THE KINGSTON IMPROVEMENTS ACT

REGULATIONS

(under section 74)

The Kingston and St. Andrew Improvements (Construction and Use of Sewers) Regulations, 1963 L.N. 248/63

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THE KINGSTON AND ST. ANDREW IMPROVEMENTS (CONSTRUCTION AND USE OF SEWERS) REGULATIONS, 1963

(Made by the Water Commission with the approval of the Minister on the 14th day of March, 1963) L.N. 248/63

1. These Regulations may be cited as the Kingston and St. Andrew Improvements (Construction and Use of Sewers) Regulations, 1963. Citation.

2.—(1) In these Regulations unless the context otherwise requires— Interpretation.

"the Commission" means and includes the Water Commission (Corporate Area) or the chairman or acting chairman of the Commission, or any person or persons appointed by the Commission to carry out and enforce these Regulations;

"Engineer" means the Chief Engineer for the time being of the Commission and includes any other engineer of the Commission engaged in the performance of any duties in relation to any of the works of the said Commission;

"owner" means and includes the person for the time being receiving the rent of the land and premises in connection with which the word is used, whether on his own account or as agent or trustee for any other person or who would so receive the same if such land or premises were let;

"occupier" includes every person in possession of the land and premises or any part thereof, in relation to which the word is used.

(2) Any other word or expression appearing in these Regulations which is defined in the Act shall have the meaning assigned to that word or expression in the Act unless the context otherwise requires.

PART I—*Licences*

3.—(1) A person shall not construct, extend, alter, repair or do any work whatsoever in relation to any house sewer, or any fixtures Licences required.

connected therewith, make any connection with any public sewer or junction thereto unless he is duly licensed by the Commission to perform such work and is in possession of a Sanitary Constructor's Licence issued in such form and for such time and subject to such conditions as may be specified from time to time by the Commission.

(2) Every such licence shall be signed by the chairman of the Commission.

Form of application for licence. First Schedule.

4. Any person who desires to be licensed as a Sanitary Constructor shall apply to the Engineer in the form set out in the First Schedule, and shall, if so required by the Engineer, furnish to the Engineer, recommendations in writing from at least two Licensed Sanitary Constructors stating that the applicant is in their opinion, a fit and proper person to be licensed.

Applicant shall satisfy the Engineer as to his competence.

5. An applicant before becoming entitled to be licensed as a Sanitary Constructor shall satisfy the Engineer as to his competence and for this purpose shall answer, either orally or in writing as required by the Engineer, such questions as the Engineer may put to him and shall carry out such work as the Engineer may direct him to do as a test of his competence.

Licence fee and bond.

Second Schedule.

6. On satisfying the Engineer as to his competence and on fulfilling any other requirements of the Act or of any regulations made thereunder, an applicant shall be entitled to be licensed as a Sanitary Constructor on payment to the Commission of a licence fee of ten dollars and on entering into a bond in the form set out in the Second Schedule in the sum of two hundred dollars with two sureties to be approved of by the Commission, conditioned that the licensee shall indemnify the Commission for all damage direct or indirect arising from work done by the licensee or his agents or workmen and for any injury to persons or to public or private property and shall restore any street on which he may work and shall make good any settlement of any ground or pavement that may result from his work to the satisfaction of the Engineer.

Expiration of licences.

7. All licences shall expire on the 31st day of March in the next succeeding year but shall be renewable each year for a period not exceeding one year at a time upon payment to the Commission of a fee or two dollars:

Renewal of licence.

Provided that any Sanitary Constructor who applies for the renewal of a licence may, if the Commission thinks fit, be required to enter into a new bond with two sureties in the same amount and subject to the same conditions as are set out in regulation 6.

8. No licence issued after the coming into operation of these Regulations shall be renewed after a lapse of more than two years from the date of its expiry or the date of expiry of the last previous renewal. In any such case a Sanitary Constructor shall apply for a new licence in the manner hereinbefore provided and the Engineer may, if he thinks fit, again require such Sanitary Constructor to satisfy him as to his competence.

Cancellation of licence.

9.—(1) In the event of any Licensed Sanitary Constructor failing in the due observance of any conditions under which his licence was granted to him or if he or his agents or workmen commit a breach of these Regulations the Commission may at any time cancel or withdraw for such period as it may determine the said licence and notice of such cancellation or withdrawal shall be published in the *Gazette* and in at least two newspapers published in Kingston; but upon any such cancellation or withdrawal the bond entered into by the licensee shall remain in full force and virtue until all the obligations entered into thereunder have been fulfilled.

(2) Upon any such cancellation or withdrawal as aforesaid the licensee shall on being so required in writing deliver his said licence to the Commission.

Offence to permit other than Licensed Sanitary Constructor to do work.

10. Any owner, occupier, or other person who permits or suffers any person other than a Licensed Sanitary Constructor to construct, extend, alter, repair or to do any work in relation to any house sewer or any fixture connected therewith or to make any connection with any public sewer or junction thereto shall be guilty of an offence against these Regulations and the onus of proving that the person permitted or suffered to do such work is a Licensed Sanitary Constructor shall be on the owner, occupier or other person permitting or suffering the said work to be done.

PART II—*General*

No work to be done without consent of the Engineer.

11. No house sewer, water closet, urinal, slop sink, bidet, lavatory, bath, cistern, drain pipe or any other sanitary installation necessary for the conveyance of sewage, house slops, surface or waste water from any premises to the public sewers (whether put in by the owner or occupier) shall be installed, altered or removed without the consent in writing of the Engineer as hereinafter provided. The owner shall be notified by the occupier before any drain, water closet or other fittings are installed, altered or removed.

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Application to execute work.

12.—(1) Any person (hereinafter referred to as "the applicant") who, being the owner or occupier of premises, desires to execute at such premises any drainage or house sewer work, or to extend or alter old or new work (excluding the repair of leaks) connected with the public sewers or drainage system shall apply to the Engineer for permission to execute such work.

Form of application. Third Schedule.

(2) Every such application shall be in the Form A or B, as the case may be, in the Third Schedule, and copies of such Forms may be obtained from the office of the Commission.

Applications to be accompanied by plans.

13.—(1) Every such application shall contain a clear description of the work to be executed and shall be accompanied by plans in triplicate showing the several connections and the location of the several fixtures from the junction at the public sewer to the termination above the roof, and no work shall be proceeded with until such plans have been approved by the Engineer and one copy thereof returned to the applicant. Every application shall also state the names of the owner and the duly Licensed Sanitary Constructor employed to do the work and shall be signed by or on behalf of the applicant.

