

THE TERRITORY FOR THE SEAT OF GOVERNMENT.

Regulations under the Building and Services Ordinance 1924.

I GEORGE FOSTER PEARCE, the Minister of State for Home and Territories, pursuant to the powers conferred upon me by the *Building and Services Ordinance 1924*, hereby make the following Regulations, to come into operation forthwith.

Dated this 16th day of October, 1924.

G. F. PEARCE,
Minister of State for Home and Territories.

CANBERRA SEWERAGE AND WATER SUPPLY REGULATIONS.

PART I.—PRELIMINARY.

- Short title. 1. These Regulations may be cited as the Canberra Sewerage and Water Supply Regulations.
- Parts. 2. These Regulations are divided into Parts, as follows:—
Part I.—Preliminary.
Part II.—Registration of plumbers.
Part III.—Sewerage and drainage.
Part IV.—Water supply.
Part V.—Rates and charges and penalties.
- Definitions. 3. In these Regulations, unless the contrary intention appears—
“Approved” means approved by the proper authority;
“Authorized” means—
(a) when used with respect to fittings and drainage apparatus—authorized by these Regulations or by the proper authority;
(b) when used with respect to officers—authorized by the proper authority either generally or for any particular purpose;
(c) when used with respect to an agent—authorized by written authority from the lessee.
“Cement concrete” means concrete consisting of one part approved Portland cement, three parts of clean sand, and five parts of approved stone or gravel broken to 1½-inch gauge by volume;
“Cement mortar,” used in reference to jointing, means mortar consisting of one part of approved Portland cement to one part of clean sand by volume;
“Disconnecter trap” means a trap in which provision is made for inlet ventilation to the pipe or pipes discharging therein;

- “External closet” means any closet which is entered directly and solely from the open air and not from any building;
- “Government pipe” means any pipe forming part of any water supply system provided by or under the authority of the Commonwealth Government;
- “Internal closet” means any closet other than an external closet;
- “Ordered” means ordered by the proper authority or by the inspector;
- “Supervising Officer” means any person appointed or employed by the Minister as a Supervising Officer, and includes any person temporarily authorized by the proper authority to act as a Supervising Officer;
- “The City Area” means the city area specified under the *City Area Leases Ordinance 1924*;
- “The Engineer” means any person appointed or employed by the Minister as Sewerage Engineer or Engineer for Water Supply, as the case may be, and includes any person from time to time acting for that person;
- “The Inspector” means any person appointed or employed by the Minister to inspect, pass, or approve of any work to which these regulations apply, and includes any person temporarily authorized by the proper authority to act as an Inspector;
- “The lessee” means the lessee, under the *City Area Leases Ordinance 1924*, of land on which any sewerage or water service has been, or is to be, installed;
- “The proper authority” means any person appointed by the Minister to be the proper authority for the purposes of these Regulations;
- “The sewerage system” means the sewerage system provided by or under the authority of the Commonwealth in the City Area.

PART II.—REGISTRATION OF PLUMBERS.

4.—(1.) The proper authority may issue to any person a sanitary plumber's licence or a water supply plumber's licence, in a form to be determined by the proper authority, upon compliance with the conditions prescribed in these Regulations. Plumber's licences.

(2.) Every licence issued under this regulation—

- (a) shall expire on the thirty-first day of December in the year in which it is issued, but may be renewed from time to time upon payment of the prescribed fee; and
- (b) shall be subject to cancellation or suspension at the discretion of the proper authority.

5. No licence shall be issued under the provisions of these Regulations unless the applicant satisfies the proper authority— Conditions of issue of licences.

- (a) in the case of an applicant for a sanitary plumber's licence—that he has passed a satisfactory course of plumbing handicraft at a Technical School in Sydney or Melbourne, or holds a current licence of an equal standard from any sewerage or water supply authority;
- (b) in the case of an applicant for a water supply plumber's licence—that he is a competent plumber, and has passed such examination (if any) as the proper authority requires;
- (c) that he is not under the age of 21 years; and
- (d) that he has a sufficient knowledge of these Regulations,

and, before receiving his licence, the applicant shall sign, in a register to be kept by the proper authority, a declaration that he will conform to, and comply with, the conditions of the licence and the provisions of these Regulations, and shall pay the prescribed fee.

Fees.

6. The fees to be paid in connexion with licences issued under these Regulations shall be as follows:—

For issue of each licence 10s. 6d.
For annual renewal 2s. 6d.

Sanitary plumbers to be licensed.

7.—(1.) No person shall execute or perform any work in the nature of sanitary plumbing unless he holds a sanitary plumber's licence issued in pursuance of these Regulations.

Penalty: Ten pounds.

(2.) Notwithstanding anything contained in this regulation, a person who holds a water supply plumber's licence may execute any water supply plumbing necessary to sanitary work, and, if lead is not used, may perform work such as fixing cisterns and water-closet pans in outside buildings.

Water supply plumbers to be licensed.

8. No person shall affix any service pipe to a Government pipe, or alter, repair, or in any way interfere with any Government pipe or any service pipe, cock, or fitting connected therewith, or lay any pipe so as directly or indirectly to communicate with a Government pipe unless he holds a water supply plumber's licence issued by the proper authority.

Employment of unlicensed plumbers.

9.—(1.) No person shall engage or employ for the actual performance of any plumbing work any plumber or workman who is not the holder of a licence authorizing him to perform that class of work.

Penalty: Ten pounds.

(2.) Where the licence of any plumber or workman has been suspended or cancelled, it shall be a good defence in any prosecution for any offence against this regulation if the defendant proves that he was not aware of the fact of the suspension or cancellation of the licence.

PART III.—SEWERAGE AND DRAINAGE.

Interference with drains.

10. No person, whether or not he is the holder of a sanitary plumber's licence or water supply plumber's licence, shall alter, remove, or in any way interfere with, any drain, fitting, pipe, bend, trap, or other thing connected with the sewerage system, without the consent, in writing, of the proper authority.

Penalty: Ten pounds.

Connexions to be made in accordance with Regulations.

11. All connexions of plumbing work, drains, or sewers with the sewerage system shall be executed in accordance with these Regulations.

Applications for permission to connect with sewerage system.

12.—(1.) Application for the approval of the proper authority to connect with the sewerage system, or to do plumbing work connected therewith (including all extensions, alterations, or amendments), shall be made in writing by the lessee of the property to be drained or by his authorized agent.

(2.) The application shall set forth—

- (a) the description of the site of the property;
- (b) the name of the lessee; and
- (c) the name of the person employed to do the work;

and shall be in the form required by the proper authority.

(3.) No approval shall be deemed to authorize anything not stated in the application.

Conditions to be complied with before approval.

13. No approval to connect with the sewerage system shall be given unless—

- (a) provision is made for all plumbing to be executed in accordance with these Regulations;
- (b) the plan has been approved by the proper authority; and
- (c) in the case of new buildings, the proper authority has fixed the position of the branch at which the connexion is to be made, and a proper plan of the plumbing and of the drainage of the building to be connected has been submitted to, and approved in writing by, the proper authority.

Work to be done under direction of superintending officer.

14. All connexions with the drains or sewers, and all plumbing connexions therewith, shall be made under the direction of a Supervising Officer.

15.—(1.) Plans will be furnished by the proper authority upon payment of the following fees:— Fees for plans.

	<i>s.</i>	<i>d.</i>
Plan of drainage, including survey, &c., for every house or building when not more than one water-closet is provided	5	0
For every additional water-closet	5	0
Plan of any amendment of original plan	2	6
Plan of completed drainage	5	0

(2.) The fee for amendment of plan is to be taken as meaning a charge of Two shillings and sixpence for complete plan as amended.

