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# Public Health (Sewerage) Regulation 1973

## **Unvalidated References:**

*Public Health Act 1973*

*Interpretation Act 1975*

*Trade Licensing Act 1969*

*Trade Licensing Act 1969*

*Trade Licensing Act 1969*

*Trade Licensing Act 1969*

*Liquor (Licensing) Act 1963*

*Building Act 1971*

This reprint of this Statutory Instrument incorporates all amendments, if any, made before 25 November 2006 and in force at 1 July 2001.

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Legislative Counsel

Dated 25 November 2006

## **INDEPENDENT STATE OF PAPUA NEW GUINEA.**

Chapter 226J.

### ***Public Health (Sewerage) Regulation 1973***

#### **ARRANGEMENT OF SECTIONS.**

1. Interpretation.
2. Application.
3. Relaxation, etc., of requirements.
4. Sewerage districts.
5. Sewered areas.
6. Sewerage Engineers.
7. Sewerage Inspectors.
8. Supervising officers.
9. Plans of sewerage systems.
10. Plans for connections to sewerage systems.
11. Plans of individual blocks of buildings.
12. Notice to connect to sewer.
13. Prohibited closets.
14. Connections to sewerage system.
15. Drainage generally.
16. Use of drains.
17. Prohibited discharges into drains and sewers.
18. Discharge of trade wastes.
19. Discharge of sub-soil water.

20. Private sewerage systems.
21. Plumbing and drainage in unsewered areas.
22. Applications for approval to connect, etc.
23. Conditions of approval.
24. Form of submitted plans of plumbing.
25. Variation from plans.
26. Alterations to buildings.
27. Notice of commencement and completion of work.
28. Inspection.
29. Examination of materials, etc.
30. Testing of drains.
31. Use of apparatus, etc., before testing.
32. Requirement of appropriate licence.
33. Supervision of work.
34. Responsibility of tradesmen for work.
35. Matters not specifically dealt with.
36. Materials, etc.
37. Workmanship.
38. Safety precautions.
39. Concrete.
40. Cement mortar.
41. Drainage materials.
42. Interceptor traps.
43. Inspection chambers.
44. Inspection openings.
45. Gratings.
46. Closure of openings.
47. Replacement or insertion of pipes.
48. Use of concrete.
49. Fixtures in cellars.
50. Drainage from cellars, etc.
51. Seepage drains.
52. Drainage from polluted areas.
53. Drainage trenches.
54. Position and line of drains, etc.
55. Oblique junctions.
56. Connection to sewer.
57. Gradients.
58. Depth of drains.
59. Laying of drains.
60. Drains under buildings.
61. Salt glazed ware and cement and concrete pipes.
62. Cast-iron pipes.
63. Trapping of inlets.
64. Classes of traps.
65. Water seals.
66. Provision of yard gullies.
67. Details of yard gullies.
68. Kerbing to yard gullies and silt traps.
69. Sealed disconnector traps.

70. Provision of grease, petrol and oil traps.
71. Construction of grease traps.
72. Size of grease traps.
73. Construction of petrol and oil traps.
74. Vents on main house drains.
75. Vents on branch drains.
76. Size of drainage vents.
77. Materials for drainage vents.
78. Materials for vents of soil or waste pipes.
79. Soil vent pipes.
80. Length of unvented waste.
81. Anti-siphonage vents.
82. Height of vent pipes.
83. Ground vents.
84. Use of chimneys as ventilators.
85. Vents near chimneys, etc.
86. Vent pipe grades.
87. Combining of vents, etc.
88. Pipe clips, etc.
89. Attachment to walls.
90. Supporting of vents.
91. Vents adjoining high buildings.
92. Grease trap ventilation.
93. Fixture units.
94. Sizes of soil, waste and drain pipes.
95. Sizes of vents.
96. Provision of waste pipes.
97. Provision of soil pipes.
98. Combined pipe systems.
99. Connections to drains.
100. Flashings, etc.
101. Fixtures, etc., against walls.
102. Internal cocks.
103. Pipes passing through roofs.
104. Location of soil and waste pipes.
105. Materials for soil and waste pipes.
106. Lead soil and waste pipes.
107. Galvanized steel pipes.
108. Cast-iron pipes.
109. Copper and brass pipes.
110. Use of lead pipes.
111. Supporting of lead pipes.
112. Minimum permissible gradients for soil and waste pipes.
113. Junctions.
114. Sealing of pipes.
115. Sheet metal bends and offsets.
116. Concealment of pipes, etc.
117. Concealed standing wastes.
118. Painting.
119. Stoneware, cement, concrete and cast-iron pipe.

120. Lead pipe.
121. Wrought-iron pipe.
122. Wrought-iron pipe to lead pipe.
123. Brass or copper pipe.
124. Lead pipe to cast-iron pipe, etc.
125. Sheet iron pipe to cast-iron pipe.
126. Sheet iron pipe to wrought-iron pipe, etc.
127. Sheet iron pipe to lead pipe.
128. Lead pipe to salt glazed ware pipe.
129. Concrete or stoneware traps to lead pipe.
130. Connection of closet pan traps to soil or drain pipes.
131. Connection of cistern flush pipes to closet pans.
132. Connection of vent pipes to closet pans.
133. Connection of outlet fittings to fixtures.
134. Connection of waste pipes to troughs.
135. Trapping of fixtures.
136. Position of traps.
137. Materials for traps.
138. Depth of water seal.
139. Form of trap.
140. Lead traps.
141. Gratings.
142. Provision for inspection and cleaning.
143. Inspection openings on soil pipes.
144. Washers for inspection and cleaning openings.
145. Water-closets, urinals and hand basins.
146. Fixing of closet pans.
147. Closet pans.
148. "Asiatic" toilets.
149. Closet pan seats.
150. Flushing apparatus.
151. Flushing cisterns.
152. Flush pipes.
153. Flushing apparatus other than cisterns.
154. Storage tanks.
155. Venting of closet pans, slop hoppers and urinals.
156. Grouped external closets.
157. Construction of urinals.
158. External urinals.
159. Flushing apparatus for urinals.
160. Flushing cisterns.
161. Flush pipes.
162. Flush valves for urinals.
163. Slop hoppers.
164. Wash troughs.
165. Troughs abutting against brick wash-coppers.
166. Standing overflow wastes.
167. Fixing of sinks, etc.
168. Galvanized sheet iron baths.
169. Bath traps.

170. Baths without flashing.
171. Shower compartments.
172. Showers over baths.
173. Venting of lavatory basins.
174. Venting of sinks discharging into grease traps.
175. Lavatory basins and sinks.
176. Tip-up basins.
177. Ground floor showers.
178. Safes.
179. Cistern overflows.
180. Regrading of existing floors under fixtures.
181. Existing fixtures, fittings, etc.
182. Defective works, etc., generally.
183. Responsibility of owner or occupier for defective work, etc.
184. Inspection of private premises.
185. Entry for purposes of survey, etc.
186. Entry for construction.
187. Manholes in private property.
188. Interpretation of Part XII.
189. Fixing of sewerage rate.
190. Rateable land.
191. Minimum rates.
192. Payment of rates.
193. Liability for rates.
194. Rate notices.
195. Appeals.
196. Penalty for non-payment.
197. Levy and distress.
198. List of overdue rates.
199. Power to take possession of unoccupied land.
200. Sale of rateable land.
201. Recovery of rates.
202. Continuing liability of owner.
203. Joint owners.
204. Refunds and remissions.
205. Responsibility for cleansing of drains.
206. General penalty.
207. Liability of offender for expenses of local medical authority.

***Public Health (Sewerage) Regulation 1973***

MADE under the *Public Health Act 1973*.

Dated                      200 .

**PART I. – PRELIMINARY.**

**1. INTERPRETATION.**

In this Regulation, unless the contrary intention appears—

“**anti-siphonage vent**” means a vent pipe from an individual trap to the open air or to a main or branch vent pipe, having for its purpose the prevention of loss of water seals in the trap;

“**approved**” means approved by the Local Medical Authority or by the Sewerage Engineer;

“**authorized agent**” includes a plumber or drainer contracting to do sewerage work for an owner or occupier of any property;

“**building**” means a building used—

(a) as a work place, residence, place of business or amusement or place of human habitation; or

(b) for the storage of food intended for human consumption,

but does not include an outbuilding unless it is used for a purpose referred to in Paragraph (a) or (b);

“**diameter**”, in reference to a pipe, means the nominal internal diameter of the pipe;

“**disconnecter trap**” means a trap used—

(a) for isolating or disconnecting waste pipes from the house drain and soil pipes; and

(b) for providing inlet ventilation to the waste pipe or pipes discharging into it;

“**drain**” means a conduit, or any part of a conduit, laid through, under or on a street, way or land, whether public or private, for the carriage from any property of sewage to a sewer;

“**educt vent**” means an opening or pipe for the exit of air from a soil pipe, waste pipe or drain;

“**external closet**” means a closet other than an internal closet;

“**fitting**” means any apparatus, together with the necessary appurtenances, for use in connection with a plumbing or drainage system, other than a fixture or straight piping;

“**fixture**” means any apparatus, together with the necessary appurtenances, that—

(a) is attached to a plumbing or drainage system; and

(b) is intended for the collection or retention of wastes or waste waters for ultimate discharge into a sewerage system,

such as a closet pan, urinal, bath, sink, basin or trough;

“**flat**” means a suite of rooms that—

(a) is used, or intended or adapted for use, as a separate habitation; and

(b) is comprised in a building containing one or more similar suites;

“**induct vent**” means an opening or pipe for the admission of air to a soil pipe, waste pipe or drain;

“**inspector**” means an Inspector of Health, a Sewerage Inspector or a supervising officer;

“**Inspector of Health**” means an Inspector of Health appointed under Section 8 of the Act;

“**internal closet**” means a closet that is entered from, or has an opening into, a building;

“**property**” includes a house, building, tenement, land or premises;

“**public building**” means—

(a) a theatre, cinema, concert, music or assembly hall, skating rink, arena, amphitheatre, circus building, enclosure, gallery, platform, tent or structure in, around or on which numbers of people are usually or occasionally assembled; or

(b) a church, chapel or meeting house;

“**sewage**” means—

(a) house wastes delivered from a sanitary receptacle; or

(b) water so soiled or polluted as to be unfit to run or flow into a storm-water channel, creek or river;

“**sewer**” means a pipe, conduit or underground channel other than a drain, used or intended to be used for the conveyance of sewage;

“**sewerage district**” means an area declared to be a sewerage district under Section 4;

**“Sewerage Engineer”** means a Sewerage Engineer appointed under Section 6;  
**“the Sewerage Engineer”**, in relation to a sewerage district, means the Sewerage Engineer appointed for that district;  
**“Sewerage Inspector”** means a Sewerage Inspector appointed under Section 7;  
**“sewerage system”** includes sewers, fittings, fixtures, appliances, plant, machinery and other sewerage works constructed or maintained by or by the authority of the Local Medical Authority or any other person or organization;  
**“sewered area”** means an area declared to be a sewered area under Section 5;  
**“slop hopper”** means a fixture, other than a closet pan or urinal, used for the discharge of soil or urine waters and provided with flushing apparatus;  
**“soil pipe”** means a pipe conveying discharge from a water-closet, slop sink, urinal, mortuary or operating theatre to a drain;  
**“stack”** means a vertical line of soil, waste, combined waste or vent piping, including its offsets (if any);  
**“supervising officer”** means a supervising officer appointed under Section 8;  
**“trade waste”** means the liquid refuse from a business, trade or manufacturing property, other than domestic sewage, storm water or unpolluted water;  
**“trap”** means a fitting designed to retain a quantity of water sufficient to arrest the passage of air or gases through the fitting;  
**“waste pipe”** means a pipe conveying discharge (other than discharge from a water-closet, slop sink, urinal, mortuary or operating theatre) from a fixture to a disconnected pipe or trap;  
**“water seal”** means the height of the column of water in a trap to the crown weir, less the diameter of the trap at the lowest point of the dip;  
**“yard gully”** means a drainage trap that is—  
(a) used externally; and  
(b) fitted with a dished top and grating.