Plans to be signed.

(2) The plans required as aforesaid shall be signed by the applicant and by the person who has prepared them and who shall certify their accuracy.

Plans submitted to be drawn to specified scale.

14.—(1) All plans so submitted shall be intelligibly and correctly drawn to a scale of not less than one-eighth of an inch to one foot and shall show distinctly—

(*a*) the block plan of all buildings within the premises and the boundaries of the applicant's land and the names of adjoining properties of the proprietors thereof and of adjoining streets;

Plans shall be fully detailed.

(*b*) the position and dimensions of all latrines, kitchens, bathrooms, rainwater channels or pipes, whether existing or proposed to be constructed, together with all house sewers, sinks, gullies, inspection chambers, manholes, and other appliances, which it is proposed to construct, and the location of any such structures already existing on the premises.

(2) The nature of all pavements and exposed surfaces shall also be noted on the plans, together with such other information as in the opinion of the Engineer may be necessary for the purpose of giving force to these Regulations.

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(3) The diameter and gradient of all pipes and junctions proposed to be constructed shall be clearly marked on these plans, together with the levels of such points as may be required for the determination of the said gradients.

Plans shall conform to standard sizes. Fourth Schedule.

(4) The paper or cloth on which such plans are drawn or printed shall, wherever practicable, be of such dimensions as conform with one of the standard sizes set out in the Fourth Schedule and each plan and copy thereof shall have a margin outside of the dimension lines of such width as is specified in the said Schedule for the particular standard size.

Supply of further copies of plans.

15. On being so required in writing by the Engineer an applicant shall supply to the Engineer such further copies of the said plans as the Engineer may direct, and the Engineer may defer considering the said application and plans until such further copies have been supplied.

Examination and verification of plans.

16.—(1) The aforesaid plans shall be examined and verified by the Engineer, who shall make such alterations or corrections, if any, as he thinks necessary for bringing the proposed arrangement into conformity with the provisions of these Regulations and for the general efficiency of the proposed arrangement.

(2) Where the Engineer checks any such plans and after visiting the premises finds them inaccurate a fee of one dollar shall be payable by the applicant to the Commission for every subsequent visit to the premises which the Engineer may make for the purpose of correcting them or ascertaining their correctness.

Plans to be the property of the Commission.

17. On the approval of the plans one copy shall be returned to the applicant and the other copies shall be retained by and be at the disposal of the Commission.

Approved plans to be adhered to.

18. The plans as verified, altered or corrected and finally approved in writing by the Engineer, shall be strictly adhered to in the execution of the work. No deviation from the approved plan shall be made, except with the consent of the Engineer in writing, and any sanctioned deviation shall be clearly marked on the plan and initialled by the Engineer.

Levels to be referred to a fixed datum.

19. All levels inscribed on the said plans shall be referred to the datum-plan adopted by the Commission, which is fifty feet below

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mean sea-level and the Engineer shall furnish on request the elevations of available bench-marks, for the accuracy of which he shall be responsible.

The level and position of the point of junction.

20.—(1) The approximate level and position of the point of junction of the proposed work with the public sewer shall be furnished by the Engineer on application in writing being made to him.

(2) The exact level shall be determined by opening the ground if necessary and exposing the pipe and the house sewers shall be so designed as to connect properly with the said point of junction.

Seven days' notice prior to commencement of work.

21.—(1) When the house sewer plans are approved by the Engineer and returned to the applicant, then upon the expiry of seven days after notice in writing has been given to the Engineer of the applicant's intention to begin the work the construction of the house sewers may be commenced.

Ground to remain open until work is inspected and passed.

(2) After the pipes and other appliances have been laid but before the pipe-trenches have been filled in or before the pipes and other appliances have been covered or concealed in any manner, the applicant or his accredited agent shall give notice in writing to the Engineer that such work is ready for inspection and the Engineer shall inspect and test the work and if he approves the work he shall issue to the applicant a certificate of approval whereupon the work may be covered.

(3) Where any work has been covered with earth or otherwise, before it has been so inspected and approved, it shall, upon the request of the Engineer, be immediately uncovered and exposed at the cost of the applicant.

Notice that defects have been remedied.

22. All defects discovered by the Engineer shall be made good to his satisfaction before the ground is filled in or the pipes covered or concealed. When the defects pointed out by the Engineer have been made good, the applicant or his accredited agent shall give notice to the Engineer that the work is ready for inspection. If on subsequent inspection the work, after testing, is approved by the Engineer he shall issue to the applicant a certificate of approval whereupon the work may be covered but no pipes or other appliances shall be covered or concealed until the applicant receives the above mentioned certificate of approval but even thereafter it shall be lawful for the Engineer to inspect and test the work and any defect discovered shall be made good to his satisfaction at the cost of the applicant.

Certificate of approval.

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Final certificate.

23. After all work has been completed the applicant shall so notify the Engineer in writing and on the approval of the work by the Engineer, the Engineer shall issue to the applicant a further certificate to that effect.

Fee for inspection under certain circumstances.

24. If, on account of the failure to remedy any defects or to complete the work, or if for any other cause for which the applicant or his agent is liable, the Engineer finds it necessary to visit the work more than twice, then the applicant shall pay to the Commission a fee of one dollar for each such additional visit.

PART III—*Quality of Pipes and Fittings*

Samples of materials.

25.—(1) Samples and specifications of materials and appliances to be used in the construction of house sewers may be seen on application at the office of the Engineer.

(2) No pipes, materials or other appliances of a quality inferior to such samples shall be used in the construction of any house sewer, water closet, rain water drain or channel. No pipes, materials or other appliances differing from such specifications shall be used without the special permission in writing of the Engineer.

Quality of materials.

26. The decision of the Engineer as to quality of material and as to the construction or pattern of the appliances to be used shall be final and binding on all concerned.

Brickwork and concrete blocks.

27.—(1) Bricks shall be thoroughly well burned, of the best quality procurable, and shall be set in mortar composed of one part Portland cement and two parts sand.

(2) Precast concrete blocks, where permitted to be used, shall be composed of Portland cement, clean sand and selected aggregates in a proportion approved by the Engineer.

(3) All such precast concrete block shall be of dense concrete, true to size with clean sharp arises and cured for ten days following manufacture. They shall be of the following standard sizes: 16″x8″x8″ or 16″x8″x6″ or 16″x8″x4″ and shall be designed to permit the insertion of reinforcing bars in the manner and direction specified by the Engineer.

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Plastering and rendering.