16. In order to facilitate the submission of plans, the proper authority will supply, at the rate of Two shillings and sixpence for each tenement, plans of individual tenements showing the position of the sewer and the position of the branch to which the house drain must be connected, marked in red, and having the depth of the branch indicated thereon. Plans of individual tenements.

17. If tracings of groups of houses are required, together with the positions and depths of the branches marked thereon, they will be supplied on payment of the cost of the tracing at award rates in force according to the draughtsman's time occupied thereon. Tracings.

18.—(1.) The lessee or his authorized agent shall give not less than forty-eight hours' notice, in writing, to the proper authority before commencing any work to which this Part applies, and shall report when any work is ready for inspection. Notice to be given by lessee.

(2.) All work shall be left uncovered and convenient for examination until inspected and approved by the inspector.

(3.) Inspection shall be made within forty-eight hours after the receipt of the notification that the work is ready for inspection, unless the notification is received on a Saturday, in which case the inspection shall be made within seventy-two hours after the receipt of the notification.

19.—(1.) Every house drain shall be thoroughly tested by the Inspector before being passed, and in the event of any drain being at any time altered or repaired, it shall be thoroughly tested by the Inspector before those alterations or repairs are passed. Testing.

(2.) The Inspector may apply the water, smoke, or air-pressure test, and the lessee, or his authorized agent, shall furnish such tools, labour, and assistants as are necessary for each of those tests.

(3.) The special testing apparatus necessary for each of those tests shall be supplied by the proper authority.

(4.) The lessee or his authorized agent shall make good any defect when and as directed by the Inspector, and if he neglects or fails to do so, he shall be guilty of an offence.

(5.) Before the fittings are connected with the plumbing of any house or building, or, if so ordered, after the fittings are so connected, and before the soil or waste pipe is connected to the sewer, the outlet of the soil or waste pipe, and all openings into it below the top, shall be hermetically sealed. The pipe shall then be filled with water to such height as the Inspector requires, and every joint carefully examined for leaks.

(6.) Work already in place may be tested as and when required by the proper authority.

(7.) Defective pipes shall be removed and replaced by sound ones and all defective joints made tight, and every part of the work shall conform to these Regulations and be subject to the approval of the Engineer or Inspector.

20.—(1.) Any drain, soil pipe, waste pipe, trap, water-closet, urinal, sink, bath, or other sanitary convenience or drainage apparatus which is laid or constructed otherwise than in accordance with these Regulations, or which, in the opinion of the proper authority, is of bad or defective quality, shall, upon receipt of a notification to that effect from the proper authority, be removed or repaired by the lessee in the manner determined and within the time fixed by the proper authority. Defective work, &c.

(2.) If the lessee neglects or fails to comply with the requirements of the notification within the time fixed, he shall be guilty of an offence, and the proper authority may, if it thinks fit, remove or repair the sanitary convenience or drainage apparatus, and may recover the cost thereof from the lessee.

Notice to be given by plumbers.	<p>21. Before a licensed plumber commences to effect any repair or renewal of any drains, drainage apparatus or sanitary convenience, or the cleansing thereof, he shall give twenty-four hours' notice, in writing, to the proper authority so that an Inspector may attend:</p> <p>Provided that in cases of emergency he shall give the proper authority such notice as the circumstances in each case permit, and forthwith, after commencing the work, shall give notice thereof, in writing, to the proper authority.</p>
Statements to be filed after completion of work.	<p>22.—(1.) The person authorized to carry out any work shall, within seven days after the completion thereof, file in the office of the proper authority, on forms furnished for the purpose, a correct statement of the work done under the approval given.</p> <p>(2.) The statement shall be countersigned by the Inspector.</p>
Drainage of houses to be separate.	<p>23. The drainage of each house shall be arranged for separately, except in cases of properties belonging to the same owner, or where, in the opinion of the proper authority, special reasons exist for draining by a combined operation.</p>
Quality of pipes, &c.	<p>24. All pipes, bends, junctions, and traps used shall be of good, sound quality of glazed stoneware or concrete or cast iron, or other suitable material approved by the proper authority.</p>
Size of drains.	<p>25. Every drain shall be of such size as, in the opinion of the proper authority, is adequate for the drainage of the property on which it is to be laid, and shall have an internal diameter of not less than 4 inches.</p>
Position of drains.	<p>26. Every drain and branch drain, and every trap or other drainage apparatus connected therewith, shall be laid and fixed where and as directed by the proper authority.</p>
Bends.	<p>27. Every drain shall be laid in a straight line as far as is practicable, and where changes of direction are necessary, every such change shall be made in a manhole and inspection chamber or proper bend, and junction pipes shall be used in such manner as the proper authority directs.</p>
Combined drains.	<p>28. Combined drains shall be provided with an inspection chamber at each junction.</p>
Drains under buildings, &c.	<p>29.—(1.) Except in cases where no other mode of construction is practicable, a drain shall not be constructed to pass under any building.</p> <p>(2.) Where it is necessary to construct a drain under any building the drain shall be constructed in a direct line for the whole distance under the building and, if formed of stoneware, shall be completely embedded in and covered with solid cement concrete at least 6 inches in thickness all round the barrel of the pipe:</p> <p>Provided that, if the lowest floor of that part of the building under which the drain is laid is not less than 4 feet clear above ground, the drain need not be so embedded in and covered with concrete.</p> <p>(3.) If the drain is formed of cast iron, the metal shall be not less than $\frac{3}{8}$ inch in thickness, and shall be supported in such manner as the proper authority directs.</p> <p>(4.) All drain pipes carried through walls shall have a space of 3 inches clear left above the pipes.</p>
Gradient, &c. of drains.	<p>30.—(1.) All drains shall be laid with suitable regular gradients, and in no case shall the inclination of a 4-inch drain be less than 1 foot in 40 feet; of a 6-inch drain, less than 1 foot in 60 feet; of a 9-inch drain, less than 1 foot in 300 feet; or that of a 12-inch drain, less than 1 foot in 400 feet; unless special permission is obtained from the proper authority, in which case the proper authority may require special provision to be made to ensure regular and efficient flushing.</p> <p>(2.) In no case, except by special permission of the proper authority, shall the grade for 4, 6, 9, or 12-inch drains be steeper than 1 in 10, 1 in 15, 1 in 20, or 1 in 25, respectively.</p> <p>(3.) Holes shall be cut in the bottom of the pipe trench to receive the sockets of the drain pipes, and all pipes shall be carefully bedded with the barrel on the solid ground or, when ordered, the pipes shall be bedded on sand, gravel, or other approved material.</p>
Joints of pipes.	<p>31.—(1.) The joints of stoneware and concrete pipes shall be filled in solidly all round with cement mortar, and neatly splayed off, or, if so ordered, hemp gasket, soaked in cement, or other material shall first be driven into the joint all round, and the remainder of the joint filled in with cement mortar and neatly splayed off.</p>

(2.) The joints between stoneware and cast-iron pipes shall be made in the same way as those between stoneware pipes.

(3.) The joints of cast-iron pipes shall be made with gasket and lead and well caulked.

32. In water-charged ground, or where the foundation is bad, or where the cover is deemed to be insufficient to protect stoneware or concrete pipes, or near cellars or basements, and in other places, if the proper authority so directs, the drain shall be formed of cast-iron pipes $\frac{3}{8}$ inch in thickness, or of stoneware or concrete pipes bedded in concrete foundations and encased with concrete. Special pipes in certain places.

33. Drains of stoneware pipe, unless bedded on and encased in concrete, shall be laid at a depth of not less than 2 feet between the surface of the ground and the centre line of the pipe. Depth of pipes.

34. When any drain joins another drain, the junction shall be made obliquely in the direction of the flow of the second mentioned drain; right-angled junctions shall not be made. Junctions.

