CORPORATION OF THE DISTRICT OF BURNABY

BY-LAW NO. 542.

A BY-LAW to regulate the plumbing and sewerage of buildings.

WHEREAS it is deemed necessary for the preservation of public health of the Municipality of Burnaby, to establish regulations according to which plumbing in private and public buildings shall be done, made, constructed and completed, and to fix and determine the several materials to be used in plumbing;

The Municipal Council of the Corporation of the District of Burnaby in open meeting assembled hereby enacts as follows:

1. This By-law, for the purpose of convenience only, is divided into the following parts:

PART 1.

DEFINITIONS

2. In the construction and for the purpose of this By-law the following words and terms shall have the meanings hereby assigned to them unless repugnant to the context hereof.

(1) "Applicant" shall mean the person making application in writing for any permit hereunder, and also the person on whose behalf such application is made.

(2) "Basement storey" or "Basement" shall mean a storey, the floor of which is more than twelve (12) inches, but less than one-half the distance from floor to ceiling

of such storey, below the average level of the adjoining street, lane, or ground, at the completion of the building.

(3) "Branch" of any system of piping shall mean that part of the system which extends from the main at a slight grade, with or without lateral extensions or vertical arms, and which receives fixture outlets not directly connectable with the main.

(4) "Business of Plumbing" shall mean and include furnishing and fitting of any pipes and fixtures referred to in sub-section 17 hereof, and other sanitary and fire protection apparatus in or for any building within the Municipality.

(5) "Catch-basin" or "Sump Trap" shall mean any water-tight receptacle able to arrest the sediment or subsoil drainage before overflowing into a sewer or drain, and which is properly trapped to prevent the escape of sewer gas.

(6) "Cellar" shall mean any storey of a building that is more below the average level than herein specified to constitute a basement.

(7) "Cellar Drain" or "Basement Drain" shall mean that part of any drainage system which conveys the subsoil or ground water from the foot of walls, or below the cellar floor in any building, to a sump-trap or catch-basin connecting with the house sewer.

(8) "Municipality" shall mean the Municipality of Burnaby.

(9) "Conductor" or "Roof Leaders" shall mean a conveyer which carries the storm or rain water from the roof of any buildings to the surface or house drain.

(10) "Council" shall mean the Municipal Council of the District of Burnaby.

(11) "Fixture" shall mean and include any receptacle which receives house drainage or waste water, and every water-closet, sink, wash-basin, bath, or laundry tub, or any

water-supplied convenience which is directly connected with the plumbing and draining system in any building or premises.

DRAINAGE

(12) "House Drain" shall mean that part of the piping of the house drainage which receives the discharge of soil, waste, or drainage inside the walls of any building that conveys the same to the house sewer on the outside of the foundation walls of such building.

(13) "Main" of any system of horizontal, vertical, or continuous piping shall mean that part of such system which receives the discharge of back-vent or fixture outlets directly, or through the drainage pipes.

(14) "Minor Fixture" shall mean any fixture having a trap of two inches or less in diameter.

(15) "Owner," when used with reference to any of the prohibitions imposed by any of the provisions of this By-law upon any person, shall, in addition to any other meaning, be deemed to extend to and include any person in occupation or possession of, or entitled to, or having any interest in, or having land, premises, or property within the Municipality to which any provision of this By-law may apply, and shall include the agent of any such person.

(16) "Plumber" shall mean any person who does any work (as hereinafter defined) within the Municipality of Burnaby.

(17) "Plumbing System" and "Drainage System" shall mean and include any system or arrangements of one or more pipes and drains (including the fittings and appliances attached thereto or forming part thereof) in, upon or connected with any premises for conducting or carrying away rain, surface, waste, and soil water, or other waste from the premises to a main sewer, or septic tank, and for the ventilation of such pipes and drains, and for supplying such premises with water for a ll purposes.

(18) "Plumbing Inspector" or "Inspector" shall mean the person appointed from time to time by the Council, pursuant to the provisions of this or any other By-law for the purpose of inspecting and carrying out and enforcing the provisions of this By-law, and shall mean and include any assistant Plumbing Inspector.

(19) "Sewer" shall, in addition to its ordinary meaning, include any system of piping used to convey the drainage from any building site or premises to any main, public or private sewer.

(20) "House Sewer" or "House Connection" shall mean and include the sewer used to convey the drainage from the house drain to the main sewer or septic tank.

(21) "Main Sewer" shall mean and include any sewer in or under the control of the Corporation of Burnaby which is intended for public use.

(22) "Soil Pipe" shall mean any pipe which conveys the discharge of a water-closet, with or without other fixtures, to the house drain.

(23) "Size of Pipe" shall mean its internal diameter; and the "length" shall mean its developed length taken along the centre line.

(24) "Spacing" or "Distance" of fixtures from pipes shall mean the developed length of the branch waste line, measured between the centre line of the pipe and the seal of the fixture trap.

(25) "Stack" shall mean and include any vertical house drainage piping, inclusive of the main and its branches.

(26) "Surface Drain" shall mean that part of the piping and its branches which conveys the surface drainage from areas, courts, yards, or roof leaders, and which connects with the house sewer, directly or indirectly.

(27) (a) "Trap shall mean a fitting so constructed as to prevent the discharge of air or gas through the pipe without materially affec-

ting the flow of sewerage or waste water therein.

(b) "Seal of the Trap" shall mean the height of the water column measured between the point of overflow and the dip or division separating the inlet and outlet arms of the trap.

(28) (a) "Vent Pipe" shall mean any special pipe provided to ventilate the drainage and plumbing system and to prevent trap syphonage or back pressure, and which facilitates the flow of sewage by free admission of air.

(b) "Back Vent" shall mean that part of a vent-line which connects directly with an individual trap near the fixture, and which extends either to the main or branch vent-pipe.

(c) "Circuit Vent" shall mean a system of venting by which the ventilation is effected by extending the branch, soil, or waste-pipe to connect with an auxiliary main, which vent, in conjunction with the main soil or waste vent, shall complete and form a continuous air circuit or vent for each branch line so installed.

(d) "Continuous Vent" shall mean and include that method of venting in which the soil or waste-pipe, being continued vertically in a straight line, form the vent, the trap being vented through the waste fitting.

(e) "Loop Vent" shall mean a circuit vent where the branch or branches of soil or waste-pipes, belonging to a single floor having no other fixtures or branches installed above them, loops over above the flow line of the fixtures and reconnects with the main soil

or waste-vent lines.

(f) "Soil or Waste Vent" shall mean that part of the main soil or waste-pipe above the highest installed drainage or fixture outlet connection extending through the roof of any building.

(29) "Waste Pipe" shall mean any pipe which receives the discharge of any fixtures, except water-closets, and which conveys the same to the soil pipe or house drain;

(30) "Weeping Drain" or "Sub-soil drain" shall mean a drain of agricultural tile laid with open joints around the foundation of any building, either inside or outside, for the purpose of receiving sub-soil water.

(31) "Work" or "Works" shall mean the construction, reconstruction, installation, addition, repair or alteration of any plumbing or drainage system or fixture or of any portion of any such system.

PART II.

PERMITS AND FEES

PERMIT NECESSARY BEFORE COMMENCEMENT OF WORK.

3. No person shall do, or cause to be done, any work within the meaning of this By-law on any premises within the Municipality without having first obtained a permit from the Plumbing Inspector so to do, which permit shall at all times during the performance, or until the completion thereof, be posted in some conspicuous place in the building or premises wherein such work is being done or performed; provided, however, that no such permit shall be required for the removal of stoppage in soil or waste-pipes, if a clean-out has been inserted as provided in this By-law, or for replacing broken fixtures where such fixtures conform to the requirements of this By-law, or for replacing tanks or bibs, or for repairing leaks in waste or water pipes.

APPLICATION FOR PERMIT

4. Application for any such permit shall be made in writing by the plumber or other person employed to perform or execute such work in respect of which a permit is required. Such application shall be filed in the office of the Plumbing Inspector, and shall be in writing in the form of Schedule "A" to this By-law.

Such application shall be dated and shall state the nature of the work to be done, the purpose for which the building is to be used, the number and kind of fixtures to be installed, the exact situation and legal description of the premises where the work is to be done, including the street number, and also state the names and address of the owner or owners thereof, and of the plumber.

ISSUANCE OF PERMIT AND REFUSAL

5. When the application conforms to the provisions of this By-law and shall have been approved by the Plumbing Inspector, he shall issue a permit for the proposed work, which shall be dated of the day of issue. In the event of such application being refused, the Plumbing Inspector shall notify the applicant in writing, within two (2) days of date of such application, and shall give the reason for such refusal to issue a permit.