28. The joints of all exposed and all interior surfaces of brickwork or blockwork shall be raked and the entire interior and exposed surfaces plastered or rendered smooth and true with a mortar composed of one part of Portland cement and two parts of clean sharp sand.

Concrete and concrete aggregate.

29. All concrete unless otherwise specified shall be made of six parts broken stones properly graded and of a size capable of passing through a ring one and one-half inches in diameter with sufficient sand to fill the interstices and one part of Portland cement of approved quality.

Earthenware pipes and fittings.

30. All earthenware pipes, junctions, traps, bends, hoppers and other fittings used below the surface of the ground in connection with house sewers shall be of thoroughly burned, glazed, vetrified, impervious stoneware or earthenware of the best quality, true in form and free from roughness, especially as regards their interior surface and shall have an internal diameter of not less than four inches, and shall be subject in all respects to the approval of the Engineer. Pipes of a greater diameter than four inches may only be used where considered necessary by the Engineer.

Cast-iron pipes.

31.—(1) All cast iron or spun iron pipes shall be of the best quality iron, sound, free from holes or cracks, and shall be coated externally and internally with an approved solution.

Soil pipes.

(2) Soil pipes shall be of light close-grained cast iron or of specially enamelled steel or of such other material as may be approved by the Engineer in each case.

(3) Where cast iron pipes are permitted to be used underground and where any cast iron soil pipe is liable to receive blows or shocks, such pipes shall conform to British Standard No. 1211 for Class B pipes or its equivalent.

Wrought iron or steel pipes.

32. All wrought iron or steel pipes shall be galvanized, and of a strength and quality conforming to British Standard Nos. 788 and 1387 for Class C pipes or their equivalents. All fittings used in connection with wrought iron or steel pipes shall correspond with such pipes in weight and quality.

Copper pipes.

33. All copper pipes shall be generally in accordance with British Standard 2017 copper pipe for general purposes or British Standard No. 1386 for copper tubes to be buried underground.

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Lead pipes.

34.—(1) Lead pipes used only to connect fixtures to vertical soil or waste pipes or to connect traps to vertical ventilating pipes shall be of approved manufacture and shall conform to the following weights:

Nominal Internal Diameter	Minimum Weight in Pounds per linear Yard
½ inch	3
¾ inch	5
1 inch	7
1¼ inches	9
1½ inches	12
2 inches	16

(2) Lead pipes used for other purposes shall comply with British Standard No. 602 (1949) or its equivalent.

Asbestos cement pipes.

35. Asbestos cement pipes where permitted shall conform in all respects to such specifications as may be approved from time to time by the Engineer.

PART IV—*Locally Manfuactured Pipes and Fittings*

Locally manufactured pipes.

Fifth Schedule.

36. No earthenware or stoneware pipes and fittings manufactured locally shall be used for any drainage or house sewer work unless they conform in all particulars with the specifications prepared by the Commission for glazed earthenware pipes as set out in the Fifth Schedule and have been manufactured by a manufacturer who holds a certificate issued in accordance with the provisions of regulation 37.

37.—(1) Any person who manufactures locally glazed earthenware pipes or fittings may apply in writing to the Engineer for a certificate stating that such pipes and fittings conform with the specifications set out in the Fifth Schedule. For the purpose of the issue of such certificate the Engineer shall at any reasonable time have the right to access without notice in order to inspect and test the pipes and fittings.

Issue of certificate to local manufacturer.

(2) Where the Engineer is satisfied that such pipes or fittings conform with the aforesaid specifications he shall issue a certificate to that effect stating that the pipes and fittings manufactured by such manufacturer may be used in the construction of house sewers.

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Revoking certificate.

(3) The Engineer shall have at any reasonable time and without notice the right of access for the purpose of further inspection and test and may revoke any such certificate issued to a local manufacturer if such manufacturer fails to maintain the required standard of quality in the manufacture of glazed earthenware pipes or fittings.

Record of certificates to be kept.

(4) The Engineer shall keep a record of all certificates issued to local manufacturers of glazed earthenware pipes and fittings and of all certificates revoked and such record shall be available for inspection by any person intending to execute, alter or extend any drainage or house sewer work.

PART V—*Construction*

Junction pipes installed by the Commission.

38. A side junction for house sewers for each premises shall be inserted as required in all sewer mains in the streets and lanes, and in every case a branch pipe shall be laid by or at the expense of the Commission from the street sewer to a point on the boundary of the premises at which point the junction of the house sewer shall be made with such branch sewer. The position and level of each point of junction shall be fixed by the Engineer.

More than one junction to be paid for by the applicant.

39. Where it is necessary to provide more than one junction and branch pipe from the main sewer for any one premises, then the cost of every additional junction and branch pipe shall be borne by the applicant. The plan for such work shall not be returned to the applicant nor shall such work be carried out, until the cost of providing the additional junction has been paid by the applicant to the Commission. The position of every such additional branch pipe as shown on the plan shall be indicated on the ground by the applicant.

Inspection chambers, etc.

40. House sewers shall be laid in straight lines from point to point and shall in no part have gradients less than those hereinafter prescribed. A sufficient number of inspection chambers and cleaning eyes, and such other necessary appliances shall be provided to the satisfaction of the Engineer, to enable the interior of the pipe to be inspected during construction, and to provide at all times means for the removal of obstructions without breaking or dislocating the pipes.

Reduction of gradients when permissible.

41.—(1) All house sewers shall have in every part thereof a gradient of not less than one foot in thirty feet:

Provided that a lesser gradient may be adopted with special permission of the Engineer.

(2) Any reduction in gradient shall be made in the portion of the house sewer nearest to the outlet, and shall be made in the main line of the pipe and not in the branches. Where reduction in gradients to be made.

42. If the gradient of a house sewer is less than one in thirty then special means of flushing the sewer shall be provided if required by the Engineer. Provision for flushing.

43. Unless otherwise permitted by the Engineer all underground pipes shall be placed at a depth of not less than three feet below any roadway, and not less than eighteen inches below any other ground level. If such pipes are permitted to be laid at any less depth they shall be properly protected in such manner and with such materials as the Engineer shall direct. Depth below ground and roadway.

44. Every pipe connected with the sewer, whether of earthenware, cast iron or other approved material shall be sound and impervious in all its parts, and be jointed in the best manner. No cement or other jointing materials shall project from the joints, and the pipes shall be cleared from all internal projections and obstructions. Quality of pipes.

45. The joints of earthenware pipes shall be made with good quality hemp or jute gasket followed by mortar composed of equal quantities of best Portland cement and clean sharp sand. Joints in earthenware pipes.