35.—(1.) The trench for the drain from any property shall be dug so as to meet the end of the branch sewer, or of the junction provided or to be provided for the connexion. Trenches.

(2.) The face of the trench nearest the branch sewer shall, where ordered, be filled up with brick or rubble masonry, or timbered up as directed.

(3.) In refilling the trench, sand, gravel, or other approved material shall be first deposited round the sides of the pipe, and to a height of 1 foot over the barrel of the pipe, and carefully wetted with water; after which the remainder of the trench shall be filled in, in layers of 1 foot in thickness, each well wetted with water, and rammed. The surface material shall then be restored, as nearly as possible, to the same condition in which it was before operations were commenced.

(4.) Except by special permission of the proper authority, the filling in shall not be commenced till a period of not less than twenty-four hours has elapsed after the completion of the jointing, and, if so ordered, the drain shall be kept full of water till the filling in has been completed.

36. Every inlet to any drain not being an inlet provided as an opening for the ventilation of a drain or for inspection purposes, shall be properly trapped, and all such drainage traps shall be fixed outside buildings. Inlets to be trapped.

37.—(1.) An interceptor trap shall be fixed in the drain laid from any property to a sewer, if the proper authority so directs. Interceptor traps to be fixed in certain cases.

(2.) Where the sewer is laid in a street, the trap shall be fixed as near as practicable to that boundary of the property which is adjacent to the sewer.

(3.) Where the sewer is on private property, the trap shall be fixed as near as practicable to the sewer, but shall be within the boundaries of the property to be drained.

(4.) If ordered, the interceptor trap shall be fixed in an approved manhole.

38. The top of every gully, basin, and disconnector-trap, shall be above the level of the surface of the yard, ground, area, or place in which it is fixed, and arranged so as to prevent the inflow of rain and surface water. Top of trap to be above surface level.

39. Cement concrete shall be used in each of the following cases:—
(a) around and under gully basins;
(b) around the top of ventilator pipe sockets and disconnector trap tops (in each case finished off in cement mortar);
and
(c) under and around bends and shafts rising off the drain. Cement concrete to be used for certain work.

40. The ends of all private drains not immediately connected with the plumbing fixtures, and all inspection openings, shall be securely closed with watertight imperishable materials. In the case of stoneware drains, a stoneware or cast-iron disc shall be cemented in; in the case of wrought-iron drains, a plug shall be screwed on the end; and, in the case of cast-iron drains, a cast-iron plug shall be caulked in with lead. Method of closing ends of private drains, &c.

- Cover to
interceptor
traps and
manholes.
Inspection
openings.
41. Interceptor traps and manholes shall be carried to the ground surface and there furnished with approved cast iron airtight covers.
42. Every line of main or branch drain shall be provided with an inspection opening at each junction not provided with an inspection chamber, and in no case at greater than 40 feet intervals; and in paved areas the drain shall be brought to the surface and furnished with an approved airtight cover.
- Drainage from
cellars, &c.
- 43.—(1.) Where any building has its lowest floor at a lower level than the sewer into which the premises would otherwise drain, the owner shall cause the drainage from that floor to be raised by a method approved by the proper authority so that it shall discharge into a drain communicating with the sewer.
- (2.) The water seal of the trap in the drain pipe leading from the cellar shall be constantly maintained.
- Waste and
soil pipes in
cellars, &c.
- 44.—(1.) The waste or soil pipe from any sanitary convenience shall not be placed in a cellar or basement, except by permission of the proper authority.
- (2.) Where the waste or soil pipe is placed in a cellar or basement, the drainage system of the building shall be designed to carry away the drainage from that pipe.
- Sanitary
conveniences
in cellars and
basements.
45. Sanitary conveniences drained by syphon or other automatic method shall not be placed in a cellar or basement.
- Connexions
from cellars
&c. permitted
in certain cases.
- 46.—(1.) Where, in the opinion of the proper authority, a cellar or basement is so situated that it can be drained by gravitation to the sewers, the proper authority may permit connexion with the sewers provided a sluice valve is fixed between the cellar or basement connexion and the boundary of the property and is kept closed in the manner provided in the next succeeding regulation.
- (2.) Applications for permits under this regulation shall be in writing, signed by the lessee, and shall be accompanied by a written acknowledgment that the connexion is made at the risk of the lessee, and an undertaking to indemnify the proper authority against all damage arising out of any accident to the connexion.
- (3.) The soffit of the pipe draining the cellar or basement shall at its highest point be at least 2 feet below the cellar or basement at its lowest point.
- Valves to be
closed.
- 47.—(1.) Sluice valves shall be kept closed, and opened only when it is necessary to allow an accumulation of water to drain to the sewers.
- (2.) Spindles of sluice valves shall be fitted with permanently attached extension rods of sufficient length and diameter to enable the valves to be opened or closed from above the level of the ground floor of the building.
- Drainage traps.
- 48.—(1.) Traps for intercepting gases only shall be of round section, and self-cleansing form, and so constructed as not to empty by momentum or syphonage.
- (2.) In the case of traps fitted with a dished top and grating, and commonly known as "gully traps," the dish shall be of one piece with the trap, or jointed thereto in an approved manner; the depth of the dish from the top to the grating shall be not less than 6 inches, and the grating shall be removable. Gratings to gully traps shall be not less than $6\frac{3}{4}$ inches in diameter overall, and shall have openings of sufficient outlet capacity.
- (3.) Silt traps for intercepting both gases and solids shall have slightly tapered sides, flat bottom, round section, and trays fitted with handles for catching and removing solids.
- (4.) Grease traps for solidifying and collecting grease or any semi-fluid matter liable to foul the pipes shall be of such form as is from time to time approved by the proper authority.
- (5.) All gratings shall be fixed down with bitumen or wedges of lead; but, for fixing down gratings in gully-trap basins, bitumen only shall be used.
- (6.) All traps shall have a water seal of $2\frac{1}{2}$ inches.
- Gully traps.
49. Unless a slop sink be fixed inside a building, a gully trap shall be provided in the yard of the building, placed as near as possible to the back of the kitchen door, or, where directed, with a tap placed over it at a height of about 2 feet.
- Ventilation of
main drains.
- 50.—(1.) The main drain shall be ventilated at its proper end by a pipe or shaft erected vertically, and the pipe or shaft may be the soil pipe of a water-closet.

(2.) The height of any ventilator shall be such that the mouth of the pipe or shaft shall be at least 6 feet higher than any window, door, or air shaft ventilating living rooms situated within a distance of 30 feet therefrom.

(3.) Every ventilating pipe or shaft shall be of undiminished size, without return bend, and fitted with basket end.

51.—(1.) Branch drains shall be ventilated if the drain trap or closet trap is more than 15 feet from the main drain. Ventilation of branch drains.

(2.) If the drain is provided with an interceptor trap, there shall be, in addition, a ventilator connected to the interceptor trap shaft at the lower end of the drain.

52.—(1.) All ventilators on drains shall be of the same diameter as the drains, unless special permission is given to vary their dimensions. Size, &c. of ventilators.

(2.) Ventilator pipes inside a building shall be of cast iron, wrought iron, or lead, but if situated wholly outside a building, the vent pipe may be galvanized sheet iron of not less than No. 20 standard wire gauge, and shall, where ordered, be protected, as directed by the proper authority, against damage from traffic.

(3.) Every ventilator pipe shall be coated inside with an approved composition and outside with two coats of best quality white lead and linseed-oil paint.

53.—(1.) Whenever ventilator pipes are 12 feet or more above the eaves, they shall be stayed with $\frac{1}{2}$ -inch galvanized wrought-iron pipe. Stays for ventilators.