NEW PERMIT FOR ADDITIONAL WORK

6. When a permit has been issued for any work no additional work shall be installed or put in without the approval of the Plumbing Inspector in writing in respect thereof, and a new permit shall be taken out in respect of such additional work.

PLUMBER RESPONSIBLE FOR WORK UNDER PERMIT

7. Any plumber or other person obtaining a permit for any work to be performed within the Municipality shall be responsible for the proper execution of all such work done

or performed under such permit.

LAPSE OF PERMIT

8. If, and when a permit has been issued, the installation of house drain with branches and extensions therefrom ("roughing in") shall be started in respect thereof within thirty (30) days from the date of issuance of such permit; and the fixtures, as set forth in the said permit shall be installed within six (6) months from the date of the issuance of such permit, otherwise the permit issued in respect thereof shall lapse.

Provided also that if the work on any buildings cannot reasonably be completed within six months an extension of time will be granted. In all cases where the work has been closed down for six (6) months said permit shall lapse.

FEES

9. The fee or fees hereinafter specified shall be payable to the Municipal Treasurer by all applicants for permits, and the same shall be payable in advance:

For every fixture to be installed, or for which provision of waste or vent is made:

For the first one (1) to four (4) fixtures, three dollars ($3.00). For each succeeding fixture, seventy-five (75) cents per fixture. The charge of seventy-five (75) cents per fixture shall also apply to any work of remodelling or alteration; but no permit shall be issued for a less fee than one dollar ($1.00).

When permit is issued for sump alone a fee of two dollars and fifty cents ($2.50) shall be charged.

When work is found to be defective or not ready for inspection at the time specified in notice a further notice for inspection must be filed, together with a fee of one dollar ($1.00) to cover cost of extra inspection.

PART III.

ADMINISTRATIVE

APPOINTMENT OF PLUMBING INSPECTORS

10. (1) The Council may from time to time by resolution appoint a person to be Plumbing Inspector, and it shall be the duty of the Plumbing Inspector to carry out and enforce the provisions of this By-law.

(2) The Council may from time to time appoint by resolution any person or persons to be Assistant Plumbing Inspector or Inspectors, with like duties and powers as enjoyed and delegated to the Plumbing Inspector by the provisions of this By-law.

(3) The Plumbing Inspector and Assistant Plumbing Inspector or Inspectors shall at a ll times be subject to the control and direction of the Council.

11. (1) The Plumbing Inspector shall receive applications, examine and pass upon plans and specifications and issue permits for any work of plumbing as defined in this By-law.

(2) The Plumbing Inspector shall attend tests of all work and inspect or cause to be inspected, all plumbing work in course of installation, alteration or repair, subject to the provisions of this By-law.

12. (1) A Plumbing Inspector shall have the right of entry into any building or premises within the Municipality at all reasonable t imes for the purpose of ascertaining whether the regulations prescribed by and the provisions of this By-law are being or have been carried out or obeyed.

(2) Any p erson interfering or obstructing the entry of the Plumbing Inspector into any such building or premises situate within the Municipality, which said entry is made or attempted to be made pursuant to the provisions of this By-law, shall be deemed to be guilty of an infraction of the provisions of this By-law.

CONFORMITY WITH BY-LAW

13. No person shall do, or cause to be done, any work as defined in this By-law, on any premises within the Municipality without complying with all the provisions of this By-law applicable thereto.

SUSPENSION OF WORK

14. The Plumbing Inspector is hereby authorized and empowered to direct the immediate suspension of all or any portion of any plumbing work in process of installation by attaching a notice to that effect on the premises thereof, whenever it shall be found by him that such plumbing work is being installed or performed without a permit having been first issued in due form in respect thereof, or whenever the Plumbing Inspector shall deem that such plumbing work is being installed or performed by the use of materials or methods not in compliance with the provisions of this By-law in that behalf or the permit issued in respect thereof.

MAINTENANCE OF PLUMBING

15. Whenever, in the opinion of the Plumbing Inspector, any plumbing or drainage system (including fixtures and other appliances attached thereto) is defective, unsanitary or inadequate, the Plumbing Inspector shall notify in writing the owner, agent or person in charge of such premises, wherein the said plumbing or drainage system is situate, to put the same into a safe and sanitary condition or to remove, repair or renew the whole or any part as specified in such notice, and if the owner of such premises as aforesaid neglects or refuses to comply with the order, direction and conditions of the said notice within the time specified, such owner shall be deemed to be guilty of an infraction of this By-law.

NOTICE TO INSPECTOR TO INSPECT

16. (1) The Plumbing Inspector shall be duly notified in writing by the plumber or other person executing any work, for which a permit has been issued under the provisions of this By-law, when such work is ready for inspection.

(2) Nothing contained in the next preceding Subsection hereof shall prevent the Plumbing Inspector from inspecting plumbing during installation, to ascertain whether the regulations prescribed by, and the provisions of, this By-law are being or have been carried out and obeyed.

RESPONSIBILITY OF OWNER

17. In the event of failure of a ny work done or existing as defined in this By-law, or of any material being provided or used which shall fail to comply in all respects with the provisions of this By-law applicable thereto, the owner of the premises upon which such faulty work is done or exists, or for which such unsuitable material shall have been provided, shall be deemed to be guilty of an infraction of this By- law.

PLUMBER TO CONFORM OR PERMIT REVOKED

18. If it shall appear upon any such inspection and test that the work done or the material used or furnished does not and in all respects conform to the provisions of this By-law applicable thereto, the Plumbing Inspector shall order such changes in workmanship or material as shall make the same conform in all respects to the provisions of this By-law applicable thereto, and if such order be not complied with, the Plumbing Inspector shall revoke the permit for such work, and no further permit shall be granted to such plumber or other person who may execute the work until all defects in such work shall be remedied to the satisfaction of the Plumbing Inspector.

19. (1) In all cases where it is proposed to conduct the waste from plumbing fixtures, trade waste, or surface or roof water to a public sewer, the responsibility shall rest with the owner or plumber to make certain, by inquiring from the Municipal Engineer, that such public sewer is at a sufficient depth and of sufficient capacity to receive such discharge; and also to arrange the plumbing to suit the location of the "Y" provided for the lot by the Corporation.

(2) No permit to instal plumbing fixtures shall be issued by the Plumbing Inspector until a written certificate is produced by the applicant for such permit from the Municipal Engineer as to the sufficiency of the sewer.

CONDITIONS OF USE OF SEWER CONNECTIONS

20. Sewer connections shall not be used during building operations or relaying operations for drainage purposes, unless temporary sumps to catch sediment, and strainers to catch floating solids shall be installed in respect thereof to the satisfaction of the Plumbing Inspector.

PLUMBING UNDER SUPERVISION OF PLUMBING INSPECTOR

21. In all plumbing or house-drainage work, such work done and the material used thereon or therefor shall be under the supervision of the Plumbing Inspector at all times until the completion of such work; and the Plumbing Inspector may stop any work and revoke any such permit so issued when the work being done thereunder, or the material being used or furnished in respect thereof, is not in accordance with the provisions of this By-law in that behalf, and any work so ordered to be stopped by the Plumbing Inspector shall not be proceeded with further without the written authority of the Plumbing Inspector.

WORK TO BE UNCOVERED UNTIL INSPECTION

22. All work shall be left uncovered and convenient

and accessible for examination until the same shall have been inspected and tested in pursuance and in accordance with the provisions of this By-law in that behalf. If any work, or any portion thereof, has been covered before being inspected and tested as herein provided, the same shall be uncovered by the owner or plumber executing such work, on demand of the Plumbing Inspector, and shall be left uncovered until such testing and inspection shall have been completed.

PLUMBER TO GIVE NOTICE OF COMPLETION

23. Within seven (7) days from the completion of any work authorized by any permit issued pursuant to the provisions of this By-law, the plumber executing the same shall give due notice in writing of the fact of such completion to the Plumbing Inspector. No Plumbing work shall be used until the final inspection thereof has been made by the Plumbing Inspector and a certificate of final approval been issued by him in respect thereof.

TESTS

24. (1) When the plumbing drainage system of any building within the Municipality has been "roughed in," it shall be tested by the Plumbing Inspector, by either water or air, and shall be passed upon by the Plumbing Inspector within forty-eight (48) hours after receipt of notice in writing being given or delivered to him.

(2) The water test shall be applied by closing the lowest end of the pipes and filling the same to the highest point with water. Parts of any such work may be tested separately, provided there is a head of water of at least ten (10) feet over all parts of the work tested. The air pressure shall be applied with a force pump and a mercury column equal to ten (10) inches of mercury, and such pressure shall be maintained at least ten (10) minutes. Such tests shall include all soil, waste, and vent-pipes, brass ferrules,

solder nipples and lead connections to finish line. Wooden plugs and spring gauges are hereby prohibited.