46.—(1) The joints of iron soil, waste and ventilating pipes, except where screw joints are used shall be formed with good quality hemp or jute followed by lead at least one and one quarter inches deep which shall be so caulked that the joints are gas and water tight. Special jointing compounds, other than lead may, by permission of the Engineer, be used. Joints of iron pipes.

(2) Flanged rubber compression ring or other mechanical joints approved by the Engineer may be used in special circumstances.

47. In the case of screwed wrought iron or steel joints, red lead or other approved jointing compound shall be used in making the joint. No paint or putty shall be allowed. No running threads shall be permitted in making screwed joints. Screwed joints.

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Copper joints.

48. Joints on copper pipes may be of the soldered sleeve type or of such mechanical or compression type as may be approved by the Engineer.

Connection of iron and lead pipes.

49. All connections of lead pipes with iron pipes shall be made with a brass sleeve or ferrule of the same size as the lead pipe. The lead pipe shall be attached to the ferrule by a wiped solder joint.

Location of inspection chambers.

50. Inspection chambers shall be provided in the following positions—

(*a*) at every point in a house sewer where two or more sewer lines converge:

Provided, however, that in certain cases with the special permission in writing of the Engineer, underground connections may be made by means of Y branches;

(*b*) at every point in a house sewer where any angle, bend, change in gradient or alteration in size occurs;

(*c*) at every point in the sewer line where there occurs a change in the type of pipe such as from metal to non-metal or from non-metal to metal pipes; and

(*d*) at such points in the house sewer so that no part of the sewer line shall be more than fifty feet distant from the centre of an inspection chamber unless a greater distance is approved in writing by the Engineer.

Design of inspection chamber.

51.—(1) Every inspection chamber or manhole shall measure horizontally not less than three feet by two feet six inches internally and shall be fitted with a strong cast iron manhole frame and movable cover of adequate size, approved design and construction, fixed not lower than the surface of the adjoining ground or floor. The frame shall be securely bedded on 1 : 3 cement mortar with an adequate fillet around the exterior so that the frame shall not move. The minimum size of clear opening for covers on inspection chambers shall be eighteen inches by eighteen inches. The weight and type of manhole cover shall in all cases be such that they are sufficiently strong to bear any traffic likely to pass over them.

(2) The interior corners of all manholes and inspection chambers shall be rounded off on a radius of not less than two inches with a fillet of mortar of the same quality as specified in regulation 28.

(3) The concrete in floors or inverts of manholes and inspection chambers shall be brought to a fine smooth surface properly floated and well worked in with a steel trowel. Suitable channels and benchings shall be formed in the floors of the same, to collect, conduct or convey the sewage. The surface of the said channels shall be rendered smooth and true so as to offer the least possible resistance to the flow of the sewage. Concrete in walls or arches, shall be moulded true on the exposed surface, and shall be brought to a smooth and impervious surface.

(4) Concrete walls, arches and slabs of inspection chambers and manholes shall be reinforced with steel bars of such size and set in such manner as the Engineer may require.

Concrete required at base of vertical pipe.

52. All quarter bends, rest bends or tee pieces set at the base of a vertical soil or ventilating pipe shall be bedded in a block of concrete not less than fifteen inches square and nine inches in depth.

Waste pipes to be trapped.

53. All waste pipes shall be trapped at each separate fixture and as close as possible to the fixture.

Waste pipes to discharge over open gully.

54. All waste pipes connected with all interior plumbing, exclusive of water closets, urinals and slop sinks, shall discharge over open trapped gullies outside the building.

One-pipe system.

55.—(1) Notwithstanding the provisions of regulation 54, where in the opinion of the Engineer the one-pipe or combined system is likely to produce economy or improvement in appearance or is desirable on account of special circumstances, the Engineer may at his discretion and on such conditions as he may prescribe permit the construction of a properly ventilated one-pipe or combined system.

(2) Where the one-pipe or combined system is permitted the following requirements (*a*) to (*e*) shall apply in lieu of regulation 54—

(*a*) All pipes conveying waste water from water closets, slop sinks, urinals, bidets, sinks, baths and lavatory basins shall be joined to a single pipe which pipe shall be connected to the main house sewer. Suitable cleaning eyes shall be provided where required.

(*b*) The sanitary fitments shall be laid out so as to reduce the length of branch waste and ventilating pipes to a minimum.

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(*c*) The trap provided in connection with every fitment shall be ventilated into the open air at a point as high as the top of the main ventilating pipe or into the main ventilating pipe at a point above the highest fitment as connected to such ventilating pipe.

(*d*) Subject to the provision of paragraph (2) of regulation 77 the ventilating pipe from such trap shall have in all parts an internal diameter of not less than two inches where connected with a pipe two inches or more in internal diameter. Where connected to a pipe of an internal diameter less than two inches it shall be of equal bore with the pipe to which it is connected.

(*e*) Every such ventilating pipe shall be connected to the trap in the direction of the flow at a point not less than three inches and not more than twelve inches from the highest part of the trap on that side of the water seal which is nearest to the main ventilating pipe except that where this is not practical such ventilating pipes may by special permission of the Engineer be connected to the horizontal branch pipe between each fixture and close to the connection of each waste pipe with the horizontal branch pipe.

Traps forbidden at base of vertical pipes.

56. No trap shall be placed at the foot of a vertical soil or vent pipe.

Soil ventilating pipe not to be connected with chimney.

57. In no case shall a soil, waste or ventilating pipe be connected with a chimney or smoke stack either internally or externally.

No earthenware or sheet metal pipes to be used as ventilating pipes.

58. Ventilating pipes shall be of cast iron, asbestos cement, specially enamelled steel or of other material specially approved by the Engineer. No earthenware or sheet metal shall be used for ventilating pipes.

Sewage pipes to be water and air-tight.

59.—(1) All house sewers shall be completely water and air-tight and shall be tested for these qualities by hydraulic pressure or otherwise as the Engineer may direct.

Defective pipes and joints.

(2) Where any defective pipes are discovered they shall be removed and replaced by sound pipes; all defective joints shall be re-made so as to be watertight and every part of the work shall be made to conform with these Regulations and be subject to the approval of the Engineer.

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Gully basins, etc., inside buildings

60.—(1) Where it is impracticable for any gully basin, manhole or inspection chamber to be located outside a building or where, on account of subsequent building extensions or alterations, such gully basin, manhole or inspection chamber falls within any building, covered-way or area, it shall be fitted with a specially sealed cover. Such cover shall be both water-tight and air-tight and shall be bolted or so secured to the frame of the basin or chamber that it may be readily removed and replaced when necessary for inspection or cleaning purposes.