## **2. APPLICATION.**

This Regulation applies in and in relation to sewerage districts.

## **3. RELAXATION, ETC., OF REQUIREMENTS.**

(1) Where the Head of State, acting on advice, is satisfied that—

- (a) it is desirable that, in their application to any building or class of buildings, any of the provisions of this Regulation should be relaxed or modified in any way; and
- (b) the relaxation or modification will not result in any lowering of standards of hygiene, safety or effectiveness,

the Head of State, acting on advice, may, by order, provide for the relaxation or modification, subject to such conditions as the Head of State, acting on advice, thinks proper.

(2) Section 76 of the *Interpretation Act 1975* applies to and in relation to an order under Subsection (1) as if it were a regulation.

## **PART II. – ADMINISTRATION.**

### **4. SEWERAGE DISTRICTS.**

The Minister may, by notice in the National Gazette, declare an area to be a sewerage district for the purposes of this Regulation.

#### **5. SEWERED AREAS.**

The Local Medical Authority may, by notice in the National Gazette, declare an area in a sewerage district to be a sewered area for the purposes of this Regulation.

#### **6. SEWERAGE ENGINEERS.**

The Minister may appoint a person to be a Sewerage Engineer for a sewerage district.

#### **7. SEWERAGE INSPECTORS.**

The Local Medical Authority may, by notice in the National Gazette, appoint a person to be a Sewerage Inspector.

#### **8. SUPERVISING OFFICERS.**

The Minister may appoint a person to be a supervising officer for the purposes of this Regulation.

### **PART III. – OFFICIAL SEWERAGE PLANS.**

#### **9. PLANS OF SEWERAGE SYSTEMS.**

(1) The Sewerage Engineer shall prepare and maintain a plan showing the position in relation to building allotments of the sewers under his control.

(2) A plan referred to in Subsection (1) shall be available for public inspection.

#### **10. PLANS FOR CONNECTIONS TO SEWERAGE SYSTEMS.**

Where, in the opinion of the Sewerage Engineer, it is practicable to connect any plumbing work, drains or sewers with the sewerage system, he may issue a plan for that purpose on payment of the fees set out in Schedule 2.

#### **11. PLANS OF INDIVIDUAL BLOCKS OF BUILDINGS.**

(1) In order to facilitate the submission of plans, the Sewerage Engineer may supply, at the rate of K0.50 for each block, plans of individual blocks of buildings–

(a) showing the position of the sewer and the position of the branch to which the building drain is to be connected, marked in red; and

(b) having the depth of the branch indicated on the plan.

(2) A tracing of a group or block of buildings, with the positions and depths of the branches marked on it, may be supplied, if required, by the Sewerage Engineer on payment, at such rates as are fixed by him, of the cost of the tracing.

## **PART IV. – SEWERAGE GENERALLY.**

### **12. NOTICE TO CONNECT TO SEWER.**

(1) The Local Medical Authority may, by written notice served on the owner or occupier, require the owner of any property situated within a sewerage area to provide, within such time as is specified in the notice, such proper water-closet or closets, drains, fixtures and fittings, appliances, apparatus and connections with such sewer or sewers as are specified in the notice.

(2) A person who, without reasonable excuse (proof of which is on him), fails to comply with a requirement under Subsection (1) is guilty of an offence.

Penalty: A fine not exceeding K40.00.

(3) Where a person on whom a notice is served under Subsection (1) fails to comply with a requirement of the notice within the time specified in the notice, the Local Medical Authority may—

(a) cause the necessary works to be executed at the cost of the person; and

(b) for the purpose of executing the works, and either alone or by such agents and workmen as the Local Medical Authority thinks necessary, enter and remain on the property on which the works are to be executed.

(4) All costs and expenses incurred in and about the execution under Subsection (3) of any works is recoverable by the State from the person concerned as a debt.

### **13. PROHIBITED CLOSETS.**

(1) Where the Local Medical Authority has served a notice under Section 12 on the owner or occupier of any property requiring him to provide connections with a sewer, a privy-closet other than a water-closet approved by the Local Medical Authority must not be used on the property after a date fixed in the notice.

(2) If a privy-closet is used on any property contrary to Subsection (1), the owner or occupier on whom the notice was served is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

### **14. CONNECTIONS TO SEWERAGE SYSTEM.**

(1) Connections of plumbing work, drains or sewers with a sewerage system must be executed in accordance with this Regulation.

(2) A person who makes any such connection before a plan in respect of the connections to be made has been issued under Section 10 is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

## **15. DRAINAGE GENERALLY.**

(1) For the purposes of this section, a block of flats in one building shall be considered as one house.

(2) The drainage of each house and building shall be separate from that of any other house or building that is not—

- (a) on the same allotment; and
- (b) owned by the same person,

except where, in the opinion of the Sewerage Engineer, special reasons justify draining by a combined operation.

## **16. USE OF DRAINS.**

Subject to any exception imposed or permitted by the Sewerage Engineer, the occupier of a sewered property must discharge into the sewerage system—

- (a) all faecal matter, urine, household slops and household liquid refuse from the property; and
- (b) such other polluted water from stables, washing areas, manure bins, basements, cellars and roofed yards and such trade waste, as the Sewerage Engineer authorizes or requires.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

## **17. PROHIBITED DISCHARGES INTO DRAINS AND SEWERS.**

A person who throws, deposits or discharges, or causes or permits to flow or to be thrown, deposited or discharged, into a drain or sewer in a sewered area, or into any opening, pipe or receptacle connected with any such drain or sewer—

- (a) any garbage, offal, dead animal, vegetable, fruit, vegetable or fruit parings, ashes, cinders, rags, hair, oil, wool, silt, sand, gravel or refuse from a factory; or
- (b) petrol or other inflammable or explosive substance whether solid, liquid or gaseous; or

- (c) except by written permission of the Sewerage Engineer, roof, rain, surface or flood waters;  
or
- (d) except by written permission of the Sewerage Engineer, the contents of any night-soil cart, cesspool or privy; or
- (e) waste water, liquid, trade waste or other substance that has not been completely neutralized as to its acidity; or
- (f) trade waste that is above the temperature of 40°C, or such lower temperature as is determined by the Sewerage Engineer having regard to the special circumstances of the discharge; or
- (g) a liquid that contains such proportion of common salt or of any other mineral salt, acid or gas as, in the opinion of the Sewerage Engineer, is liable to be injurious to, or to form compounds injurious to, any part of the sewerage system or to employees engaged in the operation or maintenance of the sewerage system; or
- (h) any other matter or thing that, in the opinion of the Sewerage Engineer, is liable to be injurious to any part of the sewerage system or to employees engaged in the operation or maintenance of the sewerage system,

is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day which the offence continues after the receipt of a written notification from the Local Medical Authority.

## **18. DISCHARGE OF TRADE WASTES.**

- (1) This section applies in relation to the discharge of trade wastes into a sewer.
- (2) A written application for permission to discharge trade wastes from any property into a sewer shall be made to the Sewerage Engineer in the form determined by him, specifying—
  - (a) the process of manufacture from which trade wastes are to be discharged into the sewer; and
  - (b) the nature of the trade waste from every such process; and
  - (c) the estimated maximum rate of discharge of trade waste from every such process; and
  - (d) the hours of the day during which discharge of trade wastes from every such process will normally take place; and
  - (e) the estimated maximum daily discharge of the trade wastes into sewers; and
  - (f) such other information as the Sewerage Engineer requires.
- (3) Trade waste must not be discharged into the sewer unless—
  - (a) a written permit in Form 1 has been granted by the Sewerage Engineer; and
  - (b) an agreement has been executed by the applicant containing a covenant to comply with the conditions of the permit.
- (4) The Sewerage Engineer is the sole judge—

(a) as to the quality, quantity and rate of discharge of trade waste; and  
(b) as to whether they comply with the conditions of the permit and of this Regulation,  
and his decision is final.

(5) The Sewerage Engineer shall determine—

(a) the maximum aggregate daily quantity of trade waste that may pass from any property into a sewer; and  
(b) the size and capacity of the drain for conveying the trade waste from the property to the sewer; and  
(c) the hours during which the flow is permitted.

(6) If ordered by the Sewerage Engineer, the volume of trade waste discharged must be determined by meter or by some other means of measurement approved by him.

(7) Trade wastes must be passed through such settling, screening and neutralizing chambers and such other apparatus as is ordered or approved by the Sewerage Engineer in order to ensure that the resulting effluent complies with the requirements of the permit and of this Regulation.

(8) All apparatus or machinery referred to in Subsection (7) shall be approved in type and general arrangement by the Sewerage Engineer, but the applicant—

(a) shall determine the size and capacity; and  
(b) must obtain an effluent in compliance with the requirements of the permit and of this Regulation.

(9) The applicant must notify the Sewerage Engineer, in writing, of his desire to make any alterations to—

(a) any apparatus or machinery referred to in Subsection (7); or  
(b) the quality, quantity or rate of discharge of trade waste,

and the alteration shall—

(c) conform in all respects to the requirements of the original application; and  
(d) be approved by the Sewerage Engineer before being commenced.

(10) A notification under Subsection (9) must set out the details of the alterations proposed and the reasons for them.

(11) Where there is a change of ownership or occupancy of any property in respect of which a permit has been issued under this section, the person to whom the permit was granted must, at least 14 days before the change, notify the Sewerage Engineer, in writing, of the change.

(12) A permit issued under this section must not be assigned or transferred except with the written permission of the Sewerage Engineer.

(13) Where directed by the Sewerage Engineer, the owner or occupier of any property in respect of which a permit has been issued under this section must install to the design of the Engineer an approved chamber for the inspection, sampling and measurement of trade wastes or effluent.

(14) A chamber referred to in Subsection (13) must be readily accessible at all times to persons authorized by the Sewerage Engineer.

(15) The Sewerage Engineer, or a person authorized by him, may—

(a) at any reasonable time enter on any property in respect of which a permit has been issued under this section; and

(b) take samples of trade waste for analysis and otherwise; and

(c) inspect the apparatus or machinery referred to in Subsection (7).

(16) A settling, screening or neutralizing chamber or other apparatus for the treatment of trade wastes in accordance with this section must be cleansed and maintained by the occupier of the property at his own expense and at such intervals as are thought necessary by the Sewerage Engineer to ensure the efficient operation of the chamber or apparatus.

(17) Notwithstanding any permission or approval by the Sewerage Engineer, the occupier of any property in respect of which a permit has been issued under this section is solely liable for and in respect of—

(a) any accident, damage, loss or injury directly or indirectly arising out of or resulting from the discharge of trade waste from the property into a sewer; and

(b) all damage, loss or injury occasioned or done to a sewer or any property belonging to the State or any person or body by reason of any such discharge failing to comply with the terms, conditions and provisions of the permit or of this Regulation.

(18) The occupier shall agree to indemnify the Sewerage Engineer and the State against all claims and demands for any damage, loss or injury referred to in Subsection 17(a) made or suffered by any person.

(19) In a case to which Subsection 17(b) applies, the occupier shall pay the cost of making good any damage, loss or injury referred to in that paragraph.

(20) Whenever the Sewerage Engineer thinks it necessary, he may exclude from any sewers all trade wastes from any property during the repairing, examination or maintenance of the sewers or the carrying out by him of any works in connection with them.

(21) Compensation is not payable in respect of any exclusion of trade wastes from a sewer under Subsection (20).