(2.) When a galvanized-iron ventilator pipe, with or without an offset, is carried up above the masonry wall of a building, a galvanized wrought-iron bolted pipe-clip shall be used at the top, firmly secured to the wall, and bolted against the ventilator pipe.

(3.) A length of 15 feet above the highest fixing or clip of straight ventilator pipe without offset may be fixed without stays; if more than 15 feet, the ventilator pipe shall be stayed.

(4.) There shall be at least one pipe-hook or clip to each 6-foot length of ventilator pipe.

54.—(1.) Ventilators shall, wherever practicable, be kept away from chimneys. Ventilators near chimneys.

(2.) When ventilator pipes terminate more than 6 feet from chimney openings at the same level, the ordinary rule as to height shall apply, but when the distance is 6 feet and under, the ventilator pipe shall terminate 2 feet below the chimney opening.

55.—(1.) Any person who discharges or allows to be discharged into any sewer, or into any drain communicating with any such sewer, or into any sanitary convenience or drainage apparatus used in connexion with any such drain, any rain water, surface water, or storm water, shall be guilty of offence. Rain and surface waters not to be discharged into sewers, &c.

(2.) Inlets to all drains shall be constructed and maintained in such manner and at such levels as will prevent the flow of rain water, surface water, or storm water, into such drains.

56.—(1.) All stables, cow stalls, market places, receptacles for sludge water from factories, areas where milk cans are washed, and all areas on which foul or polluted waters are discharged, shall be graded, paved, and drained to the satisfaction of the proper authority, and the drain therefrom shall be provided with an approved silt-trap connected with the drain of the property. Drainage from stables, &c.

(2.) Every such silt-trap shall be provided with an approved removable grating, and the silt shall be removed from the trap as soon as the silt receptacle is full.

57.—(1.) The water piping shall be of sufficient capacity to convey to the flushing cistern of each water-closet, slop-sink, and urinal upon the premises enough water to fill each such cistern within five minutes, and shall be connected with each cistern prior to the completion of the work. Water supply.

(2.) The supply of water to each water-closet, urinal, and slop-sink shall be controlled by a separate stop-cock.

(3.) Water supply pipes to storage cisterns for water-closets shall be provided with high-pressure ball-cocks, and the outlet pipe from the storage cisterns shall be of sufficient size to fill each flushing cistern within five minutes.

(4.) Wherever the height of the storage cistern is not sufficient to allow of high-pressure ball-cocks being used for flushing cisterns, low-pressure ball-cocks shall be used.

(5.) In all storage and flushing cisterns a piece of lead pipe shall be used between the cistern and the supply pipe.

(6.) The overflow from storage tanks shall be not less than 1½ inches in diameter, and a stop-cock, placed in an accessible position, shall be fixed on the supply pipe to every storage cistern.

(7.) Every sanitary convenience, gully-trap, and silt-trap shall have water discharging into it.

(8.) No appliance will be permitted whereby there may be a reflux from any sink, cistern, pan, or other receptacle back into any water main during such time as the main may be emptying.

Discharge pipes, &c.

58.—(1.) A separate discharge pipe shall be provided for conveying polluted water from each of the following classes of sanitary conveniences:—

- (a) Baths, lavatories, wash troughs, pantry sinks, and the like;
- (b) Kitchen sinks and scullery sinks, where grease traps are required; and
- (c) Closets, urinals, and slop-sinks.

(2.) The waste pipe for the sanitary conveniences specified in paragraphs (a) and (b) of the last preceding sub-regulation shall be of wrought iron or cast iron or wrought steel or drawn lead, and shall be taken by the shortest possible route, and shall discharge into a gully-trap or a disconnecter-trap.

(3.) The soil pipes for the sanitary conveniences specified in paragraph (c) of sub-regulation (1.) of this regulation shall be of cast iron or drawn lead with wiped joints, and shall discharge direct into the drains.

(4.) In all cases the upward extension from the soil pipe for ventilation shall pass in as direct a manner as possible.

Size and quality of pipes.

59.—(1.) The minimum size of soil, waste, and ventilator pipes, the minimum weights of lead waste and ventilator pipes, and the minimum thickness of cast-iron soil and waste pipes which shall be used shall be as follows:—

Sanitary Conveniences.	Internal Diameter of Pipe.	Weight of Lead Pipe (Super. ft.)	Thickness of Cast-iron Pipe.
	Inches.	Lb.	Inch.
Lavatories and wash basins	1½ to 1½	6	..
Bath, wash trough or wash tub, kitchen and pantry sink	2	6	..
Slop sink	2½	7	¼
Urinal	1½	7	¼
Closet	4	7	¼

(2.) All cast-iron pipes used shall be thoroughly coated inside and outside, according to the method approved by the proper authority.

(3.) All lead pipes shall be solid drawn lead pipes.

(4.) Where, in the opinion of the proper authority, lead waste or ventilator pipes heavier than 6 lb. lead may be required, such heavier lead as the proper authority directs shall be used.

(5.) For soil or waste pipes, glass-enamelled pipes may be used, and they shall be of a minimum thickness of three-sixteenths of an inch irrespective of the enamel.

Sockets, bends, &c.

60.—(1.) All sockets, nipples, bends, junction pipes or branches, and other apparatus used in connexion with pipes of the kinds referred to in the last preceding regulation shall correspond with them in weight and quality.

(2.) All junctions shall be curved; right-angled junctions shall not be used.

(3.) The sockets of cast-iron pipes shall be not less than 2 inches in depth.

Provision for inspection of pipes.

61.—(1.) Sufficient inspection and cleaning eyes shall be provided as directed by the inspector in such positions on soil and waste pipes as to be easy of access.

(2.) The soil and waste pipes and traps shall, where practicable, be exposed to view at all times, ready for inspection and for convenience of repairing.

(3.) Every soil-pipe shall be provided with one inspection opening at least—the cover to be clamped to a flange on the pipe with bolts and nuts of non-corrosible metal.

(4.) Where unavoidably placed within partitions or recesses of walls, soil or waste pipes and traps shall be covered with woodwork, so fastened with screws as to be readily removed.

(5.) In no case, except by special permission of the proper authority, shall junctions or joints be built into walls.

62. The following are the flattest gradients which may be adopted:— Gradients.

Size of Pipe.	Gradient.
4 inch	1 in 40
2½ inch	1 in 25
2 inch	1 in 20
1½ inch	1 in 15
1¼ inch	1 in 12

63. The area of openings in the grating to any waste-pipe shall not be less than will fully charge the waste-pipe. Area of gratings

64.—(1.) All ventilator pipes shall be of cast or wrought iron, wrought steel, or lead. Ventilator pipes.

(2.) Waste-pipe ventilators of galvanized iron shall not be less than No. 22 standard gauge, and shall have lapped folded seams.

(3.) Drain ventilator pipes shall have lapped and riveted seams.

(4.) All seams and rivets shall be soldered over.

(5.) Galvanized sheet-iron bends and offsets shall be similarly made and bent, or pressed to the proper curvature.

(6.) The various ventilator pipes may be branched into a soil or waste-pipe of the same class of sanitary convenience above the level of the highest of the sanitary conveniences.

(7.) Ventilator pipes may be combined by branching together those which serve several traps on the waste-pipes of the same class of sanitary convenience.

(8.) Ventilator pipes shall always have a continuous slope, and the joints shall be set so as to avoid collecting water by condensation.

(9.) No ventilator pipe shall be used as a waste or soil-pipe.

(10.) Pipe ventilators shall be carried above the eaves of the building, and finished with basket ends, and shall be taken off the pipes as near as possible to the traps from such a position that their entrance will not be fouled by the discharge of the trap.

65. Lead pipes shall not be used under any ground floor or in the soil. Use of lead pipes.

66.—(1.) Waste pipes from disconnected sanitary conveniences (except urinals and slop-sinks) need not be ventilated unless they exceed 12 feet inclined or 18 feet vertical in length (or their equivalent). When ventilation not required.