Sealing internal manholes.

Bolted cover accesses.

(2) Notwithstanding the provisions of paragraph (1), cast iron accesses with bolted water-tight covers of a design approved by the Engineer may be securely fitted in the chamber invert instead of the sealed cover.

Sealed gullies to be vented.

(3) Every sealed gully basin shall be adequately ventilated by means of a pipe not less than two inches in internal diameter.

Pipes in soft ground.

61. Where sewage pipes are run through soft or yielding ground then—

(*a*) if made of earthenware, such pipes shall first be properly bedded and then surrounded in a mass of cement concrete of such form and thickness as the Engineer may in each case direct;

(*b*) if made of cast iron or steel such pipes shall be securely jointed with yarn and lead.

Sewer and rain-water pipes not to be run under buildings.

62. No sewer or rain-water pipe or channel shall be laid under any building, unless the Engineer certifies in writing that in his opinion it is impracticable or inexpedient to do otherwise.

Sewer and rain-water pipes under buildings.

63. Where it is necessary to lay any sewer or rain-water pipe underneath any building then—

(*a*) if made of earthenware such pipes shall throughout their length under such building be surrounded with concrete at least six inches thick composed of one part Portland cement to two parts clean, sharp sand and four parts clean broken stone;

(*b*) if made of cast iron or steel such pipes shall be securely jointed with yarn and lead, as described in regulation 46.

Buildings constructed over sewers or drains.

64. No building shall be constructed over any existing house sewer save with the written consent of the Engineer. Before the construction of any such building is commenced the sewer if of earthenware shall be exposed and then surrounded throughout its length under the proposed building with concrete at least six inches thick as prescribed in paragraph (*a*) of regulation 63. If the sewer is of cast iron or steel it shall be jointed as provided in paragraph (*b*) of regulation 63.

Inspection chambers required where building covers pipes.

65.—(1) Subject to the provision of regulation 60 every such sewer shall have free connection with the outer air at each end of the building under which it passes. For this purpose an inspection chamber shall be constructed in the sewer line at each end of the building.

(2) The top of every such sewer shall be not less than eighteen inches below the ground surface beneath the lowest floor of such building.

Surface water drains under buildings.

66.—(1) Where it is necessary to lay any surface water drain within or underneath any building such drain shall consist of earthenware pipes of sufficient size to discharge the surface water laid with cement joints and covered with a layer of Portland cement concrete sufficiently thick to protect the pipes from damage.

(2) Where drains are laid in soft ground cast iron or steel pipes securely jointed with yarn and lead shall be used in their construction.

No rain-water pipe to be used for waste water.

67. No pipe used for the purpose of carrying off rain water from the roof of any building shall be used for carrying off sewage or waste water nor shall it be used as a ventilating pipe or antisiphon pipe for any sewer, soil pipe or trap.

Rain water to be excluded from gullies and inlets.

68.—(1) All cisterns, gullies, or other inlets in connection with house sewers shall be raised above the general ground level and shall be surrounded with a concrete kerb not less than six inches high or otherwise protected against the ingress of rain or surface water.

No rain water to enter sewer.

(2) No rain or surface water shall be allowed to enter any house sewer.

Air-conditioning plants.

(3) Condensation and/or waste cooling water from air-conditioning plants shall be discharged over trapped gully basins.

Discharge into public sewers.

69.—(1) The discharge of trade wastes into the public sewers shall be allowed only by special permission of the Engineer in writing and on such terms and conditions as he may specify in each particular case:

Provided always that under certain circumstances such discharge may be prohibited entirely.

The following shall be regarded as trade wastes that shall be excluded from the public sewers—

(*a*) excessively hot liquids;

(*b*) inflammable wastes;

(*c*) wastes containing strong acids or harmful chemicals;

(*d*) highly coloured matters and those creating excessively offensive odours;

(*e*) all wastes of whatever kind which cannot be satisfactorily purified by the normal processes of sewage treatment.

Trade wastes and grease.

(2) No grease or other unctuous substance shall be allowed to enter any public sewer. The sinks of all hotels, restaurants, boarding houses, laundries or any place where such substances are used and which are connected to the public sewer, shall be provided with a grease trap or grease traps of a design approved by the Engineer.

Grease traps.

70. The surface drainage from all garages, motor vehicle service stations or places where mechanical vehicles or other machines are washed shall, before being discharged over a trapped gully basin, first be drained through a properly constructed grease trap of a design approved by the Engineer.

Cleaning grease traps.

71. Every such grease trap shall be cleaned out as often as may be necessary to maintain it in a sanitary condition.

Food-grinders.

72. Waste matter from commercial and domestic food-grinders and similar appliances shall not be discharged into the sewers except by special permission and under such conditions as the Engineer may prescribe.

Swimming pools.

73. Waste water from swimming pools may only be discharged into the public sewers under such conditions and at such rates of flow as may be authorized from time to time by the Engineer in each particular case.

Sump pumps or ejectors.

74. Where the use of sump pumps or ejectors is necessary in installations which lie below the level of the street sewer the following conditions of construction and operation shall apply—

(*a*) the sump shall be constructed of water-proof concrete adequately reinforced or of cast iron;

(*b*) the sump shall provide sufficient capacity to receive the peak sewage or waste flow for thirty minutes;

(*c*) sump discharge pipes to the street sewers shall be provided with check or non-return valves;

(*d*) the sump shall be provided with a gas and air-tight metal cover securely fastened in place;

(*e*) the sump shall be adequately ventilated in accordance with the provisions of these Regulations;

(*f*) the entire installation including ejector or pump together with the prime mover shall be installed in well ventilated and easily accessible compartments;

Ventilating outlet.

75.—(1) A ventilating shaft or shafts as the case may be, not less than four inches in internal diameter, shall be erected at the termination of all house sewers and shall be carried up to a height of not less than two feet above the eaves of the highest building within a radius of twenty feet of such ventilating pipe.

(2) A ventilating wire cage, guard, cowl, or similar protection shall be fitted to the top of all ventilating pipes and shall be of such a form as to protect the ventilating pipe from being choked with leaves and other obstructions.

(3) The total area of the openings in the guard or cowl shall be at least equal to the area of a cross-section of the ventilating pipe to which it is fitted.

Branches exceeding fifteen feet.