(22) The discharge of trade wastes into a sewer is subject to any other conditions required by the Sewerage Engineer having regard to the special circumstances of the case.

(23) A person who discharges trade wastes into a sewer otherwise than in accordance with this section is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

## **19. DISCHARGE OF SUB-SOIL WATER.**

A person who discharges sub-soil water into a sewer otherwise than with the permission of, and under conditions approved by, the Sewerage Engineer is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

## **20. PRIVATE SEWERAGE SYSTEMS.**

(1) A person who constructs or operates a sewerage system—

(a) without the prior written approval of the Minister; or

(b) otherwise than in accordance with such standards as the Minister specifies in the interests of public health and convenience,

is guilty of an offence.

(2) The Minister may, by written notice to the owner of a sewerage system, require him to make such alterations to the system as the Minister thinks necessary in the interests of public health and convenience.

(3) A person who refuses or fails to comply with a requirement under Subsection (2) is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

## **21. PLUMBING AND DRAINAGE IN UNSEWERED AREAS.**

(1) The Sewerage Engineer may—

(a) issue permits for sanitary plumbing or drainage work to be carried out before the construction of sewers in any area; and

(b) arrange for the inspection of the work during construction.

(2) An inspection under Subsection (1) shall be paid for in advance by the owner of the property on which the work is carried out at such rates as the Sewerage Engineer determines.

(3) The Sewerage Engineer may issue a certificate of approval if he is satisfied that the work has been carried out in accordance with this Regulation.

## **PART V. – PERMITS AND AUTHORITIES GENERALLY.**

### **22. APPLICATIONS FOR APPROVAL TO CONNECT, ETC.**

(1) Application for approval to connect with a sewerage system or to do plumbing work connected with the connection (including all extensions, alterations or amendments) shall be made in writing to the Sewerage Engineer by the owner of the property from which the sewage is to be carried, or by the authorized agent of the owner.

(2) The application shall–

(a) set out–

(i) the description of the site of the property; and

(ii) the name of the owner; and

(iii) the name of the person employed to do the work; and

(iv) such other information as is required by the Sewerage Engineer; and

(b) be in the form required by the Sewerage Engineer.

(3) An approval does not authorize anything not stated in the application to which approval has been given.

### **23. CONDITIONS OF APPROVAL.**

Approval to connect with the sewerage system shall not be given unless–

(a) provision is made for all plumbing to be executed in accordance with this Regulation; and

(b) the plan has been submitted to and approved by the Sewerage Engineer; and

(c) in the case of a new building–the Sewerage Engineer has fixed the position of the branch at which the connection is to be made; and

(d) 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 Sewerage Engineer.

### **24. FORM OF SUBMITTED PLANS OF PLUMBING.**

A plan of a proposed sanitary plumbing installation submitted in accordance with Section 23 for approval shall–

(a) be neatly and accurately drawn to a scale of 1:100, with details to a scale of 1:20 if required by the Sewerage Engineer; and

(b) set out clearly–

(i) a plan of each floor, including the ground floor and basement (if any), on which fixtures are, or are proposed to be, installed, showing clearly–

(A) the nature and position of all fixtures; and

(B) the size and arrangement of all soil, waste, combined waste and vent pipes; and

(C) the position, size, gradient and approximate depth of all drains,

fixtures being designated by the symbols set out in Schedule 2 and the various pipe lines being delineated in colours, as follows:–

(D) soil pipes, combined waste pipes, waste pipes–blue; and

(E) vents–red; and

(ii) the intended use of each room in which a fixture is, or is proposed to be, installed and of each room from which a water-closet or urinal is entered directly; and

(iii) sectional line diagrams showing clearly–

(A) each soil, waste, combined waste or vent pipe or stack, together with their sizes; and

(B) the positions of all fixtures connected to them; and

(C) where required by the Sewerage Engineer, the gradient.

## **25. VARIATION FROM PLANS.**

After a plumbing or drainage plan has been approved by the Sewerage Engineer, a variation from the approved plan shall not be made except with the prior approval of the Sewerage Engineer or an officer authorized by him for the purpose.

## **26. ALTERATIONS TO BUILDINGS.**

Before any alteration or addition is made to a building or outbuilding connected to a sewer, the owner of the property, or the authorized agent of the owner, must–

(a) give notice to the Sewerage Engineer of his intention to do so; and

(b) provide such information in connection with any such alteration or addition as the Local Medical Authority requires.

## **PART VI. – EXAMINATION AND TESTING.**

### **27. NOTICE OF COMMENCEMENT AND COMPLETION OF WORK.**

(1) An owner of any property, or the authorized agent of the owner, must–

(a) give not less than 48 hours' written notice to the Sewerage Engineer before commencing any work in relation to a connection to a sewerage system; and

(b) report when the work is ready for inspection.

(2) All work must be left uncovered and convenient for examination until inspected and approved by the Sewerage Engineer or an inspector.

(3) Within seven days after the completion of any work, the person authorized to carry out the work shall file, in the office of the Sewerage Engineer, a correct statement of the work done, in the form prescribed by the Sewerage Engineer and countersigned by an inspector.

## **28. INSPECTION.**

Inspection of any work shall be made within 48 hours after the receipt of notification under Section 27 that the work is ready for inspection, unless the notification is received on a Friday or Saturday in which case the inspection shall be made within 48 hours after the start of business in the following week.

## **29. EXAMINATION OF MATERIALS, ETC.**

(1) Materials, pipes, bends, junctions, fittings, fixtures and apparatus—

(a) shall, if directed by the Sewerage Engineer, be submitted for examination or test; and  
(b) shall not be placed in position until passed or stamped by the Sewerage Engineer.

(2) An examination or test conducted under Subsection (1)(a) shall—

(a) be paid for by the person submitting the materials, or as the case may be; and  
(b) be done at such time and place as are ordered, and at such rates as are fixed, by the Sewerage Engineer.

## **30. TESTING OF DRAINS.**

(1) Every drain shall be thoroughly tested by an inspector before being approved, and if a drain is altered or repaired it shall be thoroughly tested by an inspector before the alterations or repairs are so approved.

(2) The inspector may apply the water, smoke or air-pressure test.

(3) The owner of the property on which the drain is situated, or the authorized agent of the owner, shall furnish such tools, labour and assistants as are necessary for any test under Subsection (2).

(4) The special testing apparatus for the water test and the smoke test shall be supplied by the plumber, or may be hired by the plumber from the Sewerage Engineer on behalf of the State.

(5) The water test—

(a) may be applied to any drainage and plumbing systems and their fittings in their entirety or in sections; and

(b) shall be applied by—

(i) hermetically sealing all openings below the top section to be tested; and  
(ii) then filling the system with water to the highest point of the section or, if thought necessary, to such additional height as the inspector orders; and  
(iii) carefully examining every joint for leaks,

and the loss of water shall not exceed the amounts permitted by the Sewerage Engineer.

(6) The smoke test shall be applied by–

- (a) forcing into the system thick smoke to a pressure of 25mm of water, by means of a smoke test apparatus; and
- (b) closing all openings at which smoke appears; and
- (c) keeping up the pressure for five minutes after the last opening is closed.

(7) Before–

- (a) the fittings are connected with the plumbing of the house or building, or if so ordered after they are connected; and
- (b) 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 and the pipe filled with water to such height as the inspector requires, and every joint carefully examined for leaks.

(8) Work already in place may be tested as and when required by the Sewerage Engineer.

### **31. USE OF APPARATUS, ETC., BEFORE TESTING.**

(1) Pipes, drains or apparatus in connection with sewerage or drainage shall not be used until the work has been–

- (a) inspected, tested and passed by the Sewerage Engineer or an inspector; and
- (b) certified by him on the prescribed form.

(2) Underground or enclosed work shall not be covered up or concealed until it has been inspected and passed.

(3) Every part of the work shall be made to conform with this Regulation, and is subject to the approval of the Sewerage Engineer.

## **PART VII. – EXECUTION OF WORKS.**

### **32. REQUIREMENT OF APPROPRIATE LICENCE.**

(1) Subject to Subsection (2), unless he holds the appropriate licence under the *Trade Licensing Act 1969*, or is employed under the supervision of the holder of such a licence, a person must not–

- (a) execute or perform any work in the nature of sanitary plumbing intended to be connected to a sewer or in a sewered area; or
- (b) lay or repair a drain connected or intended to be connected to a sewer.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(2) Notwithstanding Subsection (1)(a), a person who holds the appropriate licence under the *Trade Licensing Act 1969* may execute any water supply plumbing necessary to sanitary work.

(3) A person who knowingly engages or employs, for the actual performance of plumbing or drainage work for purposes of this Regulation, a person who—

(a) is not the holder of a licence authorizing him to perform that class of work; or

(b) is not employed under the supervision of the holder of such a licence,

is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(4) Where the licence under the *Trade Licensing Act 1969* of a person has been suspended or cancelled, it is a good defence to a prosecution for an offence against Subsection (3) if the defendant proves that at the time of the alleged offence he was not aware of the suspension or cancellation of the licence.

### **33. SUPERVISION OF WORK.**

Connections with the drains or sewers, including plumbing connections, shall be made under the direction of the Sewerage Engineer, an inspector, or a supervising officer.

### **34. RESPONSIBILITY OF TRADESMEN FOR WORK.**

(1) The holder of a licence as a sanitary plumber or drainer under the *Trade Licensing Act 1969* must ensure that all work carried out under an approval given or permit issued under this Regulation is done in accordance with this Regulation.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(2) Where, in the opinion of the Sanitary Engineer, work has been carried out by a sanitary plumber or drainer in an unsatisfactory manner, the Local Medical Authority may charge the licensee a fee to cover the cost of additional inspections resulting from his default.

(3) A person holding a licence for the purpose under the *Trade Licensing Act 1969* who executes any works in connection with sewerage, drainage or sanitary plumbing shall, when directed by the Sewerage Engineer, make good at his own expense any defect found within 12 months of the date of completion of the work, that in the opinion of the Sewerage Engineer is due to faulty workmanship or defective material.

## **PART VIII. – CONSTRUCTION GENERALLY.**

### **35. MATTERS NOT SPECIFICALLY DEALT WITH.**

Any work pertaining to the provision or maintenance of sanitary plumbing or house drainage not specified in this Regulation shall be done as directed by the Sewerage Engineer.

### **36. MATERIALS, ETC.**

Materials, pipes, bends, junctions, fittings, fixtures and apparatus shall–

(a) be of the best of their respective kinds, sound and free from defects; and

(b) comply with–

(i) such relevant Australian Standard Specifications as are accepted by the Sewerage Engineer; or

(ii) such specifications as are approved by the Sewerage Engineer.

### **37. WORKMANSHIP.**

All work shall be executed in a thorough and workmanlike manner and to the satisfaction of the Sewerage Engineer.

### **38. SAFETY PRECAUTIONS.**

Adequate precautions shall be adopted by persons carrying out sanitary plumbing or drainage work to prevent injury to workmen, the public or property.

## **PART IX. – STANDARDS, ETC.**

### **39. CONCRETE.**

Unless otherwise ordered by the Sewerage Engineer, concrete shall–

(a) consist of one part Portland cement, two parts clean, sharp sand and four parts hard stone, shingle or gravel not exceeding 18mm gauge; and

(b) be thoroughly mixed with clean water to such consistency as is approved by the Sewerage Engineer.

### **40. CEMENT MORTAR.**

Unless otherwise ordered by the Sewerage Engineer, cement mortar shall–

(a) consist of one part Portland cement and two parts clean, sharp sand; and

(b) be properly mixed with a proportion of clean water approved by the Sewerage Engineer.

### **41. DRAINAGE MATERIALS.**

Drain pipes, bends, junctions and fittings used shall be of glazed stoneware, concrete, cast-iron or other material approved by the Sewerage Engineer, but the Sewerage Engineer may prohibit the use of any of those materials where he thinks that the circumstances or conditions are unfavourable.