(3) The smoke test shall be used in testing the sanitary condition of the drainage or plumbing system of any building within the Municipality where the Plumbing Inspector has reason to believe that the plumbing system therein has become dangerous or defective on account of the settling of such building, or through abuse, accident, or any other cause.

REMODELLING WORK

25. In remodelling work, the existing system of soil waste and ventilating pipes shall be changed to make the same conform to the provisions of this By-law in that behalf. In case of an extension or alteration of any existing plumbing system the same shall be subject to test and inspection, and the same shall be tested and inspected by the Plumbing Inspector as provided by this By-law in respect of new work where new stacks are run.

DISCRETIONARY POWERS OF PLUMBING INSPECTOR

26. When special fixtures or traps are desired by an owner or architect, for which there is no provision in respect thereof in this By-law, or where conditions arise that demand the exercise of discretion on the part of the Plumbing Inspector, the Plumbing Inspector may, after inspecting the premises, give a special permit in writing to such owner or architect, if in the opinion of the Plumbing Inspector the conditions require a deviation from the rules and regulations set forth in this By-law in that behalf.

DEPOSITING OF RUBBISH PROHIBITED

27. Any person depositing any rubbish or other matter in manholes, ventilators or flushing tanks in connection with any of the public sewers of the Municipality or upon any grating in connection therewith, shall be guilty of an

infraction of this By-law and liable to penalties hereby imposed.

INFRACTION WHEN FAILING TO COMPLY

28. Every person who does any work as defined by this By-law, and who shall fail, or whose work or materials used in connection therewith shall fail to comply in all respects with the provisions of this By-law in that behalf, or who does work contrary to the lawful order of the Plumbing Inspector or after revocation or lapse of the permit, shall be guilty of an infraction of this By-law and shall be liable to the penalties hereby imposed.

NOTHING IN THIS PART TO RELIEVE PERSONS FROM COMPLIANCE WITH BY-LAWS.

29. Nothing in this Part of this By-law contained shall be taken to relieve any person from complying with all the other provisions of this By-law in respect of any work done or material supplied or furnished, or any act or thing done or permitted or omitted to be done, where any such provisions are applicable thereto or of any other By-law of the Corporation applicable thereto.

PART IV.

MATERIALS

QUALITY OF MATERIALS

30. All materials used in any work in any building within the Municipality shall be of good quality, and free from defects. All work shall be executed in a thorough and workmanlike manner to the satisfaction of the Plumbing Inspector.

VITRIFIED PIPE

31. Pipe when used in and for house sewers shall be of vitrified earthenware, salt glazed over the entire surface thereof, and shall be uniform in size, straight and free from cracks, blisters, or other defects.

CAST-IRON PIPES AND FITTINGS

32. All cast-iron pipe and fittings shall be sound, cylindrical and smooth, of uniform thickness, and shall be free from cracks and holes or other defects. Such pipes shall be no lighter than the grade known in commerce, or to the trade generally, as "medium," up to and including four (4) inch pipe; and as "extra heavy" for larger than four (4) inches, in diameter.

WEIGHTS OF CAST-IRON PIPE

33. No cast-iron pipe used in any work in any building within the Municipality shall weigh less per lineal foot, including hubs, than the following, described in the following table, for the following dimensions:

DIAMETER	WEIGHT
2 inches.....	4 lbs.
3 "	6 "
4 "	9 "
5 "	17 "
6 "	20 "
7 "	27 "
8 "	33½ "
10 "	45 "

WEIGHTS OF CAST-IRON FITTINGS

34. All fittings used in connection with any pipe as specified in the next preceding Sub-section hereof shall correspond in thickness and quality with such pipe, and shall be of the following weights:

(1) SANITARY TEES

Dimensions	Medium Weight	Extra Heavy Weight
2 ins. x 2 ins.	7 lbs.	.....
3 ins. x 3 ins.	10 lbs.	.....
4 ins. x 2 ins.	12½ lbs.	.....
4 ins. x 3 ins.	14 lbs.	.....
4 ins. x 4 ins.	16 lbs.	.....
6 ins. x 2 ins.	.....	24 lbs.
6 ins. x 3 ins.	.....	26 lbs.
6 ins. x 4 ins.	.....	30 lbs.
6 ins. x 6 ins.	.....	40 lbs.

(2) DOUBLE Y'S

Dimensions	Medium Weight	Extra Heavy Weight
2 ins. x 2 ins.	10 lbs.	.....
3 ins. x 2 ins.	14 lbs.	.....
3 ins. x 3 ins.	17 lbs.	.....
4 ins. x 2 ins.	17 lbs.	.....
4 ins. x 3 ins.	20 lbs.	....
4 ins. x 4 ins.	24 lbs.	.....
6 ins. x 2 ins.	.....	30 lbs.
6 ins. x 3 ins.	.....	32 lbs.
6 ins. x 4 ins.	.....	36 lbs.
6 ins. x 6 ins.	.....	48 lbs.

(3) DOUBLE SANITARY TEES

Dimensions	Medium Weight	Extra Heavy Weight
2 ins. x 2 ins.	10 lbs.	.....
3 ins. x 2 ins.	12 lbs.	.....
3 ins. x 3 ins.	15 lbs.	.....
4 ins. x 2 ins.	15 lbs.	.....
4 ins. x 3 ins.	18 lbs.	.....
4 ins. x 4 ins.	20 lbs.	.....
6 ins. x 2 ins.	.....	30 lbs.
6 ins. x 3 ins.	.....	32 lbs.
6 ins. x 4 ins.	.....	36 lbs.
6 ins. x 6 ins.		

(4) LONG QUARTER BENDS

Dimensions	Medium Weight	Extra Heavy Weight
2 ins. x 12 ins.	7 lbs.	.....
4 ins. x 12 ins.	14 lbs.	.....
4 ins. x 13 ins.	19 lbs.	.....
4 ins. x 24 ins.	23 lbs.	.....

SHORT QUARTER BENDS OR
90 DEGREES

Diameter	Medium Weight	Extra Heavy Weight
2 inches	4 lbs.	.....
3 inches	8 lbs.	.....
4 inches	10 lbs.	.....
6 inches	.....	24 lbs.

1/6 BENDS

Diameter	Medium Weight	Extra Heavy Weight
2 inches	4 lbs.	.....
3 inches	7 lbs.	.....
4 inches	9 lbs.	.....
6 inches	.....	22 lbs.

(7) 1/8 BENDS

Diameter	Medium Weight	Extra Heavy Weight
2 inches	4 lbs.	.....
3 inches	6 lbs.	.....
4 inches	8½ lbs.	.....
6 inches	.....	20 lbs.

(8) 1/16 BENDS

Diameter	Medium Weight	Extra Heavy Weight
2 inches	4 lbs.	.....
3 inches	5 lbs.	.....
4 inches	8 lbs.	.....
6 inches	.....	16 lbs.

(9) Y'S

Dimensions	Medium Weight	Extra Heavy Weight
2 ins. x 2 ins.	7½ lbs.	.....
3 ins. x 2 ins.	10 lbs.	.....
3 ins. x 3 ins.	11 lbs.	.....
4 ins. x 2 ins.	14 lbs.	.....
4 ins. x 3 ins.	15 lbs.	.....
4 ins. x 4 ins.	17 lbs.	.....
6 ins. x 2 ins.	.....	24 lbs.
6 ins. x 3 ins.	.....	28 lbs.
6 ins. x 4 ins.	.....	30 lbs.
6 ins. x 6 ins.	.....	40 lbs.

(10) BOSTON Y'S

Dimensions	Medium Weight	Extra Heavy Weight
2 ins. x 2 ins.	8 lbs.	.....
4 ins. x 2 ins.	16 lbs.	.....
4 ins. x 4 ins.	24 lbs.	.....

(11) "P" TRAPS

Diameter	Medium Weight	Extra Heavy Weight
2 inches	7 lbs.	.....
3 inches	14 lbs.	.....
4 inches	20 lbs.	.....
6 inches	.....	48 lbs.

(12) DOUBLE HUBS

Diameter	Medium Weight	Extra Heavy Weight
2 inches	4 lbs.	.....
3 inches	8 lbs.	.....
4 inches	8 lbs.	.....
6 inches	.....	20 lbs.

(13) DOUBLE SANITARY T WITH 2-INCH "Y" BRANCH

Dimensions	Medium Weight	Extra Heavy Weight
4 ins. x 4 ins. x 4 ins. 2 ins. side branch	27 lbs.	.....

(14) SANITARY "T" WITH 2-INCH "Y" BRANCH

Dimensions	Medium Weight	Extra Heavy Weight
4 ins. x 4 ins. 2 ins. side branch	23 lbs.	.....

