	3
Floor drains	2 to 4
Laundry trays	1½
Sinks, kitchen residence	1½
Sinks, slop ordinary	
Urinals, lip	2
Urinals, troughs	2
Urinal, pedestal	3
Urinal, stall	2
Wash basins	1½
Water-closet	3

Clean-outs.

32. Every trap, except those in combination with fixtures in which the trap seal is plainly visible and accessible, shall be provided with an accessible brass trap screw of an ample size, protected by a water seal.

Trap level and protection.

33. Every trap shall be set true with respect to the water seal, and protected from evaporation.

Manholes.

34. Every interior underground trap and clean-out, except where such clean-out is flush with the floor, and every exterior underground trap shall be made accessible by boxes with proper covers.

Clean-out equivalents.

35. Every floor or wall connection of any fixture trap if bolted or screwed to the floor or wall shall be regarded as a clean-out.

Grease traps.

36. In any hotel or restaurant there shall be installed a grease trap which shall be placed as near as practicable to the fixture from which it receives the discharge, not exceeding twenty feet in distance from the said fixture. Such grease trap shall have twice the capacity of the discharge and in no ease be less than eighteen inches in diameter.

Basement floor drains.

37. Every cellar or basement floor drain shall connect into a trap so constructed that it can be readily cleaned and of a size to serve efficiently the purpose for which it is intended; and when subject to back flow or back pressure, such drain shall be equipped with an adequate back-water valve; and the drain inlet shall be so located that it is all times in full view.

Drains below street sewer level.

38. In every building in which the whole or part of the house drainage and plumbing system lie below the crown level of the main sewer, sewage or house waste shall be lifted by approved artificial means and discharged into the house sewer.

Manner of installation.

39. Every plumbing fixture shall be installed in such manner as to afford access for cleaning; and every pipe from any fixture shall be run to the wall, and no lead trap or pipe shall extend nearer to the floor than twelve inches unless protected by casing.

Back-water valves.

40. When any house-drainage system is subject to back flow of sewerage, suitable provision shall be made to prevent overflow into the building by means of a back-water valve.

PART V
MATERIALS

Quality of materials.

41. Every plumbing fixture or fitting shall be free from defects and shall be made of smooth non-absorbent material, free from concealed fouling surfaces, and set free of inclosures.

Design and construction.

42. Every drainage pipe shall be so designed and constructed, having regard to the reasonable duration of the building in which such pipe is to be installed, as to be unaffected by settlement or vibration of the ground or building, temperature changes or other causes, and shall be free from defective material, imperfect connection or liability to corrosion which would cause leakage of water or drain air.

Cast-iron pipes to be coated.

43. Every cast-iron pipe or fitting for underground use shall be coated with asphaltum or coal tar pitch.

Weights of lead pipe.

44. Every lead pipe including bends and traps shall be of best quality drawn pipe, of not less weight per linear foot than shown in the following table —

Internal diameter inches	Weights per foot lbs.	ozs.
1	2	–
1¼	2	8
1½	3	8
2	4	–
3	4	12
4	6	–

Increasers and reducers.

45. Whenever any pipe or fitting is to be connected with any pipe or fitting of a different size, increasers or reducers of a corresponding size shall be used, and pitched at an angle of forty-five degrees.

Connections prohibited.

46. No fitting or connection shall be installed which has an enlargement, chamber, or recess with a ledge shoulder, or reduction of the pipe area in the direction of the flow on the outlet or drain side of any trap.

New materials.

47. It shall be lawful for the constructor to use material other than that specified in these Rules, provided that the same shall have been approved in writing by the Minister.

Traps.

48. Every trap to be installed in respect of any bathtub, lavatory, sink, and other similar fixture shall be made of lead, brass, cast-iron, or of malleable iron, galvanized or porcelain enamelled inside; and every galvanized or porcelain enamelled trap shall be extra heavy, and shall have a fullbore smooth interior waterway with threads tapped out of solid metal.

Pipe clean-outs.

49. (1) The body of every clean-out ferrule shall be made of standard pipe size, and shall conform in thickness to that required for pipes and fittings of the same metal, and shall extend not less than one-quarter inch above the hub.

(2) Every clean-out cap or plug shall be of heavy red brass not less than one-eighth inch thick and be provided with raised nut recessed socket for removal.

Back-water valves.

50. Every back-water valve shall have all bearing parts or balls of non-corrodible metal, and shall be so constructed as to insure a positive mechanical seal, and remain closed except when discharging wastes.

Water supply to fixtures.

51. (1) Every plumbing fixture shall be provided with a sufficient supply of water for flushing to keep it in a sanitary condition and every water closet or pedestal urinal shall be flushed by means of an approved tank or flush valve of at least six gallons flushing capacity for every water closet and at least two gallons for every urinal, and shall be adjusted to prevent the waste of water. Every flush pipe for any water closet flush tank shall be not less than two inches in diameter, and no water from any flush tank shall be used for any other purpose.

(2) No water closet or urinal bowl shall be supplied directly from a water supply system through a flushometer or other valve unless such valve is set above the water closet or urinal in such a manner as to prevent any possibility of polluting the water supply.

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

Relief valves.

52. Whenever a check valve is to be installed on the cold water supply pipe between the street main and the hot water tank, there shall be installed in the hot water distributing system a suitable relief valve.

Materials for water closets, etc.

53. Every receptacle used as a water closet, urinal or otherwise for the disposal of human excreta, shall be made of vitrified earthenware, hard natural stone, or cast-iron white enamelled on the inside.

Water closet bowls.