76. Where house sewers have branches exceeding fifteen feet in length, each branch shall, in respect of ventilation, be regarded as a separate house sewer unless the Engineer otherwise directs.

Back ventilating.

77.—(1) All trapped pipes which are likely to be subjected to syphonage or back pressure shall be fitted with a ventilating pipe from the crown of the trap.

[The inclusion of this page is authorized by L.N. 4/1976]

(2) Every ventilating pipe from a water closet trap shall have an internal diameter of not less than two inches and where ventilating pipes from more than four water closet traps are combined or are more than thirty feet in length, the internal diameter of the ventilating pipe shall be not less than three inches.

(3) Such ventilating pipes from water closet traps may be connected to a main soil and ventilating pipe only if such connection is made at a point above all other connections.

Back ventilation of multiple connections.

78.—(1) Where two or more fixtures are attached to a single waste pipe, all traps shall be back ventilated.

(2) The ventilating pipes shall be run separately or combined together to a point at least two feet above the eaves of the building.

Air-gap in fixtures.

79. An adequate air-gap shall be provided through free atmosphere between the lowest opening from any pipe or delivery cock supplying water to any tank, plumbing fixture or other device and the flood level rim or overflow of the receptacle.

PART VI—*Water Closets and Fixtures*

Pattern to be approved.

80. All water closets, bidets and fittings connected therewith shall conform generally to British Standard Code of Practice C.P. 305 (1952) and be of patterns approved by the Commission. Each water closet shall be capable of being kept clean with a flush of water of not more than two and one-half gallons for each time the closet is used and shall be provided with a trap or siphon, placed near to the pan and capable of maintaining a sufficient and effective water seal.

Flush tank.

81. Every water closet shall be provided with a siphonic waste-preventing flush tank of satisfactory pattern or with a flush tank of such other type as may be approved by the Engineer.

Capacity two and one-half gallons.

82. No tank giving a greater flush than two and one-half gallons per closet shall be allowed to be used.

Stop cocks reflush tanks.

83. The water service pipe to every flush tank shall be provided with a stop cock.

Overflow pipe.

84. Every flush tank shall be provided with an overflow pipe which shall discharge into the open air, and not into the soil pipe, and shall be arranged in such a manner as to act as a warning pipe.

Flushing valves.

85. Where automatic flushing valves or Flushometers are permitted to be used, such valves shall be of a waste-preventing type and shall be supplied by a pipe of adequate size from a tank giving a volume of water under sufficient head to allow the flushing valves to operate satisfactorily and discharge at each separate operation a volume of water of not more than two and one-half gallons per closet.

Water closets in upper floors.

86. All water closets installed on upper floors shall be connected to cast iron or steel soil pipes not less than four inches in diameter, jointed with lead and gasket or other approved jointing compound and fixed wherever practicable outside the building or in a pipe duct within the building.

Ventilation of sewers not to be obstructed.

87. No trap or any manner of obstruction to the free circulation of air through the whole course of a main house sewer or soil pipe shall be allowed.

Floors of water closet compartments.

88. The floor of every room, cubicle or compartment situated on the ground floor of a building in which a water closet or urinal is installed shall be paved or otherwise provided with a firm non-absorbent surface.

Construction and ventilation of water closet compartments.

89.—(1) The location, dimensions, materials and construction of every compartment in which a water closet or urinal is to be installed shall be subject to the approval of the Engineer and every such compartment shall, except as hereinafter specified, be so constructed that one of its sides shall be an external wall, with a window therein of an area of at least four square feet, of which one-half shall be made to open.

(2) Any compartment as aforesaid which in the opinion of the Engineer cannot be constructed as prescribed in paragraph (1) shall be ventilated by an adequate air shaft extending to the roof above or by some other ventilating device approved by the Engineer.

PART VII—*Baths and Sinks*

Connection of bath and sinks to sewers.

90. No bath, wash basin, lavatory, or sink other than slop sinks, shall be directly connected to any house sewer except in cases where the use of the one-pipe system has been permitted as provided in regulation 55.

[The inclusion of this page is authorized by L.N. 4/1976]

Traps re-baths, sinks, etc.

91.—(1) All waste pipes of baths, wash basins, lavatories and sinks shall discharge over a trapped gully, except where the one-pipe system has been permitted as provided in regulation 55.

Size of waste pipe from basins and sinks.

(2) The main waste pipe of wash basins, lavatories, or sinks, other than slop sinks shall be not less than one and one-half inches in diameter. The diameter of waste pipes from slop sinks shall be not less than three inches.

Size of waste pipes from baths.

92. The main waste water pipe of each bath shall throughout its length have an internal diameter of not less than two inches.

Gratings or strainers.

93. Gratings or strainers shall be provided for the waste pipes of all fixtures except water closets and the net effective area of opening of such grating or strainer over any waste pipe or sink, shall not be less than the area of the outlet from such bath, lavatory, wash basin, or kitchen sink.

Tee fittings.

94. Tee fittings may be used only in connections made to vertical pipes. All other connections shall be made with angle branches.

95.—(1) No waste pipe of any fitment other than a water closet or slop sink shall be connected directly with the soil pipe or trap of any other fixture except in the one-pipe system as provided in regulation 55.

Lead waste pipes.

(2) No waste pipe having an internal diameter of more than two inches shall be of lead unless the waste-water pipe is protected by suitable casings, in which case, lead pipes having a maximum internal diameter of three inches may be permitted.

(3) All baths, wash basins and sinks should be provided with overflows, the diameter of which shall be not less than those specified for waste pipes.

PART VIII—*Urinals*

Construction of urinals.

96.—(1) Every urinal shall be fitted with a basin, stall or trough of glazed material. If of the basin type, each fixture shall be separately connected with the soil pipe by means of a pipe of lead, copper, cast iron effectively protected from corrosion, galvanized wrought iron, galvanized malleable iron, or other material of accepted British Standard or equivalent and approved by the Engineer and having a trap of an internal diameter of not less than two inches.

[The inclusion of this page is authorized by L.N. 4/1976]

(2) If a urinal is of the trough type, the trough shall be connected with the soil pipe by means of a glazed stoneware pipe or pipe of other approved material having a trap and an internal diameter of not less than four inches.

Stall type urinal.

(3) If a urinal is of the stall type, a properly graded glazed channel shall be provided along the bottom of the stall and shall lead to a glazed stoneware trap having an internal diameter of not less than four inches.

(4) All traps shall have a deep, effective water seal, shall have easy and effective access for cleaning and shall be covered with a strong movable grid.

Urinal to be fitted with automatic flush tanks.