(15) DOUBLE "Y" 4-INCH, 2-INCH "Y" BRANCH

Dimensions	Medium Weight	Extra Heavy Weight
4 ins. x 4 ins. x 4 ins. 2 ins. side branch	30 lbs.	.....

(16) "Y" WITH 2-INCH BRANCH

Dimensions	Medium Weight	Extra Heavy Weight
4 ins. x 4 ins. 2 ins. side branch	25 lbs.	.....

(17) REDUCER

Dimensions	Medium Weight	Extra Heavy Weight
3 ins. to 2 ins.	4 lbs.	.....
4 ins. to 2 ins.	5 lbs.	.....
4 ins. to 3 ins.	5 lbs.	.....
6 ins. to 4 ins.	.....	15 lbs.

(18) P TRAP 4-INCH, WITH 2-INCH VENTS

Dimensions	Medium Weight	Extra Heavy Weight
4 ins. with 2 ins. vent	23 lbs.	.....

RUNNING TRAP

Dimensions	Medium Weight	Extra Heavy Weight
4 ins. with 4 ins. hand hole	31 lbs.	.....

CAST-IRON TO BE COATED

35. All cast-iron pipes and fittings to be used underground within the Municipality shall be coated at the factory either with asphaltum, tar, or what is known to commerce or the trade generally as Dr. Angus Smith's preparation. Cast-iron pipe fittings to be used above ground within the Municipality shall be treated with linseed or other vegetable oil, asphaltum, tar, or with Dr. Angus Smith's preparation.

WROUGHT-IRON OR STEEL PIPE

36. (1) Wrought-iron or steel pipe used in any work within the Municipality shall not be of less than the minimum weight per lineal foot set forth and described in the following table:

Diameter--Inside	Weight per Lineal Foot
1¼ inches	2.24 pounds
1½ "	2.68 "
2 "	3.61 "
2½ "	5.74 "
3 "	7.54 "
3½ "	9.00 "
4 "	10.66 "
4½ "	12.49 "
5 "	14.50 "
6 "	18.76 "
7 "	25.27 "
8 "	28.12 "

(2) Variations in weight shall not exceed five per cent (5%) in wrought-iron or steel pipe.

WROUGHT-IRON OR STEEL PIPE TO BE COATED

37. All wrought-iron or steel vent-pipes shall be of galvanized pipe. Such fittings shall be galvanized or coated with linseed oil, asphaltum, or tar. Ordinary gal-

vanized malleable-iron or cast-iron fittings treated with linseed oil, asphaltum, or tar may be used for vents and revents on wrought-iron pipe work.

BRASS PIPE

38. (1) All brass pipe for soil, waste or vent pipes shall be thoroughly annealed seamless-drawn brass tubing, having not less than the outside diameter, weight, thickness, and gauge set forth in the following table:

Outside Diameter	Weight per Lineal Foot	Thickness in Inches	Gauge (Imperial)
1½ ins.	0.88 lbs.	1/16 in.	16
1¾ "	1.06 "	1/16 in.	16
2 "	1.43 "	1/16 in.	16
2½ "	2.82 "	7/64 in.	12
3 "	3.41 "	7/64 in.	12
4 "	5.34 "	1/8 in.	10
5 "	7.22 "	1/8 in.	10
6 "	8.71 "	1/8 in.	10

(2) Brass caulking ferrules shall be of cast or drawn brass of the following weights and dimensions:

Internal Diameter	Least Length	Weight
2½ ins.	4½ ins.	1.00 lbs.
3½ ins.	4½ ins.	1.75 lbs.
4½ ins.	4½ ins.	2.50 lbs.

SOLDER NIPPLES

39. Solder nipples shall be of heavy cast brass with hexagon shoulders, and shall be recessed to take lead pipe.

CLEAN-OUTS

40. Clean-outs for caulking shall have a screw cover of solid brass not less than one-eighth (1/8) inch thick, and shall be a solid square or hexagonal nut. Clean-outs in wrought-iron pipes shall have solid brass screw plugs.

LEAD PIPES, TRAPS AND BENDS

41. All lead pipes, traps and bends shall be drawn, and shall be of not less than the following weights in proportion to their length:

Size in Inches	Weight per Yard
1 inch	6 pounds
1¼ "	7 "
1½ "	8 "
2 "	10½ "
2½ "	13½ "
3 "	16½ "
4 "	24 "

PART V.

GENERAL REGULATIONS

42. (1) All piping shall be as straight and direct as possible, and so arranged that such pipe may be readily inspected during installation and accessible for cleaning and repairs.

(2) All horizontal piping shall be run in perfect alignment, and at a uniform grade of not less than one-quarter (¼) of one inch to one (1) foot.

(3) All drainage and plumbing pipes shall be rigidly secured and supported to keep their alignment in grade. Any change of direction therein shall be made by the proper use of 45 degrees Y's, sixteenth, eighth, sixth, or long-sweep quarter-bends.

There shall be placed on each waste line at least one clean-out fitting for each change of direction and made accessible. Where clean-out fittings come below tile or similar floors, a heavy brass plate shall be placed to allow access to clean-out.

(4) The radius of long-sweep bends, prescribed in the next-preceding Section hereof, shall be at least one and

one-half (1½) times the internal diameter of such pipe. Straight T's may be used for vents or clean-out openings. Quarter-bends may only be used for vents for clean-out openings, or for fixture connections.

(5) All dead-ends in piping shall be avoided, and whenever any plumbing or drainage system is reconstructed, or in any way altered, all dead-ends or unused parts shall, wherever practicable, be removed up to their drainage connections, and the opening for same shall be securely capped or plugged.

(6) The feet of every stack shall be adequately supported by the use of properly constructed brick, stone or concrete piers, or otherwise equally supported. All horizontal lines shall be either adequately supported underneath or suspended by hangers of band iron at hubs, not more than five (5) feet apart on cast iron, and ten (10) feet apart on wrought iron pipes.

(7) Vertical lines of soil, waste and other pipes shall be provided with floor rests at intervals of not less than two (2) storeys, or otherwise sufficiently supported. The use of pipe hooks for supporting pipes is prohibited.

(8) Wherever practicable, all offsets in soil, waste or vent-pipes shall be made at an angle of forty-five (45) degrees.

(9) No sanitary "T" branches shall be used on any horizontal run, nor shall any inverted joint be made on any soil or waste-pipe. Straight crosses or "T's" shall not be used on any soil or waste-pipe. The use of sleeves, bands or saddles is hereby prohibited in all cases.

BUILDING REGULATIONS TO BE OBSERVED

43. In all new work when pipes pass through walls there shall be relieving arches, thimbles, or lintels, with a clearance of at least one (1) inch; and no girder, beam or joist shall be cut in such a manner as to reduce its strength below that required for the purpose for which it is intended.

JOINTS AND CONNECTIONS

44. (1) All joints and connections shall be made gas and water-tight.

(2) The hub and spigot ends at each joint of vitrified sewer pipe shall be thoroughly wetted and laid concentric with each other. A gasket of oakum or caulking rope shall be forced to the bottom of such socket with a proper tool; and the remaining annular space shall be filled completely with cement-mortar made of one (1) part Portland cement and two (2) parts clean, sharp sand, and shall be finished off with a trowel, and the inside shall be carefully wiped out with a suitable scraper. Changes of direction shall not be made by the use of quarter-bends or by laying straight lengths out of line; Y's or one-eighth (1/8) bends shall be used in all such cases.

(3) Cast-iron caulked joints shall be made with an oakum gasket well packed, and the remaining space of at least one (1) inch in depth shall be filled with molten lead, well caulked on the inner and outer circles thereof.

(4) All joints in wrought-iron or steel pipes shall be screw joints with all burrs or coatings on the inside of the pipe carefully reamed out. All screw joints shall be made up with white or red lead, or other mineral paint, applied to the male threads.

(5) Where wrought-iron pipe connects to cast-iron pipe, such connection shall be made with a half coupling screwed on to the end of such pipe, and shall be caulked into the hub thereof, or by the use of a properly tapped fitting.

(6) All connections between lead pipes, or between lead pipes and brass, shall be made by means of wiped solder joints. Connections between lead and iron-pipe shall be made with ferrules wiped to the lead pipe and caulked into the hub of the cast-iron pipe, or by means of a solder nipple in the case of threaded joint; but in no case shall

such ferrules or solder nipples reduce the size of such lead pipe.

(7) All unions used on any soil, waste or vent-pipe shall be ground-faced, except where under water seals of traps. No joint, depending on rubber or any like substance for its effectiveness, shall be used in any plumbing system on the sewer side of any trap.