(2.) Branch waste pipes to such sanitary conveniences, if connected to a ventilated main waste pipe, provided there be no other sanitary conveniences attached to the line of waste, may be 12 feet in length without being ventilated, provided that every waste pipe where syphonage occurs in the trap shall be ventilated.

67. Spacing of lead tacks shall be arranged as nearly as possible at 2 ft. 6 in. centres. Spacing of lead tacks.

68. Where water might percolate to the floor, sinks, baths, draining boards, troughs, tubs, basins, slop-sinks, and the like fittings shall be flashed with lead of approved weight, or some other approved material, but in special cases, when required, some other approved provision for preventing percolation shall be made. Flashing.

69. Internal taps shall not be allowed unless a sink, lavatory, or other approved fitting is provided underneath. Internal taps.

70. The following provisions shall apply in regard to joints and connexions:— Joints.

(a) Cast-iron Pipe.—The joints shall be made with lead wool tightly driven into the bottom, or with gasket and molten lead run in full, and well caulked all round, and set up with proper caulking tools.

- (b) Lead Pipes and Joints.—All joints of lead pipes shall be plumbers' wiped joints.
- (c) Wrought-iron or Steel to Lead.—All joints between wrought-iron or steel waste pipes and lead pipes shall be made by means of brass unions screwed to iron or steel, and wiped to lead.
- (d) Lead to Cast-iron.—The connexion of lead pipes or traps to cast-iron pipes shall be made by means of a brass ferrule, which shall be lined with and connected to the lead pipe or trap by means of a wiped joint, and connected to the cast-iron by inserting it in the socket thereof and making the joint in the same way as in cast-iron pipe.
- (e) Stoneware Trap to Lead Pipe.—In every case the connexion of a stoneware trap to a lead pipe shall be by means of a cast-lead or brass socket, and the joint made with bitumen or other approved material; the lead pipe shall be connected to the tail-end of the brass or lead socket by means of a plumber's wiped joint.
- (f) Stoneware Pipe to Lead Pipe.—The joint shall be made by means of a brass ferrule connected to the lead pipe by means of a wiped joint, and connected to the stoneware pipe by inserting it in the socket thereof, and making a cement mortar joint.
- (g) Stoneware W.C. Trap to Iron or Stoneware Pipes.—The joint shall be made with bitumen or other approved material.
- (h) Sheet-iron and Cast-iron Pipe.—All connexions of galvanized sheet-iron pipes to cast-iron pipes shall be made with molten lead tightly caulked into the cast-iron socket.
- (i) Sheet-iron to Wrought-iron and Wrought-steel and Lead Pipes.—Brass unions or sleeves shall be used in connecting galvanized sheet-iron pipes to wrought-iron or wrought-steel pipes, and brass sleeves shall be used in connecting galvanized sheet-iron pipes to lead pipes. The iron or steel pipe shall be screwed to the brass; the lead shall be wiped to the brass; and the sheet-iron shall be soldered to the brass.
- (j) Wrought-iron and Wrought-steel Pipes.—The screwed ends and the sockets of each particular size shall be so formed and the threads so cut that the ends of the pipes will butt against each other when screwed home in the sockets; bends, junctions, and similar apparatus shall be similarly formed and screwed, so that when the pipe ends are screwed home the bore will be continuously uniform and without breaks or pockets; the burr shall be neatly filed off the inner edge of all pipe ends; and all screwed joints shall be made with approved jointing material.
- (k) The flushing-pipe from cistern to water-closet shall be connected by a lead cap-piece. The flushing-pipe may be of lead weighing not less than 6 lb. per superficial foot, or of brass, copper, galvanized malleable iron, or other material of approved weight and quality. The connexion of flushing-pipe to cistern shall be made by means of a brass union, wiped to lead or soldered to sheet-iron. When a closet is fitted with a hinged or pedestal seat the flush-pipe shall be fitted with an approved buffer-block and buffer.
- (l) The standard position for vent branch in regard to traps shall be not nearer than 3 inches, and not further than 18 inches from the crown of the trap; when this is not practicable, the point of juncture shall approach this as closely as possible, but no vent-pipe shall be placed on the crown of a trap, and the vent-socket shall be 3 inches in diameter in the clear.

Trapping fittings.

71.—(1.) Every water-closet, urinal, lavatory, slop-sink, kitchen-sink, pantry-sink, bath, tub, or set of tubs, or other sanitary convenience shall be separately and effectively trapped, unless otherwise specially allowed.

(2.) Traps for sanitary conveniences, other than water-closets, shall be provided with approved brass plugs for cleaning purposes fixed under the water line of the trap.

(3.) Traps shall be placed as near the sanitary convenience as possible, and in no case shall a trap be more than 2 feet from a sanitary convenience, unless allowed, in writing, by the Engineer.

(4.) All lead traps shall be of drawn lead.

(5.) All traps shall have a water seal of at least half the diameter of the outlet pipe, but in no case less than $2\frac{1}{2}$ inches.

(6.) The form of trap to be used, whether "P" or "S", shall be governed by the position and local conditions in each case.

72.—(1.) Every grease-trap shall be fixed outside the premises, ^{Grease traps.} wherever practicable, and if not portable, shall be attached to a gully or disconnecter trap.

(2.) Whenever a galvanized iron or copper grease-trap is used inside a building, it shall be fitted so as to be easily removable.

(3.) All large grease-traps built in impervious materials shall have provision made for inlet and outlet ventilators.

(4.) Sinks in all such places as food-packing houses, butchers' shops, lard-rendering establishments, hotels, restaurants, boarding-houses, and laundries, and in other places, if required, by the proper authority, shall be provided with suitable approved grease-traps.

73.—(1.) Without the special permission of the proper authority, ^{Water closets.} no closet apartment shall be of less than the following dimensions, namely, the walls shall be at least 6 ft. 6 in. high in the lowest part, and the closet apartment shall not be less than 2 ft. 9 in. wide and 4 ft. 6 in. long, inside measurements; it shall have a door, opening to the inside, and capable of being fastened inside, and so hung that its within edge is not less than 2 inches nor more than 6 inches above the floor.

(2.) Closet apartments shall, when ordered, be provided with floors of concrete or other approved material, finished and graded as directed, with a fall of not less than $\frac{1}{2}$ inch to the foot.

(3.) Pedestal pans, with basin and trap in one piece, shall be used in all closets; the closet basin and trap, and apparatus thereto shall be entirely open to inspection, and with no enclosures; all pedestal pans shall have a water seal $2\frac{1}{2}$ inches in depth; the outlet pipe of pedestal pans shall be of the same diameter as the soil pipe.

(4.) On floors other than wooden floors, the pan shall be laid flush with the floor, and shall be secured by brass screws to lead plugs laid into the floor.

(5.) Closet seat openings shall not be greater than $10\frac{1}{4}$ inches by 9 inches.

(6.) No existing or new room, closet, privy, building, or office shall be converted for use as a water-closet apartment, unless it has previously been approved for such use by the proper authority, or has been altered or repaired in such manner as the proper authority requires.

(7.) The number of closets to be provided on any premises shall be as directed by the proper authority.

(8.) Every closet-pan shall be furnished with a separate flushing cistern of three gallons capacity, and shall give an effective flush of three gallons and not more than three gallons, and for test purposes shall flush with two gallons.

(9.) The flushing cisterns shall be fixed at such a height as will effectually flush the pan, but in no case shall a cistern be fixed at a less height than 5 ft. 9 in. from the floor to the top of the cistern, and there shall be a distance of at least 9 inches between the top of the cistern and roof of closet, except in cases of approved combination closets with low down cistern.