97.—(1) Every urinal shall be fitted with a suitable and efficient automatic flush tank with a capacity of one gallon for each basin, or for each two feet three inches of length of stall or trough. Such tank shall be so installed as to be separate and distinct from any tank used for drinking water.

Flush tanks.

(2) Every flush tank shall be capable of being filled in not more than twenty-five minutes or such less period as may be necessary for the satisfactory cleansing of the fixture and the supply pipe to every such tank shall be fitted with two effective stop cocks in easily accessible positions, one being of the screw down type for regulating the supply to the tank and the other for shutting off the supply.

Water supply to urinals.

98. Whenever the urinal is in actual use, or about to be used, the water supply to the flush tank shall be turned on but at all other times shall be kept shut off.

No direct connection with water service pipe.

99. No connection shall be made directly from any water service pipe with any basin, stall or trough urinal.

Flushing pipes.

100. The flushing pipe shall be made of copper, brass, galvanized wrought iron or other material approved by the Engineer with a minimum internal diameter of half an inch and shall be connected to the fixture by a spreader pipe capable of distributing the flushing water over the whole internal surface of the basin, stall or trough.

Manually operated tank.

101. The Engineer may, upon application duly made, sanction the use of a manually operated flush tank in a private dwelling-house instead of an automatic flush tank, subject to such special conditions, if any, as he may prescribe.

[The inclusion of this page is authorized by L.N. 4/1976]

PART IX—*Surface Water Drainage*

Conditions under which surface washings may be admitted to house sewers.

102. In the case of court-yards and like areas the surface washings of which are likely in dry weather to be foul or offensive, closely grated sinks or gully basins may, with the sanction of the Engineer, be provided to carry off the said surface washings to the house sewer. The surface provided with such sinks or gully basins shall be paved or otherwise arranged so that no sand or detritus may be washed therefrom to the house sewer, or thereon from surrounding areas.

Floors to be elevated.

103. The flooring of all stables and cow-sheds shall be paved and elevated above the level of the ground outside and shall be provided with surface channels discharging over a trapped gully basin fixed outside the building.

Open channels or gutters.

104. All open channels or gutters constructed to convey any waste water from stable floors and cow-sheds to open trapped gullies shall be properly paved and so constructed as to exclude therefrom all rain water draining from roofs and from the surface of the ground.

Cleaning of cess-pits.

105.—(1) Where required by the Commission by notice in writing all cess-pits or absorption pits situated in premises for which connection to a street sewer is available and has been effected, shall be cleaned out, thoroughly disinfected, and filled up to the satisfaction of the Engineer by the owner of such premises within such time as shall be specified in such notice.

Closet set over cess-pit.

(2) Where any water closet is placed over the cess-pit or absorption pit, such water shall be bedded on a solid cement concrete covering over such cess-pit and shall be constructed and supported in a manner approved by the Engineer.

Restrictions re-filth.

106.—(1) No person shall throw or deposit any liquid or solid filth, faeces or urine on the surface of the ground.

(2) Except as otherwise provided in these Regulations, no person shall throw or deposit in, or cause or permit to be thrown or deposited in any vessel or receptacle connected with the public sewer, any matter whatsoever except faeces, urine, toilet paper and liquid house slops.

[The inclusion of this page is authorized by L.N. 4/1976]

PART X—*Legal*

All installations to be maintained in accordance with Regulations.

107. Every owner or occupier of premises on which any sewer, water closet, urinal, drain, slop sink or other sanitary installation has been installed, or is being installed, and every person who is or has been concerned in the installation of any sewer, water closet, urinal, drain, slop sink or other sanitary installation on any premises, shall ensure that the same has been or is being installed, and is maintained in accordance with the provisions of these Reguations.

Penalties.

108. Any person who contravenes any of the provisions of these Regulations shall be liable to a fine not exceeding ten dollars.

[The inclusion of this page is authorized by L.N. 4/1976]

FIRST SCHEDULE (Regulation 4)

THE KINGSTON IMPROVEMENTS ACT

Form of Application for Licence as a Sanitary Constructor

The Chief Engineer
of the Water Commission.

Sir: I.....of.....

with business premises at.....
hereby apply to be licensed as a Sanitary Constructor in accordance with the provisions of the Kingston Improvements Act and the Regulations made thereunder; and I agree in the event of my application being granted to enter into a Bond as required by the Regulations, and I propose

Mr.....of.....and

Mr.....of.....

as sureties willing to be bound jointly and severally with me in the sum of two hundred dollars for the due fulfilment of my obligations.

My qualifications and sanitary experience are as follows:—

Date of Birth.....Education.....

.....

.....

Experience in Sanitary Construction:.....

.....

.....

.....

.....

I hereby declare that the information furnished by me above is a true and accurate statement.

Dated this.....day of.....19.....

.....
Signature of Applicant

SECOND SCHEDULE (Regulation 6)

THE KINGSTON IMPROVEMENTS ACT

BOND

Know All Men by these Presents That we.....

.....

of the city of Kingston (hereinafter called "the Licensee") and.....

.....

and .....

also of Kingston aforesaid his sureties are held firmly bound unto The Water Commission and their successors and assigns (hereinafter called "The Commission") in the sum of two hundred dollars, to be paid to the said Commission.

For which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, firmly by these presents.

Sealed this.....day of.....

in the year of Our Lord One Thousand Nine Hundred and.....

Whereas the Licensee has made application to be licensed as a Sanitary Constructor in connection with the Sewerage System of Kingston and Saint Andrew; And whereas a Licence has been granted to him conditional upon the execution of this Bond pursuant to the Kingston Improvements Act and the Regulations made thereunder:

Now therefore the condition of this obligation is such that if the Licensee shall during the continuance of his said Licence and every renewal thereof well and faithfully and in a workmanlike manner perform all the plumbing and other work entrusted to or undertaken by him touching the construction, extension, alteration or repair of house sewers, drains and water closets or otherwise relating to the Sewers or Sewerage System of Kingston and Saint Andrew and if the Licensee shall also carry out the provisions of all laws and regulations relating to sewerage or drainage and shall obey the orders of The Commission or of the persons acting under the authority of The Commission and if the Licensee shall at all times save and indemnify The Commission and also every person affected from all costs, damages and expenses directly or indirectly arising from any negligence of the Licensee or his agents, servants or employees or from any injury to persons or to public or private property by any act of the Licensee or his agents, servants or employees and if the Licensee shall also restore the street to the satisfaction of the Chief Engineer of The Commission and make good any settlement of the earth or pavement that may result from any work done by the Licensee or his agents, servants or employees, then this obligation shall be void, otherwise the same shall remain in full force and virtue.