(8) Any fixture with an earthenware trap connected directly to the soil or waste-pipe shall be connected by means of a heavy cast brass floor flange weighing not less than one and one-half (1½) pounds. Such flange shall be soldered to the lead bend, and shall be screwed to the floor, and bolted to the trap flange, and the joints thereof shall be made gas-tight. All such flanges shall be recessed on the underside thereof to receive the bolt heads, and shall be slotted so as to allow the bolts to be adjusted to the holes in the fixture.

BACK-PRESSURE VALVES

45. Automatic back-pressure hinged valves, or gate valves used on drains, shall have gate and hinges of brass or other non-corrodible metal. Horizontal automatic valves shall have on the outlet side thereof an offset on the bottom of such valve, at least one-quarter (¼) the diameter thereof, and shall be provided with a cover having a machine-finished flange and seat provided with brass bolts and nuts, made tight with asbestos or lead gaskets. Nothing in this Section contained shall be so construed as to prohibit the use of any other form of approved automatic valve which employs balls or hinged, movable parts; provided that such valves shall possess equal durability and efficiency against back-pressure.

HOUSE SEWERS AND DRAINS

46. (1) If any part of the premises or lot or parcel of land upon which any building within the Municipality is

[illegible] or work, or carry on any

occupation, trade or calling, is situated within one hundred and fifty (150) feet of any public sewer, the owner or occupant of such building shall connect such building with such sewer in the manner provided by the By-laws of the Municipality in that behalf.

(2) If any part of the premises or lot or parcel of land upon which any building within the Municipality in which one or more persons reside or work, or carry on any occupation, trade or calling, is situated within one hundred and fifty (150) feet of any Municipal water-main, the owner or occupant of such building shall connect such building with a water-main in the manner provided by the By-laws of the Municipality in that behalf.

(3) In default of any such owner or occupant so connecting any such building with such public sewer, or with such Municipal water-main, the Council of the Municipality may order and direct, on and after giving fourteen (14) days written notice to such owner or occupant making such default, that such property shall be connected up with such public sewer or such water-main, as the case may be, on report and recommendation of the Medical Health Officer or Plumbing Inspector of the Municipality made in that behalf; and the cost and expense of making such connection shall be certified to by the Inspector and such certificate shall state thereon the number and description of the lot or parcel of land whereon such connection is made and the actual cost of the work done or performed in making such connection, and the Inspector shall file such certificate with the Collector of Taxes for the Municipality, and the amount of such cost and expense as so certified shall be added to the taxes of such lot or parcel of land on the Collector's roll, and the said cost and expense shall be collected in the manner and shall be treated in all respects, as ordinary taxes due upon the said land.

(4) Any such owner or occupant so in default as aforesaid shall be deemed to be guilty of an infraction of this By-law, and liable to the penalties hereby imposed.

(5) House drains or main drains may be used in connection with new buildings only when the same conform in all respects to the requirements governing new sewers or drains as prescribed in this By-law in that behalf.

(6) Where a building is placed or constructed upon a lot which has an old sewer or drain within the lines of any part of the foundation thereof, or within thirty (30) inches thereof, such sewer or drain shall be either removed or replaced with cast-iron pipe and run in accordance with the provisions of this By-law in that behalf.

(7) Any excavation for sewer and drain trenches shall have a uniform grade at the bottom with cross grooves cut in at such bottom to receive the hub of such pipes. Each length of pipe shall be given a solid bearing, using concrete if necessary; and the soil on each side of the pipe shall be well rammed.

(8) Where the ground is made or filled in, or otherwise unsound, the house sewer shall be of extra heavy cast-iron with caulked lead joints.

(9) When a proper foundation consisting of a natural bed of earth, sand or shale can be obtained, a house sewer may be of vitrified earthenware, and shall not be laid within thirty (30) inches of any building, or less than five (5) feet below the surface of the ground, except on private property where there is no wagon traffic over the same, in which event such pipe may be laid with one and one-half (1½) feet of covering over the same.

(10) Each house drain and its branches shall be of cast-iron when installed underground; or cast-iron or brass when installed above ground.

(11) The house drain shall extend to and be connected with the house sewer at a point at least thirty (30) inches outside the outer face of the building, foundation, cellar or area wall of any building, or at least thirty (30) inches outside the building foundation where such building has no regularly constructed cellar or basement.

(12) Vitrified earthenware drain may be used, if laid on solid soil, in buildings used or intended to be used as garages, stables or warehouses, as defined in the Building By-law, provided that such drains are completely covered and amply protected from super-imposed loads.

(13) Each lot or premises must be separately and independently connected with a main sewer.

(14) No private sewer in actual use shall be disturbed except under the special direction of the Plumbing Inspector.

(15) In all buildings occupied as dwellings, rooming, boarding houses, hotels, offices, lofts, workshops, factories, storage or warehouses there must be at least one water closet and one sink or wash-basin in each building. There must be sufficient water-closets so that there will never be more than fifteen (15) persons for each water-closet. Buildings occupied as stores shall have at least one water-closet and one sink or wash-basin in each store. In apartment houses or any building containing more than one suite of rooms, there shall be one separate water-closet and one sink or wash-basin for each suite of rooms therein, which said water-closet and sink or wash-basin shall form part of said suite of rooms.

(16) Separate water-closets and sinks or wash-basins and toilet rooms must be provided for each sex on each floor in buildings used as workshops, rooming houses, office buildings, factories, hotels, and all other places of public assembly.

(17) In all buildings the water-closet and urinal apartments must be ventilated to the outer air by windows opening on the same lot as building is situated on, or by ventilating sky-lights placed over each room or apartment wherein such fixtures are located.

(18) No Building shall be let or occupied in which it is intended that any person or persons shall reside or work, or carry on any occupation, trade or calling, unless such building shall have installed therein one water-closet and one sink or wash-basin connected with sewer or septic tank, and shall comply with the requirements of this By-law.

TRAPS AND CLEAN-OUTS

47. (1) Every trap used in or on any drainage or plumbing system shall be self-cleaning. No form or type of trap which depends on the action of movable parts for its seal shall be used. No trap which depends upon interior partitions or deflectors for its seal or reseal, or which has an interior partition that in case of defect, would allow the passage of sewer gas, shall be used, except for earthenware fixtures where the seal of the trap is plainly visible. All traps (except where otherwise provided in this By-law, or on water-closets and pedestal slop sinks) shall be of ordinary "P" pattern, constructed of cast-iron, brass or drawn-lead.

(2) Every trap shall have a water seal of at least one and one-half (1½) inches.

(3) There shall be no traps on any soil or waste-pipe, or in or upon the house drain or house sewer.

(4) Every trap in any drainage or plumbing system shall be firmly supported and set true in respect to the water level, and shall be so located as to protect the seal thereof from frost.

(5) Every fixture, except those where otherwise specifically provided in this By-law, shall be separately trapped

as close to the fixture

as is practicable with regard to its location and effectiveness; but no trap shall be more than two and one-half (2½) feet from its fixture outlet; and the fixture shall be placed vertically above such trap.

(6) Every trap shall be provided with a suitable and accessible clean-out, except any such trap in combination with fixtures where trap seal is plainly visible or accessible and except such traps in ceiling.

(7) Clean-outs shall be placed at the foot of all soil and waste-stacks, and at every change of direction horizontally, and at least every twenty (20) feet of all sink wastes, and in such positions as shall make every part of the plumbing system readily accessible.

(8) All fixtures, other than water-closets, shall be provided with fixed, strong metallic strainers over each outlet.

(9) Clean-outs shall be of the full size of the pipe up to four (4) inches in diameter and not less than four (4) inches for larger pipe.

(10) All clean-outs shall be readily accessible, either by being brought up above the floor or by means of manholes.

SOIL AND VENT PIPES

48. (1) All main and branch soil and waste-pipes shall be of cast-iron, brass or lead.

(2) In any building of steel frame, reinforced concrete or masonry construction the use of galvanized-iron or steel waste-pipe for minor fixtures may be permitted in the discretion of the Plumbing Inspector, but in no case shall such pipe connect toilets, bath or slop sinks.

(3) Every building in which there is a house drain, or in which water-closets or other fixtures are installed, shall have at least one soil-pipe of not less than four (4) inches in diameter, and which pipe shall extend undiminished in size from the point above the roof of such premises. Each soil and waste-pipe shall be located within the building, and

shall continue undiminished in size to a point ten (10) inches above the roof, or seven (7) feet above such roof in those cases where any such roof is adapted or used for public purposes, or whereon the public foregather; provided that all terminals of such pipe shall be located not less than ten (10) feet outside, or twenty-four (24) inches above, any window, floor, or other opening in such building or any adjoining building at the date of the permit for the installation of such pipes.

(4) Each soil or vent-pipe in any leanto or extension of any building shall be carried to and above the roof of the main building adjacent or annexed to the same when such pipes end within ten (10) feet of any openings of such buildings.