#### **42. INTERCEPTOR TRAPS.**

(1) An interceptor trap—

- (a) may be fixed if desired by the owner; and
- (b) shall be fixed if ordered by the Sewerage Engineer,

in the drain laid from any property to the sewer.

(2) An interceptor trap shall—

- (a) be fixed as near as practicable to the boundary of the subject property; and
- (b) where practicable, be within the boundaries of the property; and
- (c) be provided with an approved inspection cap on the sewer side of the trap; and
- (d) if so ordered by the Local Medical Authority or an inspector, be provided with an approved inspection chamber.

#### **43. INSPECTION CHAMBERS.**

(1) Where thought necessary by the Sewerage Engineer, drains shall join in an inspection chamber at least 900mm long by 600mm wide, fitted with a closed cover.

(2) The portions of the drains crossing the floor of the inspection chamber shall be connected in a straight line or by curved junctions in the floor of the chamber.

#### **44. INSPECTION OPENINGS.**

(1) Every line of drain shall be provided with an inspection opening—

- (a) at each junction not provided with an inspection chamber; and
- (b) at each change of direction; and
- (c) at each fitting; and
- (d) at intervals of not more than 12m,

and in paved areas, inspection openings shall, if thought necessary by the Sewerage Engineer, be brought to the surface and furnished with approved air-tight covers.

(2) The area of an inspection opening referred to in Subsection (1) shall not be less than the area of the cross-section of the drain at the place where the inspection opening is provided.

#### **45. GRATINGS.**

(1) An inlet to a drain, other than an inlet from a water-closet, shall be effectively protected by approved gratings of ample area.

(2) The aggregate area of the apertures in a grating covering a ventilation opening shall not be less than the sectional area of the pipe or drain ventilated by the grating.

(3) An opening for ventilation shall be kept by the occupier of the land on which the drain is situated completely free from obstruction.

#### **46. CLOSURE OF OPENINGS.**

(1) The ends of a drain not immediately connected with the plumbing fixtures, and all inspection openings, shall be securely closed with water-tight imperishable materials.

(2) In the case of a stoneware drain, the end shall be closed with a stoneware or cast-iron disk cemented in.

(3) In the case of a wrought-iron drain, the end shall be closed with a plug screwed on the end.

(4) In the case of a cast-iron drain, the end shall be closed with a cast-iron plug caulked in with lead.

#### **47. REPLACEMENT OR INSERTION OF PIPES.**

(1) Where it is necessary to remove a pipe to clear a stoppage or to insert a pipe or branch in an existing stoneware or concrete drain, the pipe removed shall be replaced by an inspection pipe or an inspection junction of the same length, by one of the following methods:—

(a) the top half of the socket of the new pipe and of the existing downstream pipe may be removed, but the bottom half, in each case, shall be left intact and the joints surrounded by concrete;

(b) an approved split pipe with double collar surrounded with concrete may be used;

(c) a length of not less than three pipes may be removed, the centre pipe replaced by an inspection pipe and the pipes dropped back into place without springing or cutting.

(2) Junctions shall not be made in existing metal pipes unless an approved downpipe is used in each case, and pipes shall not be sprung into position.

#### **48. USE OF CONCRETE.**

Concrete shall be used—

(a) around and under yard gully basins, the exposed surfaces being rendered with cement mortar; and

(b) around the tops of educt vent and induct vent pipe sockets where they are exposed; and

(c) around interceptor trap covers and the tops of disconnecter traps where the surface is not paved; and

(d) under and around bends rising vertically off oblique branches and under bases of all drainage traps; and

(e) around drains near tree roots and in such other places as the Sewerage Engineer directs.

#### **49. FIXTURES IN CELLARS.**

(1) A sink, trap, water-closet, urinal or other fixture or apparatus shall not be laid or fitted in a cellar or basement, or on a floor below ground level, unless—

(a) the written consent of the Sewerage Engineer has been first obtained; and

(b) the owner—

(i) submits such information as is required by the Sewerage Engineer; and

(ii) undertakes, in writing, in an approved form, to accept all liability for damage that may occur; and

(iii) gives to the Sewerage Engineer and the State such indemnity in reference to that liability as the Sewerage Engineer requires; and

(c) in areas liable to flooding—no external aperture to the cellar or basement is below the highest known flood level; and

(d) no external aperture to the cellar or basement is in such a position that storm water, roof water or surface water can enter; and

(e) the ventilation of the cellar or basement is in accordance with this Regulation; and

(f) such other conditions as are required by the Sewerage Engineer, having regard to the special circumstances of the case, are complied with.

(2) If on an inspection it is found that—

(a) the light or ventilation is not in accordance with this Regulation; or

(b) in the opinion of the Sewerage Engineer, the fixtures and their surroundings are not kept in a sanitary condition; or

(c) the purpose for which the cellar, basement or floor below ground level was used at the time when a consent was granted under Subsection (1) has changed; or

(d) Subsection (1) has not been complied with,

the consent under Subsection (1) may be revoked by the Sewerage Engineer.

(3) If a consent is revoked under Subsection (2), the closet, urinal or other fixture shall be disconnected from the sewers within 14 days from the date of the revocation.

## **50. DRAINAGE FROM CELLARS, ETC.**

(1) Where a cellar, basement or floor below ground level the subject of a consent under Section 49(1)(a) is at such a level as, in the opinion of the Sewerage Engineer, may involve risk of backflow in, or defective operation of, the drain, the owner must cause the sewage from all fixtures—

(a) to be raised by a method approved by the Sewerage Engineer to such a height as is ordered by the Local Medical Authority or an inspector; and

(b) to be discharged into the sewer as and where so ordered.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(2) The water seal of the trap in the drain pipe leading from the cellar, basement or floor below ground level shall be constantly maintained.

## **51. SEEPAGE DRAINS.**

(1) A person who discharges a seepage drain from a cellar, basement or floor below ground level into a sewer without the consent of the Sewerage Engineer is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(2) Where discharge into a sewer is approved by the Sewerage Engineer under Subsection (1), the seepage shall be—

(a) raised by ejector siphon or other approved apparatus to such height as is ordered by the Sewerage Engineer; and

(b) discharged into the sewer as and where so ordered.

## **52. DRAINAGE FROM POLLUTED AREAS.**

(1) A stable, cow stall, market-place, receptacle for sludge water from factories, area where milk cans are washed or area on which foul or polluted waters are discharged shall be graded, paved and drained to the satisfaction of the Sewerage Engineer, and the drain shall be provided with an approved silt trap connected with the drain.

(2) In the case of a motor car washing area, triple oil interceptor traps shall be provided.

(3) A silt trap referred to in Subsection (1) 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.

(4) Where written notice is given by the Local Medical Authority to the owner of any property in a sewered area on which horses or cattle are kept, manure bins shall be provided for all stables, cow sheds and yards where the horses or cattle are kept.

(5) A manure bin provided under Subsection (4) shall be—

(a) constructed of concrete or brickwork at least 225mm thick, laid in cement mortar; and

(b) provided with a ledged, braced and hinged cover; and

(c) rendered and made impervious throughout.

(6) Unless special permission is given by the Sewerage Engineer to the contrary, a place referred to in Subsection (1) or (2) that is to be connected to the drain shall be so roofed or raised above the adjoining ground as to prevent the entry of rain or surface water into the sewers.

(7) A person who permits rain-water conduits from adjoining roofs to discharge on to an area referred to in Subsection (1) or (2) is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

### **53. DRAINAGE TRENCHES.**

(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 connection, in accordance with the drainage plan submitted under Section 23.

(2) The face of the trench nearest the branch sewer shall be filled up with brick or rubble masonry or timbered up as and where ordered by the Local Medical Authority or an inspector.

(3) In refilling the trench, sand, gravel or other approved material shall first be deposited around the sides of the pipe and up to a depth of 300mm over the barrel of the pipe and carefully consolidated, after which the remainder of the trench shall be filled in, in layers not more than 300mm in thickness, each layer being rammed or flooded as ordered by the Local Medical Authority or an inspector or approved by the Local Medical Authority or the Sewerage Engineer.

(4) After the trench is filled in, the surface material shall be restored, as nearly as possible, to the same condition as that in which it was before operations were commenced, or otherwise in accordance with this Regulation and by arrangement with the owner of the property.

(5) The material from the trench shall be placed so as to cause the least possible obstruction and inconvenience to the public, and proper barriers and lights shall be maintained where necessary to guard against accident during the progress of the work.

(6) A person who allows water, sand, earth or other prohibited discharge to enter the sewer during the progress of the work is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

### **54. POSITION AND LINE OF DRAINS, ETC.**

(1) A drain, and a fitting or appliance connected to a drain, shall be laid and fixed where ordered by the Sewerage Engineer.

(2) Where a change of direction occurs in a drain, adequate provision shall be made for inspection and cleaning by means of—

- (a) a manhole or inspection chamber; or
- (b) an oblique junction or suitably curved pipe provided with an inspection eye; or
- (c) a suitably curved pipe with an inspection opening on each immediately- adjoining pipe.

#### **55. OBLIQUE JUNCTIONS.**

Where a drain joins another drain or sewer, the junction shall be made obliquely at an angle not greater than 45° with the direction of flow of the other drain or sewer.

#### **56. CONNECTION TO SEWER.**

The disk stopper at the point of connection to the sewer shall be carefully removed so as not to injure the socket or allow debris or other matter to get into the pipe.

#### **57. GRADIENTS.**

(1) A drain shall be laid on an even grade and, except with the permission of the Sewerage Engineer, the gradient shall not be less than—

- (a) for a 100mm diameter drain—1 in 40, or 2.50%; and
- (b) for a 125mm diameter drain—1 in 50, or 2.00%; and
- (c) for a 150mm diameter drain—1 in 60, or 1.66%; and
- (d) for a 225mm diameter drain—1 in 90, or 1.11%.

(2) If permission is given for the use of flatter gradients than those prescribed by Subsection (1), the Sewerage Engineer may require special provision to be made to ensure regular and efficient flushing.

(3) Except with the permission of the Sewerage Engineer, a drain shall not be laid at a steeper grade than—

- (a) for a 100mm diameter drain—1 in 10, or 10%; and
- (b) for a 150mm diameter drain—1 in 15, or 6.33%; and
- (c) for a 225mm diameter drain—1 in 20, or 5%; and
- (d) for a 300mm diameter drain—1 in 25, or 4%.

(4) If approval is given for steeper grades than those prescribed by Subsection (3), concrete anchor blocks shall be placed at intervals of not more than 9m, each block—

- (a) having a minimum width of 300mm along the pipe; and
- (b) being of such thickness that there is at least 75mm above and below the pipe; and
- (c) extending at least 200mm into the virgin ground at each the side of the trench.

#### **58. DEPTH OF DRAINS.**

(1) Unless it is bedded on and encased in concrete of not less than 80mm thickness over any part of the drain, a drain of stoneware, concrete or pitch fibre pipe shall, subject to Subsection (3), be laid at a depth to the top of the socket of the pipe of not less than—

- (a) in a public thoroughfare or right of way, or in any other open space subject to vehicular traffic—600mm; or
- (b) in private property not subject to vehicular traffic—300mm.

(2) Unless such measures are taken to protect the drain as the Sewerage Engineer approves, a person who alters the surface over a drain so as to deprive it of the minimum depth of cover prescribed by Subsection (1) is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(3) Where in his opinion the nature of the soil or the traffic makes it necessary, the Sewerage Engineer may require the depth of cover or the thickness of concrete to be greater than that prescribed by Subsection (1).