Signature of Licensee	...	...	(Seal)
Signature of Surety	...	...	(Seal)
Signature of Surety	...	...	(Seal)

Signed, sealed and delivered in the presence of:—

THIRD SCHEDULE

THE KINGSTON IMPROVEMENTS ACT

Regulation 12 (2) FORM A

Form of Application for premises to be connected with Street Sewers

1.	Situation of premises name and number on Street	....
2.	Name and address of owner in full	....
3.	Name of tenant and nature of tenancy	....
4.	Description of premises and whether dwelling, store, etc., state if there is an open yard in connection with the Street or Lane	....

THIRD SCHEDULE, *contd.*

FORM A, *contd.*

5. Number of persons residing or employed on the premises	.....
6. Nature and extent of proposed Sanitary Arrangements	.....
7. Description of water closet and flush tank to be used	.....
8. Name and address of Sanitary Constructor by whom the work is to be executed.	.....
9. General remarks:	.....

(Signature of Applicant) .....

(Address) .....

(Date) .....

To the Chief Engineer,
The Water Commission,
4, Marescaux Road,
Kingston 5.

NOTE: Plans in triplicate showing clearly the location of all proposed house sewers, water closets, waste pipes, gully traps, grades and depths of sewers, etc., must accompany this application and no work must be commenced until such plans have been approved.

THE KINGSTON IMPROVEMENTS ACT

FORM B Regulation 12 (2)

Form of Application for Extension, Alteration or Repair of House Sewers

1. Situation of premises name and number on Street	.....
2. Name and address of owner in full	.....
3. Name of tenant and nature of tenancy	.....
4. Nature and extent of proposed extensions, alterations or repairs to closet, drain or sanitary appliances or fittings.	.....

SCHEDULE, *contd*

FORM B, *contd.*

5. Description of water closet and flush tank to be used ....

6. Name of Sanitary Constructor by whom the work is to be executed ....

7. General Remarks: .....

(Signature of Applicant) .....

(Address) .....

(Date) .....

To the Chief Engineer,
The Water Commission,
4, Marescaux Road,
Kingston 5.

NOTE: Plans in triplicate showing the location of existing sewers, drains, etc., and indicating the proposed alterations, or extensions, must accompany this application and no work must be commenced until such plans have been approved.

Regulation 14 (4)

FOURTH SCHEDULE

Standard Sizes of Plans to be submitted

Size A shall be 12½″ long x 7½″ wide and shall have a margin outside these dimension lines of ¾″ on the left of the plan and ¼″ on the other three sides.

Size B shall be 10″ long x 15″ wide and shall have a margin outside these dimension lines of 1½″ on the left side of the plan and ½″ on the other three sides.

Size C shall be 16″ long x 23½″ wide and shall have a margin outside these dimension lines of 1½″ on the left of the plan and ½″ on the other three sides.

Size D shall be 24½″ long by 32″ wide and shall have a margin outside these dimension lines of 1½″ on the left side of the plan and ½″ on the other three sides.

Size E shall be 30″ long x 50″ wide and shall have a margin outside these dimension lines of 1½″ on the left side of the plan and ½″ on the other three sides.

Size M shall be any size larger than Size E and shall have a margin outside these dimension lines of 1½″ on the left side of the plan and ½″ on the other three sides.

All plans shall have a Title block on the lower right side of a size of not less than 2⅜″ long x 4½″ wide.

[The inclusion of this page is authorized by L.N. 4/1976]

FIFTH SCHEDULE Regulation 37 (1)

THE KINGSTON IMPROVEMENTS ACT

SPECIFICATION FOR GLAZED EARTHENWARE PIPES

1. Except where specified otherwise, PIPES shall be deemed to include straight pipes, junctions, gullies, bends and other fittings used in connection with house drains and general plumbing work.

2. All pipes shall be of thoroughly fired and glazed earthenware made from carefully selected clay of good quality. The glazing shall cover at least all interior and exterior surfaces which remain exposed after jointing and the interior surfaces shall be entirely free from projections.

3. All straight pipes shall satisfy the following standards and all other pipes shall satisfy the appropriate standards.

(a) *Lengths of Straight Pipes*

Up to and including 6 inches	2 feet
7 inches to 10 inches inclusive	2 feet and 2 feet 6 inches
12 inches and over	2 feet
	2 feet 6 inches and 3 feet

(b) *Sockets*

The internal shoulders of all sockets shall be square.

(c) *Grooving*

The interior of sockets, and the exterior of spigots for a length equal to $1\frac{1}{2}$ times the depth of the socket shall be grooved to a depth of not less than 1/16 inch.

(d) *Permissible deviation from Straightness*

One quarter of an inch for all pipes.

(e) *Minimum Internal Depth of Socket*

Up to and including 7 inches	$2\frac{1}{4}$ inches
8 inches to 12 inches inclusive	$2\frac{3}{4}$ inches.

(f) *Thickness of Barrel and Socket*

Up to and including 4 inches	$\frac{1}{2}$ inch
5 inches and 6 inches	$\frac{3}{8}$ inch
7 inches, 8 and 9 inches	$\frac{3}{4}$ inch
10 inches and 12 inches	1 inch.

(g) *Permissible Variation in Thickness*

One eighth of an inch for all pipes.

(h) *Permissible deviation from Standard Diameter*

One quarter of an inch for all pipes.

[The inclusion of this page is authorized by L.N. 4/1976]

FIFTH SCHEDULE, *contd.*

(i) *Minimum Internal Diameter of Socket*

4 inches	6¼ inches
5 inches	7¼ inches
6 inches	8¼ inches
7 inches	9¼ inches
8 inches	11 inches
9 inches	12 inches
10 inches	13¼ inches
12 inches	15¼ inches

(j) *Hydraulic Test*

All pipes shall withstand an internal hydraulic pressure of 15 feet maintained for one hour without showing signs of injury or leakage.

4. The manufacturer shall at his own expense supply on request any test piece or pieces which may be required by the Commission for carrying out the tests and examinations in respect to the Standard Specification on this type of article.

5. Every pipe and fitting shall before it leaves the factory have legibly impressed upon it the trade marks of the manufacturers.

6. The Engineer may, where any of the above conditions have been violated, revoke any certificate granted for the manufacture of such pipes for use in sewerage installations to be connected with the street sewers of the Water Commission.

[The inclusion of this page is authorized by L.N. 4/1976]