(10.) Where so ordered by the proper authority, a water-closet apartment shall be provided with a storage cistern capable of holding six gallons of water for each occupant the premises can accommodate.

(11.) Notwithstanding anything contained in these regulations, closet-pans in any building may be flushed by means of a central storage cistern, with levers or other apparatus to each pan, if the apparatus—

(a) automatically controls the amount of water used in such a manner that each flush uses not less than two nor more than three gallons of water; and

(b) is approved by the proper authority.

(12.) Every internal closet apartment shall be provided with a window on an external wall not less than 2 square feet in area, measured inside the frame, made to open, and shall be provided with air-brick on an external wall, or with some other approved effectual method or appliance for ensuring constant ventilation.

(13.) In no case shall water-closet accommodation be provided in a cellar or basement, except by permission, in writing, of the proper authority, and then only when the water-closet cannot be otherwise placed, and where the soil-pipe can be connected into an existing sewer,

and in all such cases, before installation, the lessee shall notify the proper authority, in writing, that he will take all risk of damage that may arise from closets so placed.

(14.) Every closet-pan on an upstairs floor shall discharge into a soil-ventilator pipe carried up in cast-iron or lead, 3 feet above fitting; above that level the soil ventilator pipe may be continued in galvanized sheet-iron of not less than No. 20 standard steel-wire gauge, and shall terminate in an approved wire-basket, or ventilating cowl. The height of soil ventilator pipes shall be as prescribed for drain ventilator pipes. Cast-iron ventilator pipes, 2 inches to 4 inches in diameter, shall be of minimum thickness of three-sixteenths of an inch.

(15.) Every such closet-pan and every internal closet-pan shall be ventilated by a 2-inch ventilator taken off at least within 18 inches of the trap, and in any case sufficiently close thereto to prevent syphonage.

(16.) If there is more than one closet-pan discharging into the same soil-pipe, the ventilation shall be so arranged as to have a current of air continually passing through the pipe.

Urinals.

74.—(1.) Every urinal on premises licensed for the sale of fermented or spirituous liquors, and on premises used as a factory, workshop, work place, manufactory, shop, office, or school, where persons of the male sex are employed, or are in attendance, shall be of such size as the proper authority requires, but not less than 3 feet by 4 feet in the clear:

Provided that when the number of persons of the male sex does not exceed ten, a urinal need not be fixed if the closet has a pedestal pan with a hinged tip-up weighted seat.

(2.) The walls of all urinals to a height of at least 4 ft. 6 in. above the floor, and the divisions between stalls and the floors of all urinals, shall be made of impervious materials.

(3.) For the purpose of this regulation, the term "impervious materials" means the following materials:—

(a) For Urinal Walls.—Tiles set in cement mortar; brick work 9 inches thick, set in cement mortar, and rendered with one-half inch cement mortar; slate, marble, white or brown glazed fireclay, salt-glazed stoneware, and enamelled cast-iron.

(b) For Urinal Floors.—Tiles set in cement mortar; cement concrete, 6 inches in thickness, rendered with one-half inch cement mortar; slate, marble, asphaltum, and sheet lead.

(4.) Outside urinals may discharge into open channels without further trapping except that provided for open channels.

(5.) Wherever inside urinals are fitted with waste pipes and traps, and drippings may become a nuisance, provision shall be made to prevent the nuisance by one of the following methods:—

(a) By a urinal floor-trap, with the floor graded to the trap when the floor is other than of lead;

(b) By a suitable sunken tray trapped and connected with the waste when the floor is covered with lead.

(6.) The waste pipes for internal urinals shall be ventilated.

(7.) Provision in each case shall be made for flushing: the trap in the floor by tapping the cistern flushing pipes with $\frac{3}{8}$ -inch pipe, and carrying the latter to the floor.

(8.) The height of flushing cisterns shall be at least 6 ft. 6 in. from the floor to the bottom of the cistern.

(9.) Pull and chain cisterns shall be used in connexion with all urinals:

Provided that in special cases, and subject to the approval, in writing, of the proper authority, approved automatic cisterns may be fixed.

(10.) The flushing pipes shall be of copper, lead, or brass.

(11.) All iron cisterns used for flushing urinals, and all working parts of such cisterns, shall be coated with an effective rust preventative.

(12.) The discharge of flushing water shall be equal to one gallon for each 2 feet in width of urinal.

(13.) The floors of all urinals shall be graded as directed with a fall of not less than $\frac{1}{2}$ inch to 1 foot.

(14.) Every external urinal shall be screened in an approved manner.

(15.) The space between urinal and screen shall have a floor similar to that of the urinal, and shall be graded to urinal as directed.

(16.) Internal urinals shall be lighted and ventilated as prescribed for internal closets.

75.—(1.) The tap for a slop-sink shall be well opened out to receive Slop sinks. the sink basin, and the waste-pipe shall be ventilated.

(2.) The sink shall be of approved material.

(3.) Slop-sinks shall be provided with approved flushing arrangements.

(4.) Draw-off taps shall not be used directly over the slop-sinks unless at least 18 inches above the sink.

76. All kitchen, scullery, and slop-sinks, wash troughs, lavatories, Flashing of sinks, &c. and baths abutting against a wall or partition shall have a suitable flashing of not less than 5-lb. lead.

77.—(1.) Wash troughs or tubs shall be of approved pattern and Wash troughs. material, and shall be securely fixed and graded to the outlet pipe.

(2.) The brass strainer shall be sunk to the level of the trough.

(3.) When the distance between the outlets on troughs exceeds 21 inches and lead pipe is used, the pipe shall be supported either by a lead tack wiped on the top of the pipe, or by a wooden block screwed to the bottom of the trough and clamped to the pipe. The pipe passing through shall have a lead flange wiped on.

(4.) Where wash tubs are not placed in a room, but are fixed under houses, sheet-iron waste-pipes of not less than 24 gauge may be used, provided that they are not placed underground.

78.—(1.) In every internal range of lavatories—that is, one or two Lavatories. or more—separate trap ventilation shall be provided.

(2.) In every range of lavatories in an external building, or rooms isolated from the main building, the waste-pipe shall be ventilated by at least a single pipe at its upper end, provided that ranges of not more than four lavatories need not have more than one trap.

(3.) Unless they are already in use and are allowed by the proper authority to be retained as existing fittings, tip-up basins shall not be allowed to be connected with the drains.

79. The bottoms of galvanized sheet-iron baths shall be efficiently Baths. supported. Longitudinal joints shall not be used in the bottoms of baths.

80.—(1.) Except where otherwise allowed by the proper authority, Safes. every lead-safe under a sanitary convenience other than a urinal shall be drained by a special pipe not directly connected with any waste-pipe, soil-pipe, drain, or sewer, and shall be provided at the outlet into the open air with flap valves of brass or other approved metal.

(2.) Suitable safes of approved impervious material shall be fixed under every water-closet and slop-sink on an upstairs floor.

(3.) Existing floors under sanitary conveniences shall be re-graded, if necessary.

(4.) Pipes draining safes shall discharge so as not to cause any inconvenience or nuisance.

(5.) In all cases not otherwise provided for, the pipes shall be brought to the ground surface, or arranged to discharge where directed.

(6.) A brass grating shall be fixed to the entrance of each safe pipe, and the pipe shall be 1 inch at least in diameter, and a brass flap-valve fixed to the outlet therefrom.

81. The entrance to all exit pipes to all sanitary conveniences, except Gratings. water-closets, shall be furnished with suitable permanently attached gratings.

PART IV.—WATER SUPPLY.