## **59. LAYING OF DRAINS.**

(1) Pipes shall be laid to such lines and grades as are shown on the plans submitted under Section 23 or ordered by the Local Medical Authority or an inspector.

(2) Except where otherwise ordered by the Local Medical Authority or an inspector—

(a) holes shall be cut in the bottom of the pipe trench to receive the sockets of the pipe; and  
(b) the pipe shall be carefully bedded with the barrel on the solid ground.

(3) In the case of a rock-bottomed trench or where ordered by the Local Medical Authority or an inspector, the pipes shall be bedded up to the horizontal diameter on not less than 50mm thickness of approved sand or other approved material, measured from the barrel of the pipe.

(4) In water-charged ground, or where the foundation is bad, or where ordered by the Local Medical Authority or an inspector, the drain shall be formed of—

(a) cast-iron pipes; or

(b) stoneware, concrete or pitch fibre pipes—

(i) bedded on and encased in concrete in such a manner that there is—

(A) not less than 80mm of concrete underneath the barrel of the pipe; and

(B) not less than 80mm of concrete extending on each side beyond the largest diameter of the barrel of the pipe; and

(ii) haunched so that the top line of the concrete meets the pipe not less than 25mm above the top of the pipe; and

(iii) if ordered by the Local Medical Authority or an inspector—supported on approved foundations of timber or other approved material as so ordered.

(5) Drops or bends in vertically-inclined drains shall have 100mm of concrete placed under and around as ordered by the Local Medical Authority or an inspector.

(6) Where pitch fibre pipes are used for the purposes of this Regulation, they shall conform to British Standard Specification 2760-1973:A56.

## **60. DRAINS UNDER BUILDINGS.**

(1) A drain or sewer shall be constructed so as not to pass under a building except where no other mode of construction is practicable, and if a drain or sewer is constructed to pass directly under a building it shall—

(a) be laid in a direct line for the whole distance beneath the building; and

(b) have approved means of access for rodding—

(i) outside the walls of the building; and

(ii) if ordered by the Local Medical Authority or an inspector, beneath the building.

(2) Where the underside of the floor of the building is at least 1,200mm above the ground surface, then either—

(a) earthenware or concrete pipes—

(i) laid on continuous concrete cradling at least 100mm thick under the barrel of the pipe with at least 300mm of cover over the pipe; or

(ii) completely surrounded in concrete of a minimum thickness of 100mm,

shall be used; or

(b) cast-iron pipes shall be used as ordered by the Local Medical Authority or an inspector.

(3) A drain pipe carried through a wall shall have a clear space of 80mm, filled with approved mastic, left around it.

(4) A pipe brought up inside a building to connect a water-closet, slop hopper or similar installation—

(a) if it does not exceed 1,200mm—may be of stoneware or concrete, surrounded in 100mm of concrete; or

(b) if it exceeds 1,200mm—shall be of cast-iron, or if approved by the Sewerage Engineer, of copper.

(5) A building or outbuilding shall not be erected over an existing house drain or sewer unless provision exists to comply with this section.

(6) Where an existing sewer main or sewer house connection has to be altered or relocated by reason of an alteration or addition to a building, the owner of the building is liable for the whole cost of the alteration to or relocation of the main or connection.

## **61. SALT GLAZED WARE AND CEMENT AND CONCRETE PIPES.**

(1) Joints of salt glazed ware and of cement pipes shall be filled in solidly with—

(a) cement mortar neatly splayed off; or

(b) other approved material.

(2) After a joint is made, the interior of the joint shall be wiped clear of surplus mortar.

(3) The Sewerage Engineer may order or approve the use of rubber ring joints with concrete pipes.

(4) Special jointing in very wet ground or for special discharges shall be as ordered or approved by the Sewerage Engineer.

## **62. CAST-IRON PIPES.**

(1) Joints in cast-iron pipes shall be—

(a) stemmed with approved gaskets; and

(b) so filled and caulked with lead or other approved material as to make them gas-tight and water-tight.

(2) Joints between cast-iron and stoneware or concrete pipes shall be made in the same way as joints between salt glazed ware or concrete pipes.

(3) Where cement jointing is used on cast-iron pipes, and in other cases where directed by an inspector, the protective coating shall first be removed from the portion of the cast-iron pipe that is in contact with the cement.

## **63. TRAPPING OF INLETS.**

(1) An inlet to a drain, other than an inlet provided for ventilation in accordance with this Regulation, shall be provided with an approved trap.

(2) Except in the case of the combined pipe system, an inlet to a drain connecting directly with a sewer, other than an inlet that is necessary for the apparatus of a water-closet, urinal or slop sink, shall not be constructed within a building.

## **64. CLASSES OF TRAPS.**

The following classes of traps shall be used as required:—

(a) drainage traps, for intercepting gases only, which shall be of round section and self-cleansing form, but not such as to empty by momentum or section; and

(b) silt traps, for intercepting both gases and solids, which shall—

(i) have slightly tapered sides, flat bottoms and rounded angles; and

(ii) be provided with approved means of catching and removing solids; and

(c) grease traps, of such form as is approved by the Local Medical Authority or the Sewerage Engineer, for solidifying and collecting grease or other semi-fluid matter liable to foul the pipes; and

(d) acid traps or neutralizers, for neutralizing acids and acidulated water before entering the house drains; and

(e) oil traps, for collecting all kinds of oil and preventing it from entering the house drains.

## **65. WATER SEALS.**

A drainage trap shall have a water seal not less than 50mm in depth.

## **66. PROVISION OF YARD GULLIES.**

Unless other approved provision is made for taking household liquid refuse, a yard gully–

(a) shall be provided in the yard of every property as near as practicable to the kitchen or back door, with a tap placed over it at a height of not less than 600mm; and

(b) shall not be situated within a building or outbuilding.

## **67. DETAILS OF YARD GULLIES.**

(1) A yard gully shall be fitted with a dished top and grating, the dished top being–

(a) in one piece with the trap; or

(b) jointed to the trap with a spigot and faucet; or

(c) as otherwise approved by the Local Medical Authority or the Sewerage Engineer.

(2) The depth of the dished top to the grating shall not be less than 150mm, and the grating shall be fixed so as to be removable with reasonable facility.

(3) The wastes shall discharge below the grating.

## **68. KERBING TO YARD GULLIES AND SILT TRAPS.**

(1) A yard gully basin and the top of a silt trap–

(a) shall be surrounded with an approved impervious kerbing of concrete or other approved material to prevent ingress of surface water to the drains; and

(b) if ordered by the Local Medical Authority or an inspector, the wall at the rear of the gully or silt trap–

(i) if of brick or stone, shall be cement-rendered to the height of the tap over the gully or silt trap; and

(ii) if of wood, shall be provided with an approved galvanized sheet iron apron.

(2) A rain-water pipe shall not discharge into a gully or fixture connected with the sewerage system.

(3) A gully or pit for the disposal of road drainage, or for the disposal of storm water from a roof, yard or vacant land, shall not be connected to a sewer.

## **69. SEALED DISCONNECTOR TRAPS.**

(1) Where approved by the Sewerage Engineer, sealed disconnecter traps may be affixed inside or outside a building or outbuilding, but breather pipes or fresh air inlets equal in area to the waste pipe or pipes discharging into the trap shall–

(a) be taken to such height as is ordered by the Local Medical Authority or an inspector; and

(b) in the case of traps inside, be led to the outside of the building or outbuilding.

(2) The material for breather pipes shall be the same as for vent pipes.

(3) Inspection openings to traps referred to in Subsection (1) shall be sealed to the approval of the Sewerage Engineer.

## **70. PROVISION OF GREASE, PETROL AND OIL TRAPS.**

Wastes from the following fixtures and areas shall first discharge into an approved apparatus for retaining objectionable matter:—

(a) any fixture or area from which petrol, benzine or other inflammable or explosive substance, or grease, oil or greasy or oily matter, is likely to be discharged or conveyed into waste, combined waste or soil pipes or drains;

(b) a sink in a food-packing house, butcher's shop, lard-rendering establishment, hotel, restaurant or boarding house;

(c) such other fixtures, areas or apparatus as the Sewerage Engineer directs.

## **71. CONSTRUCTION OF GREASE TRAPS.**

(1) Grease traps shall be fixed outside buildings or outbuildings wherever practicable.

(2) An external grease trap shall be constructed of glazed stoneware, brick in cement, concrete or other approved material to the standard approved by the Sewerage Engineer.

(3) An internal grease trap shall—

(a) be constructed of copper or other approved material; and

(b) if ordered by the Local Medical Authority or an inspector, be fixed on a tray,

and its design shall be approved by the Sewerage Engineer before work commences.

(4) The outlet from a grease trap shall be connected to a disconnector trap.

## **72. SIZE OF GREASE TRAPS.**

(1) The dimensions of a grease trap shall be such as to ensure the retention of all grease entering the trap.

(2) The minimum size and dimensions for a grease trap serving a kitchen sink or mechanical dishwasher shall be as follows:—

(a) the capacity below the level of the invert of the outlet shall be not less than the total capacity of the sink or dishwasher served;

(b) the height from the top of the outlet of the grease trap to the vent take-off shall be not less than 100mm;

(c) the difference in level between the inverts of the inlet and outlet shall be not less than 25mm.

(3) The capacity of a sink shall be measured to the overflow level, or if there is no overflow to the top of the sink.

(4) The capacity of a dishwasher shall be taken as that of the sump or water container.

### **73. CONSTRUCTION OF PETROL AND OIL TRAPS.**

A petrol trap or an oil trap shall be—

- (a) constructed in accordance with the Sewerage Engineer's type drawing and to the approval of the Sewerage Engineer; and
- (b) connected to a disconnecter trap; and
- (c) provided with independent ventilation, the outlet of which is made flame-proof by soldering approved fine bronze mesh gauze over the opening.

### **74. VENTS ON MAIN HOUSE DRAINS.**

(1) The main drain of a house shall be ventilated at its upper end by a pipe ventilator erected vertically, and the ventilator may be a soil vent pipe.

(2) If the drain is provided with an interceptor trap—

- (a) there shall also be a ventilator connected to the interceptor trap shaft; and
- (b) where practicable, there shall be a difference in height of not less than 2m between the tops of the vents at the upper and lower ends of the drain, respectively.

### **75. VENTS ON BRANCH DRAINS.**

A branch drain need not be vented if the drainage traps are within 6m of the main house drain, measured along the line of pipes, including the drop (if any) from the centre line of the main drain to the centre of the outlet side of the water seal of the drainage trap.

### **76. SIZE OF DRAINAGE VENTS.**

(1) Unless otherwise ordered by the Local Medical Authority or an inspector, a drainage vent pipe shall be not less than—

- (a) 100mm in diameter in the case of an educt vent; and
- (b) 80mm in diameter in the case of an induct vent.

(2) Where more than one educt vent is provided, the vent on the longest line of drain shall be not less than 100mm in diameter and all others not less than 80mm in diameter.

(3) A drainage vent shall not be smaller in diameter than is necessary to comply with Section 95.

(4) Unless otherwise ordered by the Local Medical Authority or an inspector or approved by the Local Medical Authority or the Sewerage Engineer, a drainage vent pipe shall be provided with an approved basket end, educt or induct cowl.

### **77. MATERIALS FOR DRAINAGE VENTS.**

(1) A drainage vent pipe situated wholly outside buildings and outbuildings shall be of—

- (a) cast-iron, galvanized wrought-iron, galvanized sheet iron or other approved material above the surface of the ground; and
- (b) salt-glazed ware or concrete beneath the surface of the ground.

(2) A galvanized sheet iron vent pipe shall be grooved and welded, soldered or riveted, and shall not be less than—

- (a) 1mm thick for a 80mm or 100mm diameter pipe; and
- (b) 1.20mm thick for a 150mm diameter pipe,

and the first 2m above ground shall be of cast-iron or other approved material.