54. Every water closet bowl and trap shall be made in one piece and of such form as to hold a sufficient quantity of water when filled to the trap overflow to prevent fouling of surfaces, and shall be provided with Integral flushing rims constructed so as to flush the entire interior of the bowl.

Prohibited fixtures.

55. From and after the passing of these Rules, it shall not be lawful to install in any building designed or used for human habitation any —

(a) fixed wooden wash tray or sink;

(b) copper lined wooden bathtub;

(c) dry closet or chemical closet;

(d) long hopper closet, or similar appliance;

(e) pan and valve plunger, offset washout or other water closet having invisible seals or unventilated space, or walls not thoroughly washed at every flush.

Floor or shower drain.

56. Every floor drain or shower drain shall be considered a fixture and provided with a strainer.

Size of outlets.

57. Every fixture other than a water closet or a pedestal urinal shall be provided with an outlet area not less than that of the interior of the trap and waste pipe.

Fixture overflows.

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

Fixture connections.

59. Every soil and waste stack and branch shall be provided with correctly faced inlets for fixture connections.

PART VI
WORKMANSHIP

Inspection.

60. Workmanship shall be in conformity with the Rules hereinafter provided and shall be subject to the inspection and approval of the Minister or his delegate.

Gas and water tight joints.

61. Every joint and connection mentioned in these Rules shall be made permanently gas and water tight.

Joints in vitrified clay pipes.

62. (1) Every joint in any vitrified clay pipe or between any vitrified clay pipe and any metal pipe shall be made of oakum and one to one cement mortar.

(2) Every vitrified clay pipe in any street shall have not less than two feet cover over the top of the bell or faucet of such pipe, or if such cover cannot be obtained such pipe shall be covered with concrete, unless it shall be of cast iron, and, if the trench in which such pipe small be installed be cut through rock, such pipe shall be laid in a bed of sand not less than three inches in depth.

Caulked joints.

63. Every caulked joint shall be firmly packed with oakum and shall be secured only with pure lead, not less than one inch deep, well caulked. No paint, varnish or putty shall be permitted until such joint is tested.

Screwed joints.

64. Every screw joint shall be a standard screw joint, and the constructor shall remove all burrs or cuttings therefrom.

Cast iron joints.

65. Any cast iron joint may be either caulked or made with a screw joint in the approved manner.

Steel or brass and cast iron points.

66. Any joint between a steel or brass pipe and a cast iron pipe may be either screwed or caulked in the approved manner.

Lead pipe joints.

67. Every joint in any lead pipe or between any lead pipe and any brass ferrule, soldering nipple, or trap (in all cases on the sewer side of the trap and in concealed joints on the inlet side of the trap) shall be a full-wiped joint, with an exposed surface of the solder to each side of the joints of not less than three-quarters of an inch and a minimum thickness at the thickest part of the joint of not less than three-eights of an inch, except in the case of a bushing which may be wiped or iron soldered.

Lead pipe and cast iron or steel joints.

68. Any joint between a lead pipe and a cast iron or steel pipe shall be made by means of a caulking ferrule, soldering nipple or bushing.

Slip joints and unions.

69. It shall not be lawful to install any slip joint except in trap seals or on the inlet side of any trap; and every union on the sewer side of the trap shall be ground faced, and shall not be concealed or enclosed.

Roof joints.

70. Every joint between any pipe and any roof joint shall be made water-tight by the use of copper, lead or galvanized iron plates or flashings.

Floor connections for water closets, etc.

71. Every brass door connection shall be wiped or soldered to lead pipe; and every iron door connection shall be caulked or screwed to wrought iron pipe; and every floor connection bolted to a brass floor flange. For the purpose of making a tight joint an asbestos gasket or washer shall be used with putty.

PART VII
MAINTENANCE AND TESTING

Maintenance.

72. Every plumbing system shall be maintained in a sanitary condition, and every grease trap shall be emptied periodically.

Defective fixtures.

73. Every installed fixture which is found to be defective or to be in an insanitary condition shall be repaired, renovated, replaced or removed within thirty days upon written notice from the Minister.

Water test.

74. (1) The water test may be applied to the drainage in its entirety or in sections: when applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening above the roof and the system filled with water to the point of overflow above the roof.

(2) When the system is tested in sections, each opening shall be tightly plugged, except the highest opening of the section under test, and each section shall be filled water:

Provided that no section shall be tested with less than ten foot head of water.

(3) In testing successive sections at least the upper ten feet of the next preceding section shall be retested so that no joint or pipe in the building shall have been submitted to a test of less than a ten foot head of water.

(4) Under any test the water pressure shall remain constant for not less than fifteen minutes without any further addition of water.

Smoke test.

75. The smoke machine shall be connected to any suitable opening or outlet and an air pressure equivalent to one inch water column shall be applied and left standing at least fifteen minutes. If there is no leakage or forcing of trap seals indicated by the fluctuation of the drum, float, or water column, the system shall be deemed to be air-tight.

Peppermint test.

76. The system shall be tested for leakage by oil of peppermint.

Covering of work.

77. (1) No drainage or plumbing system or part thereof shall be covered until it has been inspected, tested and approved as herein prescribed.

(2) When any house drainage or plumbing system or part thereof is covered before being regularly inspected, tested and approved, as herein prescribed, it shall be uncovered upon the direction of the Minister.

(3) If inspection or test shows defect, such defective work or material shall be replaced within one week and inspection and test repeated.

Water main test.

78. Upon the completion of the entire water distribution system it shall be tested and proved tight under a water pressure not less than the maximum working pressure under which it is to be used.

Insanitary buildings.

79. When a building has been condemned as insanitary any alteration in the plumbing system shall be deemed to be new work.