82.—(1.) Where water is required or used for the purposes of private Meters to be fixed in certain premises. water troughs, steam boilers, engines, building purposes, brickwork, concrete, masonry, syphons, hydraulic power blasts, watering of horses, cattle, or other stock, glass-washing machines, cooling windows, washing or cleaning motor or other vehicles, watering gardens, yards, pathways, or drives, or for any trade, industry, boarding-house, or business, it shall be supplied through a meter.

(2.) The proper authority may, by notice in writing, direct that any person, being a consumer supplied with water or desiring to be supplied with water, whether for domestic purposes solely or not, shall be supplied through a meter.

(3.) Every person to whom this regulation applies shall fix a meter, in accordance with the provisions of the next succeeding regulation, to register the quantity of water supplied.

83.—(1.) Every meter shall be fixed in a position approved by the Engineer or the Supervising Officer.

(2.) No meter shall be fixed until it has been examined, tested, and approved by a duly authorized officer.

(3.) Each meter must be capable of registering at least 1,000,000 gallons.

(4.) Each $\frac{1}{2}$ -inch, $\frac{3}{4}$ -inch, or 1-inch meter must be capable of registering any flow not less than 10, 15, or 30 gallons per hour respectively.

(5.) Every meter shall be fixed truly level, with connexions above ground, in a manner approved by the Supervising Officer, and in an easily accessible position; it shall be properly protected, and shall be on a proper foundation of timber, stone, brick, or concrete, which must, wherever practicable, be level with the surface of the ground and within three feet of the building line of the property.

(6.) Where it is impracticable to place the meter above the surface of the ground, it may be fixed in a pit constructed and drained to the approval of the Supervising Officer.

(7.) Lead connexions or wrought-iron quarter bends shall be fixed on each side of the meter. The use of elbows will not be permitted.

(8.) Every meter shall be fixed to register the whole of the water supplied to any tenement or premises except where otherwise allowed by the proper authority.

(9.) Every person desiring to remove or alter the position of a meter must make written application for the consent of the proper authority, and no such removal or alteration shall be effected until permission in writing has been given.

(10.) No work in connexion with the fixing, removal, or alteration of a meter shall be done by any person other than a licensed water supply plumber.

(11.) No person shall construct, place, stack, or store any building, erection, material, or goods over or upon any meter through which water is supplied from a Government pipe, or do or permit anything which shall prevent or interfere with the inspection at any time of any meter.

(12.) Every meter shall be kept in repair by and at the cost of the lessee.

(13.) If any meter in use ceases to register or is reported as out of repair or registering inaccurately, the proper authority shall estimate and charge for the water consumed during the period for which the meter is not in working order, and until it is repaired and re-fixed—

(a) by taking an average of the quantity used during the previous quarter or during the corresponding period of the previous year; or

(b) on the basis of subsequent consumption after repairing.

(14.) Every meter removed for repairs shall be repaired, adjusted, and submitted for test and re-fixed with the least possible delay by a licensed water supply plumber employed for the purpose.

(15.) Wherever a 2-inch meter or meter of larger size is fixed or re-fixed, provision shall be made for testing the working of the meter in position by the affixing of a stop tap or valve on the outlet side of the meter, with a stop tap ferrule between the stop tap and meter.

(16.) No branches shall be taken off between the stop tap or valve and the meter.

(17.) The sizes of stop tap ferrules shall be as follow:—

For 2-inch and 3-inch meters	..	..	$\frac{3}{4}$ inch.
For 4-inch meters	..	..	1 inch.
For meters larger than 4-inch	..	..	$1\frac{1}{2}$ inch.

84. Any consumer of water who is supplied with water through a meter and pays for such supply by measure an amount exceeding the sum which would be payable if he paid rates based upon the valuation of the land shall, out of the excess, be allowed, so far as the excess will admit thereof, a deduction equal to Ten shillings per annum on account of each closet pan on the premises, the water for which passes through and is recorded by the meter:

Provided that the deduction allowed to any consumer shall not exceed One pound per annum in respect of any premises.

85. The following provisions shall apply to all work, connexions, fittings, apparatus, and material in connexion with the supply of water from Government pipes:—

Conditions to be observed in regard to tappings and services.

- (a) Ordinary connexions with sub-mains shall be made with stop-cock ferrules, to which for iron services a length or not less than 3 feet of lead pipe shall be attached, except in cases where the use of wrought-iron quarter bends has been allowed.
- (b) The use of elbows shall not be allowed.
- (c) One service pipe only for domestic supply to each tenement will be permitted.
- (d) The bore of the service pipe shall not exceed $\frac{3}{4}$ inch unless permission for a larger service has been obtained in writing from the proper authority, in which case the supply shall be taken through a meter, and no such larger service shall exceed 1 inch in diameter unless the average number of persons residing in the tenement is more than 25, nor shall it exceed $1\frac{1}{4}$ inch in diameter unless the average number of persons residing in the tenement is more than 100.
- (e) The maximum tapping that will be allowed without clip for each size of cast-iron main shall be as follows:—

For 3-inch and 4-inch pipes	..	$\frac{3}{4}$ inch tapping.
For 5-inch, 6-inch, and 7-inch pipes		1 inch tapping.
For 8-inch pipes	..	$1\frac{1}{4}$ inch tapping.
For 9-inch pipes	..	$1\frac{1}{2}$ inch tapping.
Over 9-inch pipes	..	2 inch tapping.
- (f) A branch shall be inserted for all connexions of 2-inch diameter or over to a main of 5-inch diameter or less, and for all connexions of 3-inch diameter or over to mains of 6-inch diameter or over.
- (g) All such branches shall be of pattern and material approved by the proper authority, and shall be fixed in accordance with the directions of the Supervising Officer.
- (h) Tapping of pipes must be made under pressure by an officer authorized by the proper authority in every case unless otherwise ordered or permitted, in writing, by the proper authority in cases where tapping under pressure is not practicable.
- (i) Any person giving notice of his desire to lay a pipe to connect with and tap a Government pipe shall provide for, and bear the cost of, all labour and material necessary for the connexion and for the restoration of the ground to the satisfaction of the proper authority, and shall be liable for the consequences of failure in so doing, and shall pay in advance to the proper authority the expense of the tapping at such rates as are from time to time determined by the proper authority.
- (j) If it becomes necessary to shut off a main of 9 inches diameter or over to repair, remove, or replace any tapping, such special fees as are from time to time fixed by the proper authority shall be paid to cover the expense of shutting off the main.
- (k) All connexions with lead and iron pipes shall be made with brass union couplings.
- (l) A high-pressure screw-down stop tap properly secured and covered with an approved cast-iron box shall be fixed on each water service between the main and the building line.
- (m) Where mains are under wood blocks, concrete or other special pavements, an approved iron box must be fixed over the stop tap ferrule in the main.
- (n) Except where otherwise permitted by the proper authority, every stop tap and stop tap ferrule must be opposite the tenement supplied and in one line at right angles to the main on which the stop tap ferrule is fixed.
- (o) All joints connecting lead pipes shall be wiped joints, and in no case will bolt or copper bit or blown joints be allowed on water service pipes.
- (p) Except with the permission, in writing, of the proper authority, not more than one tenement shall be supplied from a single water service.
- (q) The proper authority may, if it thinks fit, give permission to arrange in special cases that the water supply to more than one tenement may pass from the water main into a single pipe (herein called a "trunk service") which must

be laid in a street and have branch piping to each tenement; on each such branch there shall be a stop tap fixed in a public thoroughfare, but in no case shall branches be fixed in excess of the number set out in the following table, viz. :—

Diameter of Trunk Service.	No. of 1-in. Branches only.	No. of ½-in. Branches only.	No. of ¼-in. Branches only.
¾ inch ..	..	..	2
1 inch ..	..	2	or 5
1¼ inches ..	2	or 4	or 10
1½ inches ..	3	or 6	or 15
2 inches ..	6	or 12	or 30

(r) In any thoroughfare every service pipe shall be laid at a depth of at least 1 foot below the surface, and no service pipe shall be laid longitudinally under a footpath or channel.