(3) The circumferential joints of a galvanized sheet iron bent pipe shall be riveted and soldered.

(4) Unless otherwise approved by the Local Medical Authority or the Sewerage Engineer, a drainage vent pipe inside a building or outbuilding shall be of —

- (a) cast-iron, of soil pipe strength; or
- (b) galvanized wrought-iron.

#### **78. MATERIALS FOR VENTS OF SOIL OR WASTE PIPES.**

(1) Subject to Subsection (2), a vent pipe shall be of cast-iron, wrought-iron, lead, copper or brass.

(2) If it is entirely outside a building or outbuilding and is higher than 600mm above the level of the highest fixture served by the pipe, a vent pipe may be of grooved and welded or riveted galvanized sheet iron.

(3) A lead vent pipe—

- (a) for use with a water-closet, urinal or slop sink —shall not be less than 2.8mm thick; and
- (b) for use with other fixtures—shall not be less than 2.4mm thick.

(4) External vent pipes of galvanized sheet iron shall not be less in thickness than the following:—

- (a) 40, 50 or 65mm diameter—0.8mm; or
- (b) 80 or 100mm diameter—1mm; or
- (c) 150mm diameter—1.6mm.

(5) A galvanized sheet iron vent shall be—

- (a) coated on the inside with an approved bituminous coating; and
- (b) painted on the outside to the colour required by the owner of the land on which the vent is situated.

#### **79. SOIL VENT PIPES.**

The upward extension from a soil pipe for ventilation shall pass in as direct a manner as possible above, and if necessary through, the roof.

#### **80. LENGTH OF UNVENTED WASTE.**

(1) A waste pipe need not be ventilated unless it exceeds 3m in length on a horizontal plane or an aggregate of 6m in length on all planes, if–

- (a) the water seal of the trap is not reduced by siphonage or other cause and there is only one fixture (not being a sink connected to a grease trap) attached to the waste pipe; or
- (b) two waste fixtures are connected to one 100mm diameter back-inlet waste pipe.

(2) Anti-siphon traps shall not be used unless approved by the Sewerage Engineer and installed in a manner specified in the approval.

### **81. ANTI-SIPHONAGE VENTS.**

(1) Loss of the water seal in a trap shall be prevented by proper ventilation in accordance with Section 95 and, unless the Sewerage Engineer approves otherwise, such anti-siphonage vents from fixtures shall be carried up in accordance with Section 82 or joined to the branch or main vent above the level of the fixture.

(2) The vent pipe shall connect to the waste or soil pipe, on the opposite side of the water seal from the fixture, at a point not less than 80mm or more than 600mm from the crown of the trap, except in the case of a closet pan when the vent pipe shall not be more than 1,200mm from the crown of the trap.

(3) No other fixture shall be connected to the soil pipe or waste pipe at a point between the anti-siphonage vent and the trap that it serves.

### **82. HEIGHT OF VENT PIPES.**

(1) Unless otherwise ordered by the Local Medical Authority or an inspector–

- (a) a vent pipe extending upwards from a soil or drain pipe shall be carried not less than 2m higher than any door, window or other opening into a building within a distance of 10m from the vent pipe; and
- (b) an educt vent shall be carried at least 4m above ground level and 1m above the level of the eaves or coping.

(2) A vent pipe extending upwards from a waste pipe or disconnector trap shall be carried–

- (a) not less than 1,200mm higher than any door, window or other opening into a building within 5m from the vent pipe; and
- (b) at least 600mm above the level of the eaves or coping.

(3) A vent pipe under the roof or eaves of a building shall be carried at least 600mm above the point of intersection with the roof.

(4) Where necessary, a vent shall be carried to such additional height as is required to effectively prevent the escape of foul air into any building in the vicinity.

(5) Where necessary, a vent pipe shall be provided with sufficient clips or stays to support it effectively.

(6) Where a flat roof is used for any purpose other than as a covering to the building—

(a) a vent pipe from a soil pipe or house drain shall be carried at least 3m above roof level; and

(b) a vent from a waste pipe shall be carried at least 2,500mm above roof level.

### **83. GROUND VENTS.**

An approved ground vent may be used on a boundary trap when situated not less than 10m from any window, door or other opening into a building.

### **84. USE OF CHIMNEYS AS VENTILATORS.**

A chimney shall not be used as a ventilator to a drain, soil or waste pipe.

### **85. VENTS NEAR CHIMNEYS, ETC.**

(1) A vent shall be kept as far away as possible from a chimney or ventilating air shaft.

(2) Section 82 applies where a ventilator pipe terminates 2m or more from a chimney opening or ventilating air shaft, but where the distance is less than 2m and the vent pipe is at least 4m long it shall terminate not less than 600mm below the top of the chimney or air shaft.

### **86. VENT PIPE GRADES.**

(1) A vertical line of vent pipe shall—

(a) connect, full size, at its base with a soil, waste or drain pipe; and

(b) either—

(i) extend in undiminished size above the roof; or

(ii) be connected to the soil, waste or vent stack, as prescribed by Section 87(1) on a grade not less than 1 in 40.

(2) An offset shall be at a grade not less than 45° to the horizontal.

(3) A vent pipe shall not be used as a waste or soil pipe.

### **87. COMBINING OF VENTS, ETC.**

(1) A vent pipe may be combined or branched into a soil or waste pipe above the level of the highest fixture, but in the case of a separate pipe system a soil vent shall be branched into a soil pipe or vent, and a waste vent into a waste pipe or vent, only.

(2) Where an additional branch is required to an existing galvanized sheet iron vent pipe, a brass saddle piece, bolted and soldered to the vent, shall be used.

### **88. PIPE CLIPS, ETC.**

(1) There shall be at least one pipe hook or clip to each 2m length of vent pipe.

(2) Approved coated wrought-iron clips shall be provided for cast-iron pipes without lugs, and for wrought-iron pipes.

(3) Galvanized band iron clips (40mm by 2mm thick) or approved pipe hooks shall be provided for galvanized sheet iron pipes.

(4) For cast-iron pipes with lugs, two 65mm by 12mm coach screws or dog nails shall be provided for each pair of lugs.

(5) Where it is necessary to fix a pipe clear of the wall, approved extension clips shall be used which, in the case of a cast-iron pipe, shall be placed tight up against the head or underside of the collar.

### **89. ATTACHMENT TO WALLS.**

(1) Unless otherwise ordered by the Local Medical Authority or an inspector, where a galvanized sheet iron pipe, with or without offset, is carried above the brick wall of a building or outbuilding a galvanized wrought-iron clip shall be used, leaded into the wall near the top wherever possible, and bolted against the vent pipe.

(2) A band iron clip of a vent pipe to a brick wall shall be fastened—

(a) with nuts and bolts, leaded in; or

(b) by means of T-headed bolts passed through the brick joints and turned at right angles to the joints.

### **90. SUPPORTING OF VENTS.**

A vent pipe—

(a) the top of which is more than 3,000mm above the highest fastening to structure; or

(b) that has an offset above the top holdfast,

shall be stayed by at least two approved stays set at right angles to each other.

### **91. VENTS ADJOINING HIGH BUILDINGS.**

(1) Where—

(a) a building is erected next to an existing building of less elevation; and

(b) a window of the new building is located within 10m of an existing vent stack on the lower building,

the owner of the new building shall defray the cost of the alterations to the vents of the previously existing building that are necessary to comply with Section 82.

(2) The owner of the lower or existing building shall—

(a) on receipt from the owner of the new or higher building of money or security sufficient for the purpose—make the necessary alterations; or

(b) at the election of the owner of the new or higher building—permit the making of the alterations by the owner of the new or higher building.

## **92. GREASE TRAP VENTILATION.**

(1) Unless otherwise approved by the Local Medical Authority or the Sewerage Engineer, an internal grease trap or external grease trap that—

- (a) is within 10m of any door, window or other opening into a building; and
- (b) is not fitted with an approved air-tight cover,

shall have independent provision made for inlet and outlet ventilation.

(2) A vent referred to in Subsection (1) shall be carried—

- (a) not less than 2m above any window, door or other opening into a building within a distance of 10m from the vent; and
- (b) at least 600mm above the eaves or coping,

or to such additional height as is necessary to effectively prevent the escape of foul air into any building in the vicinity.

(3) There shall be a difference in height of at least 2m between the tops of the inlet and outlet vents.

(4) The size of the vents shall be in accordance with the requirements for main vents in Section 95(2)—

- (a) the diameter of the waste pipe being taken as that of the outlet from the grease trap; and
- (b) the number of fixture units being taken as equivalent to the number represented by the sinks served by the grease trap.

## **93. FIXTURE UNITS.**

(1) In this section and in Schedule 4, one fixture unit denotes a rate of discharge equal to 30l/min.

(2) For the purpose of determining the size of a drain, waste, soil or vent pipe, unless otherwise ordered by the Local Medical Authority or an inspector, the equivalent fixture units set out in Schedule 4 shall be adopted.

(3) For fixtures other than fixtures referred to in Schedule 4, the equivalent fixture units to be adopted shall be determined by the Sewerage Engineer.

(4) Cleaners' sinks and floor wastes that are not regularly in use during the period of maximum use of other fixtures need not be included in determining the number of fixture units to be provided for.

## **94. SIZES OF SOIL, WASTE AND DRAIN PIPES.**

(1) Subject to Subsection (2), the sizes of soil, waste and combined waste pipes shall not be less than the sizes determined, on the basis of the total number of fixture units drained or likely to be drained, in accordance with Schedule 5.

(2) Notwithstanding Subsection (1)–

- (a) waste, combined and soil pipes shall not be diminished in the direction of flow; and
- (b) the diameter of a trap, waste, combined waste or soil pipe receiving the discharge from a fixture shall not be less than the nominal outlet diameter of the fixture, and a soil pipe shall not be less than 80mm in diameter; and
- (c) more than two closet pans shall not discharge into any 80mm graded soil pipe; and
- (d) where 45° fittings are used throughout for connections to a vertical stack, the permissible maximum number of fixture units for the stack may be increased by 50%; and
- (e) more than 50% of the total permissible number of fixture units for a vertical stack shall not be connected to the stack in any 2.4m length of the stack; and
- (f) soil, combined waste and waste pipes shall be as direct and free from bends as practicable, but where bends are unavoidable approved provision shall be made, if necessary, to safeguard fixtures connected immediately above or below the bends.

(3) For the purposes of this section and of Schedule 5, an offset in a vertical stack may be deemed to be vertical, if the length of the offset does not exceed 1.5m measured horizontally.

## **95. SIZES OF VENTS.**

(1) For the purposes of this section, the length of a vent shall be measured as follows:–

- (a) the length of a main vent shall be taken as the height of the building, in storeys, above the floor on which the lowest fixtures served by the vent are situated; and
- (b) the length of a branch vent shall be taken as the height of the building, in storeys, above the floor on which the lowest fixtures served by the vent are situated, plus an additional storey for each 3,600mm, or part of 3,600mm, in the length of the branch vent, measured horizontally from the main vent to the fixture in question.

(2) Subject to Subsection (3), the diameters of main and branch vents shall be not less than the sizes determined, in accordance with Schedule 6, from–

- (a) the diameter of the soil, waste or combined waste pipe or stack to be vented; and
- (b) the total number of fixture units served by the main vent or by the part of the branch vent under consideration; and
- (c) the length of the vent.

(3) Notwithstanding Subsection (2)–

- (a) a vent shall not be less than 32mm in diameter; and
- (b) a main or branch vent shall not have a diameter less than 50% of that of the soil, combined waste or waste pipe that it serves; and
- (c) for a 50mm and 65mm waste pipe the main or branch vent shall have a diameter of not less than 40mm; and
- (d) a branch vent need not be larger in diameter than the soil, combined waste or waste pipe that it serves.