(5) The point where any vent-pipe shall pass through the roof of any building shall be made water-tight with a hub or other approved flashing of sheet-lead or copper.

(6) Any soil or waste branch or branches extending for a developed distance, horizontally and vertically measured, of twenty-five (25) feet, or of ten (10) feet vertically, as measured from the main line, shall be continued at the full diameter thereof through the roof of the building in which the same are placed.

(7) No fixture connection shall be made to the lead-bend of any water-closet or other earthenware fixture combined with any trap.

VENTING REGULATIONS

49. (1) Each fixture trap, except otherwise hereinafter provided, shall br protected from syphonage and back-pressure; and air circulation shall be assured by a vent or back vent-pipe.

(2) The back vent-pipe of any fixture shall be as close to the trap as practicable.

(3) The developed length of the waste-pipe of any fixture from its trap to the vertical vent-pipe, or to the horizontal

soil or waste-pipe of any circuit or loop system, shall not exceed two (2) feet six (6) inches, except where such soil or waste-pipe shall be four (4) inches or more in diameter, when such developed length may be not more than five (5) feet.

(4) The back vent-pipe shall be vertically continuous from the waste fitting wherever possible.

(5) Crown venting of any trap is hereby prohibited.

(6) Any main vent (except for circuit-vent systems) extending over fifteen (15) feet in length shall be connected at the base thereof to the main waste or soil-pipe by a "Y" fitting at or below the lowest drainage or fixture fitting thereof, and shall be extended through and above the roof of the building, or be reconnected to the adjoining soil or waste vents above the top of the highest fixture in connection therewith.

(7) Each branch vent and back vent-pipe shall be graded so as to drip back to the soil or waste-pipe by gravity. All connections between soil or waste-pipes and vent-pipe-lines shall be made with sanitary "T's" and "Y's" set in such a manner as not to be unduly exposed to back water and splash of water. On horizontal runs such connections shall be taken off above the centre line as near the main of such pipe as possible, and shall rise at an angle of not less than forty-five (45) degrees to a point above the top of the fixture in connection therewith.

(8) Where vent and back vent-pipes connect, such connections shall be made at a point not less than three (3) inches above the top or flow line of the fixture in connection therewith.

(9) Each water-closet, urinal and slop sink, having a floor connection, except otherwise provided in this By-law,

shall be back vented from the soil or waste branch thereof, and preferably on the top of such branch. When connected with a vertical arm of the bend, such connection shall be made to the top of the horizontal branch thereof.

(10) Any branch, soil or waste-pipe, to which a group of two or more water-closets, porcelain stall urinals or slop-sinks is connected, must be vented either by a circuit or loop vent.

(11) Where such branch soil-pipe on a circuit-vent system shall measure less than twenty-five (25) feet from the main soil-pipe to the furthermost fixture in connection therewith, and where there are not more than four (4) such fixtures thereon, the vent portion of such circuit system may be reduced to three (3) inches; otherwise the vent shall be extended to the full size to the main following the circuit stack.

(12) All circuit vent mains which are more than twenty-five (25) feet distant from the main stack shall extend through and above the roof of any building.

(13) Where the discharge of any fixture on any floor or floors above such fixture shall exceed the area of the soil or waste-pipe in connection therewith, and where there are six (6) fixtures on any circuit system, a special relief vent of not less than one-half ($\frac{1}{2}$) the diameter of such branch soil-pipe in connection therewith shall be placed in front of the nearest fixture branch.

(14) In any circuit or loop system, each relief vent-pipe shall be placed after every six (6) fixtures in connection therewith; or, in case there shall be more than six (6) and less than twelve (12) fixtures in any row, the number of fixtures shall be divided equally, and the relief vent shall be attached to a horizontal pipe between the same. No circuit branch shall extend in any case for more than twenty-five (25) feet without a relief vent being provided therein.

(15) Separately vented waste connections may act as re-

lief vents within the meaning of this Section.

(16) The vertical arm of any circuit or loop vent shall be taken off the top of the main branch in front of, or on the soil side of, such fixture used in connection therewith.

(17) The vertical drop from the floor line of any water-closet or slop sink waste branch in any circuit system shall not exceed twenty-four (24) inches from the floor line thereof. The vertical arm of a circuit or loop system may receive the waste from not more than one (1) minor fixture, when such vertical arm is not less than three (3) inches in diameter; and from not more than two (2) minor fixtures when such vertical arm is not less than four (4) inches in diameter.

(18) No fixture trap on any branch of any soil or waste-pipe stack which extends in undiminished head size through the roof of any building shall be required to be back-vented where the aggregate sectional areas of all the branches thereof discharging into the stack above the said branch and fixture trap do not exceed two-thirds (2/3) of the area of such stack; provided the waste portion of the stack above the point of connection of the said branch and fixture trap is in the same vertical line as the portion below such branch fixture system.

(19) Where only one (1) water-closet is connected with any soil-pipe or house drain, and is located not more than five (5) feet from a stack or drain, the venting of such water-closet may be omitted.

(20) When two (2) water-closets are located not more than five (5) feet from the soil pipe in connection therewith and are situate on the same floor and discharge into a double "Y" or "T-Y," and where no other water-closet discharges into the soil-pipe above such branch in connection therewith, back venting of either of such water-closets may be omitted.

(21) Where two water-closets are located on the same floor and discharge into a single "Y" or sanitary "T" branch in connection therewith, such water-closets must be back-vented with a two-inch pipe.

(22) When two water-closets or other fixtures discharge into a double "Y" or sanitary "T" a single back vent, symmetrically connected at the junction thereof, is permitted.

(23) Where a separately vented waste-pipe enters any water-closet branch, back-venting of such water-closet may be omitted; provided that the diameter of such waste-pipe shall not be less than two (2) inches; and provided, further, that there shall not be more than two minor fixtures connected therewith, and that the furthermost trap on the horizontal run shall be not more than ten (10) feet from the main soil-pipe used in connection therewith.

(24) Where vertical waste-pipes receive the discharge of wash-basins or apartment house kitchenette sinks, back-venting of the traps of such fixtures may be omitted; provided that the aggregate area of all waste entering the waste-pipe in connection therewith shall not exceed one and two-third times the area of such waste-pipe; and provided, further, that each individual trap in connection therewith shall not be more than two (2) feet six (6) inches distance from its branch connection. Any offsets in any of aforesaid stacks shall not exceed three (3) feet from the vertical line.

The provisions of this Subsection apply only to cases where 1½" waste outlets are used and in this connection the formula below shall apply:

FORMULA:

Diameter	Area	1 2/3 Area	Number of Outlets
1¼"	1.22	2.03	1
1½"	1.76	2.90	2
2 "	3.14	5.22	4
3 "	7.06	11.76	9
4 "	12.56	20.93	17

SANITARY FIXTURES

50. (1) All receptacles for the disposal of human excreta, whether water-closets, urinals or otherwise, shall be white vitrified earthenware or cast-iron, white enamelled inside by the dry process. All such receptacles shall have perfectly smooth non-absorbent interior surfaces. If cast-iron is used in the construction of such receptacles, it shall be enamelled or painted on the outside with at least three coats of non-absorbent and non-corrosive paint.

(2) The bowls of water-closets shall be made of such shape and form as to hold a sufficient quantity of water when full to the trap overflow, to completely submerge any matter deposited in them. The trap seals shall be visible.

(3) All water-closets, pedestals or stall urinals shall be provided with flushing rims, or shall be so constructed as to flush the entire interior surface thereof with water as prescribed for the water supply of fixtures as hereinafter provided.

(4) All water-closets shall be of a syphon pattern, provided with refilling devices; provided, however, that cast-iron hopper closets may be installed outside enclosing walls of any building used for human occupation or habitation.

(5) Water-closets of the pan, plunger or wash-out type, or having invisible seals, or having unventilated spaces, or whose walls are not thoroughly washed at each discharge, are hereby prohibited.

(6) No water-closet or other such fixture installed

or in use at the date of the passing of this By-law which does not conform to the provisions of this By-law, may be reset in the same or in any other location when it has been lifted, for any purpose.

(7) All plumbing fixtures in buildings shall be set free and open, and shall not be enclosed with wood or any other material.

(8) Urinals installed in any public or semi-public building, hotel, school or lodging-house as defined in the Building By-law, shall be of vitrified earthenware or glass of the integral small type. Such urinals shall only be installed in rooms having the floors, and walls to a height of at least three (3) feet six (6) inches finished with impervious material, such as tile set in cement, or glass.

(9) Enamelled cast-iron trough urinals or urinals constructed of impervious tile set in cement, may be installed in factories, workshops or in athletic dressing rooms in parks or public playgrounds; provided that the floors for a distance around them of at least two (2) feet and the walls to a height of at least four (4) feet are made watertight and impervious.