(s) No extension of a private service shall be allowed except by consent of the proper authority.

Plan to be forwarded with application in certain cases.

86. In connexion with every application to lay a water service of 2 inches and upwards in diameter or to alter the position of any such water service, the plumber's notice shall be accompanied by a properly-dimensioned plan, showing the locality of the premises at which the work is to be effected and the position in which it is intended to lay the pipes and fix meters, plugs, stop taps, &c., thereto.

Repairs, &c. to service pipes.

87. The service pipe from the main being the property of the owner or occupier of the tenement supplied by the service pipe, the occupier (if any) or (if none) the lessee shall, upon receiving notice that his service pipe requires repairing, immediately proceed to repair it, and he shall be responsible for any loss of water or other damage which is caused by reason of the service pipe being leaky or otherwise out of repair or broken, and the proper authority may stop the water from flowing into the tenement until the necessary repairs have been effected.

Notice to be given before uncovering Government pipe, &c.

88.—(1.) Any person, whether licensed or not, who opens any ground so as to uncover any Government pipe or pipes, without giving two days' notice to the proper authority of his intention so to do, or who in any way tampers with, or alters, any Government pipe without the permission, in writing, of the proper authority first obtained, or who wilfully or carelessly breaks, injures, or opens any lock, tap, valve, pipe, work, or engine under the control of the proper authority shall be guilty of an offence.

Penalty: Ten pounds.

(2.) Every notice under this regulation must be signed by the licensed plumber actually engaged in carrying out the works referred to in the notice, or by a licensed plumber employing another plumber to carry out the work under his supervision.

(3.) Any licensed plumber who signs a notice for work which is not actually done either by himself or by a plumber under his supervision, or carries out work under a notice not signed by himself, shall be guilty of an offence.

Notice to be given before interfering with pipes, &c. communicating with Government pipes.

89.—(1.) Any person, whether licensed or not, who—

- (a) lays any pipe to communicate with a Government pipe, or
- (b) alters, repairs, or replaces pipes or fittings in communication with a Government pipe without giving two days' notice of the day and hour when the work is to be carried out, or
- (c) makes the communication, alteration, repair, or replacement, except under the superintendence and according to the directions of some officer representing the proper authority, or
- (d) lays any leaden or other pipe to communicate with a Government pipe of a strength and material not sanctioned by the proper authority,

shall be guilty of an offence.

Penalty: Five pounds, and, in addition, a penalty not exceeding Two pounds per day for any continuance of the offence after the receipt of a notification from the proper authority.

(2.) This regulation shall apply to a service communication with a Government pipe made through the intervening medium of a storage tank, as well as to communication by direct service.

(3.) Notwithstanding anything contained in this regulation, the giving of two days' notice under this regulation may be dispensed with in the event of urgent repairs being required to stop the waste or escape

of water, but in that case the notice shall be sent to the proper authority by the licensed plumber concurrently with, or immediately after, the execution of the repairs.

90.—(1.) No person shall use, in connexion with a supply of water from Government pipes, any tap, stop tap, bib tap, ball tap, valve, closet cistern, service box, bath tap or valve, or other fitting which is not of the best quality, tested, stamped, and approved by the proper authority. Quality of fittings, &c.

(2.) No person shall use any stop or bib taps which are not screw-down high-pressure taps, made of hard brass or gunmetal, and in every respect of best quality and workmanship, tested, stamped, and approved by the proper authority.

(3.) Lead piping shall be of the following weights:—

Diameter of Pipe.	Weight of Pipe per Yard.	Diameter of Pipe.	Weight of Pipe per Yard.
$\frac{3}{4}$ inch	5 lb.	1 inch	14 $\frac{1}{2}$ lb.
$\frac{1}{2}$ inch	6 ..	1 $\frac{1}{4}$ inches.. ..	22 ..
$\frac{3}{8}$ inch	7 $\frac{1}{2}$..	1 $\frac{1}{2}$	30 ..
$\frac{1}{4}$ inch	10 ..	2	45 ..

(4.) Except with the written consent of the proper authority, no piping other than galvanized wrought-iron piping, of approved quality, tested and stamped by the proper authority, shall be used for external and internal services.

(5.) No person shall use any cistern or tank that is not provided with an equilibrium ball valve and with the overflow pipe laid and fixed in a suitable manner, open to inspection, and in a position approved by the proper authority.

91. Except with the special permission of the proper authority no bath shall be installed or used which has a holding capacity when full of more than 100 gallons. Size of baths.

92. No person shall fix any water ejector, hand syphon, automatic syphon, or other water-power pumping appliance without the permission, in writing, of the proper authority, and the proper authority may grant permission subject to such conditions as it thinks fit. Pumping appliances.

93. Any person, whether licensed or not, who connects any service pipe or branch service pipe with any steam boiler for the purpose of feeding the boiler with water without first affixing a self-acting valve to prevent the pressure of the steam reversing or affecting the dial of the meter, shall be guilty of an offence. Connecting pipe with steam boilers.

Penalty: Five pounds, and, in addition, a penalty not exceeding Two pounds per day for any continuance of the offence after the receipt of a notification from the proper authority.

94.—(1.) In every case in which it is necessary to obtain the consent of the proper authority before doing any act or commencing any work, application for consent shall be made, in writing, addressed to the proper authority and delivered at his office at least two days prior to the time proposed for the doing of the act or the commencement of the work. Applications for consent of proper authority.

(2.) The application shall clearly specify the act proposed to be done or the work to be commenced, and the act shall not be done or the work commenced before the receipt of consent, in writing, from the proper authority, and then only subject to, and in accordance with, such directions or conditions as are therein specified.

PART V.—RATES AND CHARGES AND PENALTIES.

95.—(1.) The lessee shall pay to the proper authority in respect of sewerage and water supply services such rates and charges as are from time to time fixed by the Minister, in accordance with these Regulations, by notice in the *Gazette*, but this regulation shall not affect the validity of any contract for the payment of rates or charges by any sub-lessee or occupier of the property. Rates and charges.

(2.) Sewerage rates shall be based upon the valuation of the land made under the *Rates Ordinance* 1911-1924.

(3.) Water rates may be based upon the valuation of the land as provided in the last preceding sub-regulation, or upon the amount of water used, or partly upon the valuation and partly upon the amount of water used.

(4.) The minimum amount payable in respect of water supplied to any premises through a meter shall be One pound per annum, and the minimum amount payable under a rate based upon the valuation of the land shall be Ten shillings per annum.

Special services. 96.—(1.) Notwithstanding anything contained in these Regulations, special supplies of water at such rates as the Minister in each case determines may be provided for the following purposes, namely:— General building purposes, plumbers' blasts, steam boilers, gas engines, watering stock, washing vehicles, and any other purposes which, in the opinion of the Minister, are of such a kind as to justify special treatment.

(2.) The proper authority may require any person to whom this regulation applies to make a preliminary payment of such amount as the proper authority determines before water is supplied to him.

**Application
of provisions
of Rates
Ordinance.**

97. The provisions of the *Rates Ordinance* 1911-1924 in regard to the valuation of land, the assessment of rates, and the recovery of rates and charges shall apply (*mutatis mutandis*) to the valuation of land, the assessment of rates and the recovery of rates and charges under these Regulations.

Penalties.

98. Any person who commits an offence against these Regulations for which no penalty is provided shall be liable, upon conviction, to a penalty not exceeding Fifty pounds.

**Proceedings for
offences.**

99. Proceedings for offences against these Regulations and for the recovery of rates and charges may be instituted by the proper authority in any court of competent jurisdiction.