(4) The diameter of an individual anti-siphonage vent shall not be less than the diameter determined from the diameter of the fixture trap served, in accordance with the following table:–

Diameter of fixture trap.	Minimum permissible size of anti-siphonage vent.	Diameter of fixture trap.	Minimum permissible size of anti-siphonage vent.
mm	mm	mm	mm
32	32	65	50
40	32	80	50
50	40	100	50

#### **96. PROVISION OF WASTE PIPES.**

Separate waste pipes shall be provided for–

- (a) dirty water from baths, sinks, lavatory basins and wash troughs, and other water containing a small proportion of soap and dirt; and
- (b) greasy water–
  - (i) from kitchen and scullery sinks or other fixtures; and
  - (ii) where grease traps are required by this Regulation or ordered by the Local Medical Authority or an inspector.

#### **97. PROVISION OF SOIL PIPES.**

A soil pipe shall be provided for–

- (a) soil water from a closet; and
- (b) other water containing faecal matter; and
- (c) urinal water from a slop sink or urinal; and
- (d) where ordered by the Local Medical Authority or an inspector–for discharges from an operating theatre or morgue,

and such water shall not be discharged into a waste pipe.

#### **98. COMBINED PIPE SYSTEMS.**

The Sewerage Engineer may, if he thinks fit, approve the adoption of the combined pipe system for plumbing installations, subject–

- (a) to an interceptor trap or a boundary trap being provided in the house drain complete with induct vent on the drain side of the trap in all buildings with ground-floor fittings; and
- (b) to such other conditions as he thinks necessary in a particular case.

#### **99. CONNECTIONS TO DRAINS.**

(1) A waste pipe shall discharge under the grating of a yard gully or into a disconnector trap.

(2) A soil pipe, including a soil pipe connected to a urinal or a slop sink, shall be connected direct to a drain.

(3) A metallic waste pipe shall not be laid in the ground, whether inside or outside a building, without the approval of the Sewerage Engineer.

#### **100. FLASHINGS, ETC.**

(1) Unless otherwise ordered by the Local Medical Authority or an inspector—

- (a) a trough, sink or other fixture that is placed less than 80mm; and
- (b) a bath that is placed less than 150mm,

from a wall (other than a wall provided with wall skirtings as part of the fixture) shall be flashed with—

- (c) 1.6mm thick lead; or
- (d) 0.6mm thick copper, bronze, brass, nickel-silver or monel metal; or
- (e) other approved material,

except that galvanized sheet iron may be used for a fixture other than a sink.

(2) Flashing referred to in Subsection (1) shall be—

- (a) turned up the wall at least 100mm; or
- (b) tucked 25mm into a joint and cemented water-tight,

except where the wall is tiled when the flashing shall be carried up at least 6mm behind the tiles.

(3) A bath or other fixture having a turned-up flange, for use against a tiled wall instead of sheet metal flashing, shall be properly supported to prevent settlement, and the flange shall lap at least 6mm behind the tiles.

(4) In a case to which Subsection (3) applies—

- (a) the tiles shall be brought hard down on to the surface of the fixture; and
- (b) wall surfaces adjacent to all fittings shall be impervious to water.

(5) A flashing shall—

- (a) be properly secured and made water-tight; and
- (b) be bedded in red or white lead for a width of not less than 25mm along the edge nearer the fixture.

#### **101. FIXTURES, ETC., AGAINST WALLS.**

(1) Unless otherwise ordered or approved by the Sewerage Engineer—

- (a) a sink, tub or similar fixture situated in premises, other than a private house, where food for human consumption is prepared, manufactured or stored for sale; and
- (b) a draining board, slab or plate used in connection with any such fixture,

shall not abut against a wall.

(2) A sink, tub or other fixture, and a draining board, slab or plate, referred to in Subsection (1) shall have or leave a clear space of not less than 75mm between the fixture and a wall surface or obstruction.

#### **102. INTERNAL COCKS.**

A cock delivering water shall not be fixed internally unless—

- (a) a sink, lavatory, basin or other approved fixture; or
- (b) a properly drained impervious floor,

is provided underneath.

#### **103. PIPES PASSING THROUGH ROOFS.**

Where a vent, waste or soil pipe passes through a roof, a suitable lead collar or flashing out of 1.6mm thick lead shall be soldered or otherwise fixed to the pipe and the roof in such a manner that the roof is perfectly water-tight.

#### **104. LOCATION OF SOIL AND WASTE PIPES.**

A line of soil or waste pipe shall be as direct as possible.

#### **105. MATERIALS FOR SOIL AND WASTE PIPES.**

- (1) Material other than cast-iron, lead, copper or brass shall not be used for a soil pipe.
- (2) Material other than wrought-iron, cast-iron, lead, brass, copper, stoneware or other ceramic ware, or in the case of acid wastes other materials approved by the Sewerage Engineer, shall not be used for a waste pipe.

#### **106. LEAD SOIL AND WASTE PIPES.**

The minimum permissible thickness of lead for soil pipes is 2.8mm, and for waste pipes 2.4mm.

#### **107. GALVANIZED STEEL PIPES.**

Notwithstanding anything in this Regulation, galvanized steel pipe conforming with Australian Standard Specification B.105/1960 being medium class for sanitary plumbing and heavy class for water supply plumbing, may be used instead of wrought-iron pipe.

#### **108. CAST-IRON PIPES.**

- (1) A cast-iron pipe shall be sound, free from holes and cracks, and coated with approved bituminous composition or lined with glass enamel or other material to the approval of the Sewerage Engineer.
- (2) Where laid in the ground, a cast-iron pipe and its fittings shall conform to British Standard Specification 1211/1958 Class B.

(3) A cast-iron pipe for use in situations other than those referred to in Subsections (1) and (2) shall have a minimum thickness of 5mm, measured without the enamel or other lining, and its fittings shall correspond with it in weight and quality.

(4) A junction in a pipe referred to in Subsection (3) shall be curved, and a right-angled junction shall not be made.

#### **109. COPPER AND BRASS PIPES.**

(1) A copper or brass waste pipe or inside vent pipe shall be a seamless solid drawn tube and—

(a) if made of brass—shall be not less than 1.6mm thick; or

(b) if made of copper—shall conform to Australian Standard Specification B.158/1961,

and shall, where ordered, by the Local Medical Authority or an inspector, be protected from external injury.

(2) A sheet copper vent pipe for use on outside work only shall be not less than 0.6mm thick, made with grooved seams.

#### **110. USE OF LEAD PIPES.**

A lead pipe shall not be used where it is liable to damage.

#### **111. SUPPORTING OF LEAD PIPES.**

(1) A lead pipe shall be supported by—

(a) cast lead tacks wiped on to the pipe; or

(b) other approved fastenings.

(2) The fastenings shall be arranged as nearly as possible as follows:—

<i>Type of pipe.</i>	<i>Centres.</i>
100mm vertical lead pipe	750mm
100mm inclined lead pipe	600mm
Less than 100mm vertical pipe	900mm
Less than 100mm inclined pipe	675mm

(3) The dimensions of the tacks shall be as follows:—

<i>Diameter of pipe.</i>	<i>Tacks.</i>
100mm	200mm x 6mm
80mm	150mm x 5mm
50mm	100mm x 3mm

40mm

75mm x 3mm.

## **112. MINIMUM PERMISSIBLE GRADIENTS FOR SOIL AND WASTE PIPES.**

Except where the Sewerage Engineer approves the use of flatter gradients, the minimum gradient to be adopted for soil and waste pipes is–

<i>Diameter of pipe.</i>	<i>Minimum gradient.</i>
32mm	1 in 12.5, or 8.00%
40mm	1 in 15, or 6.76%
50mm	1 in 20, or 5.00%
80mm	1 in 30, or 3.33%
100mm	1 in 40, or 2.50%
150mm	1 in 60, or 1.66%.

## **113. JUNCTIONS.**

Where a waste or soil stack is branched into a graded waste, soil or drain pipe–

- (a) the branch fitting shall have an angle of not less than 45° to the graded pipe; and
- (b) the length of the branch of the fitting shall be such that the vertical projection of the attached stack is wholly outside the area of the junction with the graded pipe.

## **114. SEALING OF PIPES.**

(1) When a fixture is demolished, the soil, waste, vent and water supply pipes to the fixture shall be removed, or if they are allowed by the Sewerage Engineer to remain the ends of the pipes shall be sealed with water-tight imperishable materials.

(2) Wrought-iron pipe may be sealed with a screwed plug, cast-iron pipe may have a cast-iron plug caulked in with lead, lead pipe may have the end securely closed with a wiped joint, and stoneware pipe may have a stoneware disk cemented in.

## **115. SHEET METAL BENDS AND OFFSETS.**

(1) A sheet metal bend or offset for a flush or vent pipe shall be bent or pressed.

(2) Mitred elbows shall not be used.

## **116. CONCEALMENT OF PIPES, ETC.**

(1) Except where passing through a wall, partition or floor, a soil, waste or main vent pipe or trap shall be reasonably accessible at all times for convenience of inspection and repair.

(2) In a hospital or a similar institution, a soil, waste or main vent pipe shall, where practicable–

- (a) be fixed on the outside of an external wall or in a pipe duct having a minimum width of 600mm and a minimum area of 1m<sup>2</sup> (measured clear of all pipes or other obstructions); and
- (b) be so arranged as to facilitate inspection and maintenance at all times,

and the pipe duct shall be provided with access doors so placed as to permit ready inspection of every straight line of pipe.

(3) If a soil, waste or main vent pipe in a building other than a hospital or a similar institution is concealed within a pipe duct or a recess in a wall, the pipe duct or recess shall—

(a) be provided with approved means of access and have a minimum width of not less than 600mm and a minimum area of 1m<sup>2</sup> (measured clear of all pipes or other obstructions); or

(b) have at least one of its sides—

(i) constructed of woodwork, brickwork in lime mortar, terra-cotta or gypsum blocks, plaster on expanded metal lathing or other approved material, so constructed and fixed as to be capable of being removed independently of, and without damage to, any other part of the structure; and

(ii) provided with inspection openings placed so as to allow ready inspection and maintenance of every straight line of pipe.

(4) A branch or anti-siphonage vent pipe may be—

(a) concealed in a hollow wall; or

(b) built in lime mortar in a wall-chase,

if it is made of—

(c) cast-iron, wrought-iron or steel; or

(d) brass, being not less than 2.5mm thick when screwed fittings are used; or

(e) brass, being not less than 1.6mm thick when—

(i) compression fittings are used, with fittings to correspond; or

(ii) joints are brazed; or

(f) copper conforming to Australian Standard Specification B.158/1961.

(5) Unless approved by the Sewerage Engineer, a junction shall not be built into a wall.

(6) An inspection or access opening to a concealed pipe shall—

(a) be finished throughout with smooth surfaces; and

(b) be of such size and shape as to permit the entrance of cleaning tools, as required, to the pipe.

(7) For the purposes of this section, a straight line of soil, waste or main vent pipe shall be taken to include any offset or deviation from the straight line of—

(a) not more than 45°; and

(b) not more than 900mm in length.

#### **117. CONCEALED STANDING WASTES.**

A person must not have concealed standing wastes on any property.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

#### **118. PAINTING.**

Painting of any portion of the plumbing work shall not be carried out until the work has been inspected and approved.

#### **119. STONEWARE, CEMENT, CONCRETE AND CAST-IRON PIPE.**

Joints of stoneware, cement, concrete or cast-iron pipes shall conform with Section 61 or 62 as the case requires.

#### **120. LEAD PIPE.**

Joints of lead pipes, and between lead pipes and brass unions, ferrules and other corrosion-resistant metallic fittings, shall be—

- (a) plumbers' wiped joints; or
- (b) made by fittings approved by the Local Medical Authority or the Sewerage Engineer for the purpose.