Metallic flashings shall not be used for such purposes.

(10) The installation of fixed wooden wash-trays and sinks is prohibited in any building designed and used for human habitation; but may be used in public laundries, dye-houses and other such buildings where such fixtures are in daily use.

(11) Wooden troughs or sinks, with or without metallic lining may be installed for bar sinks in hotels, restaurants and public kitchens, provided that the same are lined with lead or copper only.

(12) No bath-tub lined with copper or zinc shall be installed; and no bath-tub shall be relined.

(13) A set of not more than three laundry tubs, with a trap placed under the central fixture, or a combined sink and laundry tub may be considered as one fixture in which case one trap is sufficient.

(14) Wooden or sheet-metal laundry tubs are hereby prohibited.

BUILDING REQUIREMENTS

51. (1) Water-closets and urinals shall be located in separate compartments, except as hereinafter specifically provided. Rooms in which such fixtures are installed shall be separated from all other rooms and hallways by six (6) inch partitions extending from floor to ceiling. All such rooms shall be open to the outer air by means of a window or skylight having an area of not less than one-tenth of the total floor space of the room in which such fixtures are installed; provided, however, that in no case shall such windows have an area of less than four hundred and thirty-two (432) square inches, at least fifty per cent. (50%) of the area of such windows shall be made to open.

(2) When skylights are used in such rooms, a skylight area equal to ten per cent (10%) of the area of each room shall be permanently open, and provided with an air-duct similar to that required for a vent-shaft, which duct shall have an area of not less than ten per cent. (10%) of the area of the open skylight area.

(3) No water-closet which is used by more than one family shall be in the same room as a bath-tub; and no bath-tub which is used by more than one family shall be in the same room as a water-closet.

(4) Notwithstanding anything contained in the next preceding Sub-sections hereof all buildings or part thereof shall comply with the provisions of the Building By-law.

WATER-SUPPLY PIPES

52. (1) All water-supply pipes for a plumbing system shall be galvanized iron, brass or copper with galvanized malleable cast-iron, brass or copper water fittings. Short branches on cold supply may be laid of lead.

(2) There shall be a stop and waste-cock on any main supply pipe situated inside and underneath the wall of every building, to which all such pipes shall be graded. There shall be also a separate stop and waste-cock on every outside tap or water-closet.

(3) All water pipes shall be protected from frost, and where passing underground shall be laid at least eighteen (18) inches deep. Where such pipes cannot be so laid they shall be otherwise directly protected from frost. No water pipe shall be placed in the outside wall of any building of Class "D" construction (veneer) or Class "E" construction (frame) as defined in the Building By-law.

(4) All water-closets or other plumbing fixtures shall be provided with a sufficient supply of water for flushing to keep such pipes or fixtures in a proper and clean condition, which fixtures shall be so constructed as to permit of their being shut off without interference with any other fixtures.

(5) Water-closets, other than those fitted with flush valves, shall be supplied from a tank which is used for no other purpose. Each closet must be supplied from a separate tank.

(6) All urinals shall be fitted with automatic flush tanks, or other adequate flushing pipes satisfactory to the Plumbing Inspector of the Municipality, which shall be so arranged as to discharge sufficient water therein so as to keep all such fixtures in a clean and sanitary condition.

WASTE FROM REFRIGERATORS, SAFES AND DRIP-PANS

53. (1) Refrigerator, safe and special waste lines, unless otherwise specifically provided in this section, shall

be of cast-iron brass or lead of not less than one and one-quarter (1¼) inches diameter, and shall have branches of the same dimensions. Such waste lines shall be constructed and fitted in the same manner as otherwise prescribed in this By-law for connection shall be made with forty-five (45) degree "Y," and that the traps in connection therewith may or may not be back vented; but all off-sets and changes of direction shall have clean-outs so placed as to control all such piping.

(2) Waste-pipes from refrigerator wastes, safes or drip-pans shall be as short as possible, and shall discharge to the open air over an open water-supplied sink or floor drain accessibly placed with deep seal trap.

When there is more than one connection in any vertical line of any refrigerator overflow, each branch of the same shall be as short as possible, and shall be separately trapped with trap and clean-out placed as near the inlet thereof as possible; and such waste-pipe shall extend through the roof of the building as provided for in respect of other vent-pipes. All such traps shall be accessible. Such waste-pipes shall be one and one-half (1½) inches for connection on from two to four storeys; and two (2) inches from five to ten storeys inclusive.

WASTE FROM MILK VATS AND IN DAIRIES

54. Waste-pipes from milk-vats, sterilizers or other receptacles and sinks used in creameries, dairies or milk-houses shall be of the same construction and material as wastes from sinks or other minor fixtures. Such waste shall discharge outside of the storage-room of any such building either on to a tight floor, having a catch-basin, or discharge over a properly constructed sink.

WASTE FROM LAUNDRIES, ETC.

55. Waste-pipes from wash-trays, washing-machines and other like fixtures in public laundries, dye-house,

breweries, bottling-works, stables, garages and other places in which any quantity of water is used, may discharge on the floors of such buildings; provided that the floors thereof are water-tight, with bases at least six (6) inches high, and contain properly constructed catch-basins, floor washers or drains.

REGULATIONS RELATING TO NOXIOUS WASTES

56. (1) No gasoline, naphtha or other inflammable liquid or explosive substance or thing, and no grease, oil, lye, free acid, mud, grit, plaster of Paris, lime, modelling clay, textile fibres, hair, straw, refuse from fish, fruit or vegetables, or other trade or industrial waste which may injure or impair the efficiency or safety of a sewer through deposits forming in the same, or owing to the attacking and weakening of the material of such sewer, shall be discharged in or into any public sewer within the Municipality.

(2) Where it is proposed to instal car-washing racks, sinks, laundry tubs, washing trays, floor wastes, or any other fixture (except toilets) in garages, dry-cleaning establishments, stables, dairies or other premises in which there is a possibility of any of the substances hereinbefore prohibited from entering the sewers of the Municipality, a permit to instal such fixtures, to any person applying therefore, shall not be issued by the Plumbing Inspector of the Municipality until the applicant for such permit shall produce a written certificate from the Municipal Engineer that a satisfactory lay-out and description of protective devices has been submitted to the Municipal Engineer and has been approved by him.

(3) Where floor wastes are used in clinical lecture rooms, laboratories, water closets, bathrooms, washrooms for general public use, hotels, and in club and restaurant kitchens, they must be separately trapped and vented and provided with adjustable strainers, where the same are constructed as provided in Sub-section (8) of

Section 50 of this By-law. Such floors shall have strainers; and clean-outs shall be made of brass, and the same shall be trapped, installed and connected as provided by Sub-sections (1) and (2) of Section 53 of this By-law.

(4) Cuspidor wastes may be connected direct to the plumbing system generally in any building. Wastes and vents of such fixtures shall be installed as provided for in Sub-sections (1) and (2) of Section 53 of this By-law.

WASTES FROM SINKS IN RESTAURANTS, ETC.

57. (1) Waste-pipes from sinks in hotels, lodging-houses, restaurants, and any such buildings as the Plumbing Inspector of the Municipality may direct, shall be connected to a grease-trap constructed of concrete, earthenware or cast-iron, and shall be of such size and design, and shall be of such location, as the Plumbing Inspector of the Municipality shall direct.

(2) Where installation of such traps is not practicable, a grease-trap shall be placed under each sink, which shall be provided with a water jacket, through which shall circulate the cold water provided for general kitchen use. All grease-traps shall be accessible for cleaning at all times.

VACUUM CLEANERS

58. No vacuum cleaner or other mechanical device for the removal of dust, shall be connected with any part of any sewer or drain.

NO STEAM EXHAUST TO CONNECT DIRECT TO SEWER

59. No steam exhaust, blow-off, or drip-pipe shall connect directly with any sewer, house drain, soil or waste-pipe, or with any rain-water conductor. Steam exhausts shall be discharged to a blow-off or condensing tanks of such design, material, size and construction as shall be satisfactory to the Municipal Engineer. The Municipal Engineer is hereby

empowered to specify or require arrangements to be installed or devised to protect any sewer of the Municipality against injury from heat or shock.

WASTES FROM ACIDS

60. (1) Waste-pipes from sinks in photo-engraving plants, battery-charging stations, or any other buildings or places into which acids are liable to be discharged, shall be of heavy lead pipe between the sink and the acid neutralizer. The waste-pipe beyond such neutralizer shall be of medium cast-iron inside the building; but may be of vitrified earthenware pipe outside of such building, provided the joints thereof are caulked with jute or oakum and poured with an approved bituminous cement.

(2) A neutralizer of design, capacity, material and location approved by the Plumbing Inspector shall be installed in all cases between the sewer and the point of discharge of any acid liquid. Such neutralizer shall be properly trapped, and arrangements or devices shall be provided in such case to guard against the seal of such trap being lost through evaporation, and shall be so constructed and installed as to facilitate the easy removal of such neutralizing substance.

BASEMENT AND SEEPAGE DRAINS

61. (1) Every basement, cellar, surface and weeping drain connected with any sewer within the Municipality shall be effectively trapped by means of a properly constructed sump. Such sump shall be provided with an efficient back-water valve on the sewer side thereof, and such back-water valve shall have a water and air-tight cover securely bolted in place, which shall be removable for purposes of examination or repairs at all times.

(2) All such drains so connected shall be vented by a pipe carried to a point above the main roof of the building, and shall have a diameter of four (4) inches in the case of a separate sewer connection; and, when such drains are connected to

any existing house drain, such vent shall be two (2) inches in diameter where such connection is no more than twenty-five (25) feet distant from the trap, in which case the diameter thereof shall be four (4) inches. Where the branch connection to any waste drain is less than five (5) feet in length, such vent may be omitted.

(3) In any low-lying area or district within the Municipality which may be designated by the Municipal Engineer, connections to the Municipal sewer which are required to take the drainage from basements, cellars, surface drains or weeping-tile drains, shall be effectively trapped by means of a sump, which sump shall be of such design, size, material and construction as shall be satisfactory to the Plumbing Inspector. Such sump shall be provided with an efficient back-water valve and tidal-gate valve with bronze working parts and with a handle which shall allow of ready access, even when any basement or cellar may be flooded.

(4) All basement, cellar, surface and weeping-drain traps or sump-traps, where the flow of water therein is not continuous, shall be supplied with a water-drip to ensure a perfect seal therein at all times.

RAIN-WATER CONDUCTORS

62. (1) Any conductor or roof leader, and any surface or ground-water drain, may be connected with the public sewer, provided that, in the opinion of the Municipal Engineer, such sewer is of sufficient capacity.

(2) Where a public basement drain has been provided by the Municipality connection therewith shall be made to such basement drain.

(3) When any such conductors are placed within the wall of any building, or are placed or installed in any inside

court or ventilating-shaft of any building, all such conductors shall be constructed as hereinbefore provided in this By-law in respect of soil-pipes.

(4) Roof connections to inside conductors from any roof gutter shall be made by means of lead pipe, wiped to a brass ferrule and caulked into a cast-iron pipe or corresponding connection for wrought-iron pipe, and the same shall be water-tight and gas-tight.

No such connection shall be made on any roof enclosed within parapet walls, unless such roof is provided with overflow outlets through such parapet walls of sufficient number and size to drain such roof in the event of obstruction to any conductor inlets.

(5) Inside conductors constructed, as prescribed in Sub-section (2) of this Section, which receive rain water from any flat roof, and which do not terminate below or within ten (10) feet of any window or opening, shall not require to be trapped.

(6) All conductor traps shall be vented as prescribed by this By-law for other fixtures, except that if such traps are within five (5) feet of any house drain or sewer such vents may be omitted.

(7) Conductor pipes shall not be used as soil, waste or vent-pipes, nor shall any soil, waste or vent-pipe be used as a conductor.

(8) The sizes of conductors shall be determined by the roof or drain; but no inside conductor shall be less than three (3) inches in diameter if the same is of cast-iron, or less than two (2) inches in diameter if the same is of galvanized wrought-iron.

(9) Outside conductors or down spouts of sheet-metal shall be connected to any sewer by means of a cast-iron pipe of at least one length of cast-iron pipe which shall extend vertically at least four (4) feet above the grade level and

one (1) feet below the grade level, except where conductors are located in courts, yards or lawns, and not liable to be damaged, in which case such connection may be made directly to the hub of such sewer pipe, at least three (3) inches above the grade level, by means of an oakum and cement joint.

(10) No conductor shall project on to the street or lane lower than five (5) feet from the grade of such street or lane.

HOUSE SEWERS AND DRAINS

63. (1) The size of any house-drain sewer which is receiving surface water shall be determined by the total area of the premises and paved surfaces to be drained thereby, and shall be in accordance with the following table in respect thereof:

Diameter of Pipe	Area to be Drained.
4 inches	3,000 square feet
5 "	4,500 square "
6 "	7,000 " "
8 "	15,000 " "

(2) No house drain shall be less than four (4) inches in diameter. The Municipal Engineer, if he deems expedient, may require the installation of a manhole for an eight-inch connection, provided the sewer connects and enters a sewer of the Municipality.

(3) The internal diameters of all traps and waste-pipes for single fixtures in any building shall not be less than the following sizes:

Water-closets	3 inches
Urinals	2 "
Set of three or more urinals	3 "
Slop-sinks, standard or pedestal	3 "
Slop-sinks, ordinary	2 "
Baths	1½ "
Shower baths	2 "
Sinks in dwellings and single suites	1½ "

Sinks in kitchens of hotels, restaurants and boarding-houses	2	inches
Wash-basins	1½	"
Wash-basins, group of three	1½	"
Laundry tubs	1½	"

(4) The diameters of main and branch soil and waste-pipes shall not be less than those given in the following table:

Main soil-pipes	4	inches
Main soil-pipes for water-closets, on eight or more floors	5	"
Main waste-pipe for kitchen sinks, on five or more floors	3	"
Main waste-pipe for baths, on three or more floors	2	"
Main waste-pipe for basins, on four or more floors	2	"
Waste-pipe for basins, on three or less than three floors	1½	"
Waste-pipe for two basins on one floor	1½	"
Waste-pipes receiving over twenty-five minor fixtures	2½	"
Waste-pipes receiving over forty minor fixtures	3	"

(5) Back vents for traps of two (2) inches or less in diameter shall be of the same internal diameter as such trap; for trap fixtures having a greater diameter than two (2) inches, the size of the vent shall not be less than two (2) inches.

(6) Main or branch vent-pipes for minor fixtures shall be of the same diameter as the waste-pipes in connection therewith.

(7) Main or branch vents for fixtures having traps three (3) inches or more in diameter shall be not less than the sizes set forth in the following table:

Diameter of Vent Pipe	Number of Fixtures
2 inches	3 fixtures
2½ "	8 "
3 "	15 "

Such vents may receive a number of back vents from minor fixtures, not, however, to exceed twice the number of major fixtures.

(8) All vent-pipes shall increase one size for every successive forty (40) feet of developed length.

PART VI.

PENALTIES

64. (1) Any plumber who is convicted of a breach of any provision of this By-law shall be liable to have his Trades License as plumber suspended by the Municipal Council for such period as is set out in such resolution or revoked entirely, and it shall be unlawful for any such plumber during the period of such suspension or after such revocation.

(2) Notwithstanding anything in this By-law contained, nothing herein shall be construed to prevent any person, firm or corporation from replacing broken fixtures, provided such replacing does not unseal any sewer or waste; nor from replacing tanks or bibs nor repairing leaks in water pipes on the house-side of any stop and waste pipe.

65. Every person who violates any of the provisions of this By-law or who suffers or permits any act or thing to be done in contravention or in violation of any of the provisions of this By-law, or neglects to do or refrains from doing anything required to be done by any of the provisions of this By-law or who does any act which constitutes a violation of any of the provisions of this By-law, shall be deemed to be guilty of an infraction hereof and shall be liable to the penalties hereby imposed.

66. Any Justice of the Peace, Police Magistrate or other Court before whom a prosecution is had for an

offence against this By-law may convict the offender on the oath or affirmation of any credible witness, and shall impose on the offender a penalty of an amount not exceeding One Hundred Dollars and also the costs of the prosecution, and shall by his conviction after adjudging payment of such penalty and costs order and adjudge that in default of such payment forthwith the same be levied by distress and sale of the goods and chattels of the offender, and, if sufficient distress cannot be found that the offender be imprisoned in the common gaol for any period not exceeding one month and with or without hard labor unless such penalty and costs, and also the costs of the committal and conveyance to gaol, are sooner paid.

67. This By-law may be cited for all purposes as "The BURNABY PLUMBING BY-LAW, 1926."

DONE AND PASSED in Open Council this Twenty-Seventh (27th) day of September, A.D. 1926.

RECONSIDERED AND FINALLY PASSED this Ninth (9th) day of November, A.D. 1926.

REEVE

CLERK

I, Arthur G. Moore, Clerk to the Municipal Council of the Corporation of the District of Burnaby hereby certify the foregoing to be a true copy of a By-law passed by the Municipal Council on the Ninth (9th) day of November, A.D. 1926.

CLERK