#### **121. WROUGHT-IRON PIPE.**

(1) The screwed ends and sockets of each size of wrought-iron or wrought-steel pipe shall be so formed, and the threads so cut, that the ends of the pipe butt against each other when screwed home in the sockets.

(2) Bends, junctions and similar fittings shall be similarly formed and screwed, so that when the pipe ends are screwed home the bore is continuously uniform and without breaks or pockets.

(3) The burr shall be neatly filed off on the inner edge of all pipe ends.

(4) Screwed joints shall be made with approved jointing material.

(5) British Standard pipe threads shall be used.

#### **122. WROUGHT-IRON PIPE TO LEAD PIPE.**

Joints between wrought-iron and lead pipes shall be made by brass unions screwed to iron and wiped to lead.

#### **123. BRASS OR COPPER PIPE.**

Joints of brass or copper pipes shall be made—

- (a) by brazing to the satisfaction of the Sewerage Engineer; or
- (b) in accordance with the Australian Standard Specification B.36, "Compression Joints and Copper Alloy Screwed Fittings for Standard Copper Tubes"; or
- (c) by other approved means.

#### **124. LEAD PIPE TO CAST-IRON PIPE, ETC.**

The connection of lead pipe or a lead trap to cast-iron pipe shall be made by brass ferrules lined with and connected to—

- (a) the lead pipe or trap, by means of a wiped joint; and
- (b) the cast-iron pipe, by inserting the ferrule in the socket of the cast-iron pipe and making the joint in the same way as in cast-iron pipe.

#### **125. SHEET IRON PIPE TO CAST-IRON PIPE.**

Connections of galvanized sheet iron pipe to cast-iron pipe shall be made with molten lead, lightly but tightly caulked into the cast-iron socket.

#### **126. SHEET IRON PIPE TO WROUGHT-IRON PIPE, ETC.**

Galvanized sheet iron pipe or sheet steel pipe shall be connected to wrought-iron or steel pipe by means of—

- (a) brass unions or sleeves soldered to the sheet iron pipe and screwed to the wrought-iron pipe; or
- (b) wrought-iron sockets screwed to the wrought-iron pipe, into which the sheet iron pipe is lightly but tightly caulked with molten lead.

#### **127. SHEET IRON PIPE TO LEAD PIPE.**

Connections of sheet iron pipe to lead pipe shall be made by—

- (a) brass sleeves wiped to the lead pipe and soldered to the sheet iron pipe; or
- (b) cast lead collars wiped to the lead pipe, into which the sheet iron pipe is caulked as ordered by the Local Medical Authority or an inspector, or soldered and jacketed.

#### **128. LEAD PIPE TO SALT GLAZED WARE PIPE.**

Connections of lead pipe to salt glazed ware pipe shall be made by means of a mortar joint as prescribed by Section 61 for joining salt glazed ware pipes, but the portion of the lead pipe that is covered by the joint compound shall first be coated with an approved bituminous compound.

#### **129. CONCRETE OR STONEWARE TRAPS TO LEAD PIPE.**

The connection of a concrete or stoneware trap to a lead pipe shall be by means of a cast lead or brass socket—

- (a) the joint being made with bitumen or other approved material; and
- (b) the lead pipe being connected to the tail end of the brass or lead socket by a plumber's wiped joint.

#### **130. CONNECTION OF CLOSET PAN TRAPS TO SOIL OR DRAIN PIPES.**

(1) Connection of a closet pan trap to a soil or drain pipe shall be made—

- (a) by means of a bituminous jointing material, consisting of a mixture of approved bitumen and finely graded inert mineral filler in equal proportions, filled in solidly into the socket of

the soil or drain pipe and neatly splayed off; or  
(b) by some other approved method.

(2) In the case of a lead soil pipe, a cast lead or brass socket shall be used, connected to the lead pipe by means of a wiped joint.

### **131. CONNECTION OF CISTERN FLUSH PIPES TO CLOSET PANS.**

(1) The flush pipe from a cistern shall be connected to the water-closet pan—

(a) by means of a lead cap piece of lead not less than 1.6mm thick, packed with red lead or other approved material; or

(b) by some other approved method.

(2) The cap piece shall be jointed—

(a) to galvanized sheet iron, copper, brass or drawn steel pipe by means of a soldered joint; and

(b) to lead flush pipe by means of a wiped or soldered joint.

(3) The connection of the flush pipe to the cistern shall be—

(a) by means of a brass union, wiped to lead pipe or soldered to sheet iron pipe; or

(b) by some other approved method.

(4) Copper or brass pipe shall be connected to the cistern—

(a) by means of a brass ring, with nut, brazed to the pipe; or

(b) by some other approved method.

### **132. CONNECTION OF VENT PIPES TO CLOSET PANS.**

(1) A vent pipe shall be connected to the vent horn of the water-closet trap—

(a) by a lead cap piece with red lead packing; or

(b) by some other approved method.

(2) The cap piece shall be jointed—

(a) to copper or brass pipe by means of a soldered joint; and

(b) to lead pipe by means of a soldered or wiped joint.

### **133. CONNECTION OF OUTLET FITTINGS TO FIXTURES.**

(1) Connections between outlet fittings and baths, sinks, basins and other fixtures—

(a) shall be made with locknuts when the fixtures are constructed of cast-iron, plate iron, ceramic ware or concrete; and

(b) may be soldered when the fixtures are made of sheet metal lighter than 0.9mm thick.

(2) The outlet fitting shall be connected to the waste pipe by means of a union.

### **134. CONNECTION OF WASTE PIPES TO TROUGHS.**

(1) Connections of waste pipes to wash troughs shall be made in accordance with this section.

(2) Cement troughs, unless otherwise approved by the Local Medical Authority or the Sewerage Engineer, shall have cast-in outlets.

(3) Sheet metal troughs shall be connected to the waste pipes as prescribed by Section 133.

(4) For wooden troughs lead, copper or brass waste pipes shall—

(a) be connected as prescribed by Section 133; or

(b) have flanges connected to the waste pipes and fastened to the undersides of the troughs with copper tacks,

after which the waste pipe shall be turned over inside the trough and the plug casting—

(c) bedded over it with red lead putty; and

(d) screwed to the trough with brass wood-screws.

(5) Where wrought-iron or other screwed pipes are used, the plug shall be connected to the trough by means of a locknut instead of a flange.

### **135. TRAPPING OF FIXTURES.**

(1) A fixture shall be effectively trapped, unless otherwise permitted in writing by the Sewerage Engineer.

(2) Separate traps shall be provided for each fixture, except that lavatory basins or sinks may be connected in pairs if—

(a) they are situated in detached outbuildings, open verandahs or sanitary blocks well ventilated to the satisfaction of the Sewerage Engineer; and

(b) the length of the waste pipe between the two fixtures does not exceed 900mm.

### **136. POSITION OF TRAPS.**

A trap provided for a fixture shall—

(a) be placed as near the fixture as possible; and

(b) not be more than 600mm from its fixture, except—

(i) as provided by Section 135; or

(ii) with the special permission of the Sewerage Engineer.

### **137. MATERIALS FOR TRAPS.**

(1) A trap for a fixture other than a water-closet, slop sink or urinal shall be of copper, brass or drawn lead.

(2) Traps receiving chemical wastes shall be of ceramic ware or stoneware.

### **138. DEPTH OF WATER SEAL.**

A trap provided for a fixture shall have a water seal of not less than 50mm.

### **139. FORM OF TRAP.**

(1) The P form of trap shall be used in preference to the S form where in the opinion of the Sewerage Engineer it is equally suitable for the situation.

(2) Re-sealing traps may be installed—

(a) with the approval of the Sewerage Engineer; and

(b) in a manner specified in the approval.

### **140. LEAD TRAPS.**

A lead trap shall be of the applicable weight specified in Section 106 for a lead pipe of the same class.

### **141. GRATINGS.**

In corrodible outlets, gratings of approved design and material in accordance with Australian Standard Specification B.38, “Metal Alloy Sanitary Fittings” shall be provided for all urinals, slop sinks and fixtures discharging into waste pipes, but if there is no Australian Standard Specification for a fixture the grating shall be as approved by the Sewerage Engineer.

### **142. PROVISION FOR INSPECTION AND CLEANING.**

(1) Inspection and cleaning eyes shall be provided in such positions on a soil and waste pipe as to provide access for proper inspection and cleaning of the entire length of pipe.

(2) A trap for a sanitary fixture (other than a water-closet or slop sink) shall be provided, for cleaning purposes, with an approved screwed brass plug fixed under the water-line of the trap.

### **143. INSPECTION OPENINGS ON SOIL PIPES.**

Where the vertical stack of a soil pipe provides for a closet 1,200mm or more above ground level, measured from the floor level of the water-closet to ground level at the foot of the stack, an inspection opening, 225mm by 100mm, having a cover fixed to a flange with non-corrodible bolts or studs, shall be provided near the foot of the stack in such position as is ordered by the Local Medical Authority or an inspector.

### **144. WASHERS FOR INSPECTION AND CLEANING OPENINGS.**

Inspection or cleaning eyes on metal soil or waste pipes shall be jointed with insertions of leather washers, or in such other approved manner as to seal the joints effectively against the egress of gas or water.

### **145. WATER-CLOSETS, URINALS AND HAND BASINS.**

(1) In this section—

**“licensed”** means licensed under the *Liquor (Licensing) Act 1963*;

**“resident”** includes an employee of a resident employed on the property, whether or not living on the property.

(2) The owner of any property shall provide on the property water-closets, urinals and hand basins in accordance with the following scale:—

(a) subject to Paragraph (b), for each house, flat or other form of tenement—one closet; and

(b) subject to Subsection (3), for a residential building used, or intended for use, as an apartment-house, boarding-house, boarding-school, hostel, lodging-house, motel, residential club or hotel or licensed hotel—

(i) where the number of resident male persons—

(A) does not exceed 100—one closet for every 20; or

(B) exceeds 100—five closets and one additional closet for every additional 25 above 100; and

(ii) where the number of resident female persons—

(A) does not exceed 100—one closet for every 20; or

(B) exceeds 100—five closets and one additional closet for every additional 25 above 100; and

(c) in addition to the requirements of Paragraph (b) and Subsection (3), such number of separate water-closets, urinals and hand basins for the public frequenting the bars of a licensed club, hotel or motel, or other licensed premises, as is thought necessary by the Local Medical Authority, in the interests of public health and convenience, generally or in a particular case; and

(d) subject to Subsection (4), for an office building (including a bank, broadcasting studio or doctor’s or dentist’s surgery), a shop (including a cafe, restaurant, retail store, espresso bar or service station), a warehouse (including a fire station, hangar, car park, show-room or display room), a factory or a day school—

(i) where the number of male persons—

(A) does not exceed 100—one closet for every 25; or

(B) exceeds 100—four closets and one additional closet for every additional 50 above 100; and

(ii) where the number of female persons—

(A) does not exceed 100—one closet for every 25; or

(B) exceeds 100—four closets and one additional closet for every additional 50 above 100; and

(e) for a church—one closet for male persons and one closet for female persons; and

(f) for any other public building used, or intended to be used, for a recreational or other social purpose not specified in this subsection—in accordance with Schedule 7, and in addition such number of separate water-closets, urinals and hand basins for employees and performers as is thought necessary by the Local Medical Authority, in the interests of public health and convenience, in any particular case; and

(g) for a building not otherwise specified in this subsection—such number of water-closets, urinals and hand basins as is thought necessary by the Local Medical Authority, in the interests of public health or convenience, generally or in a particular case; and  
(h) where the Local Medical Authority thinks it necessary in the interests of public health or convenience—such additional number of water-closets, urinals and hand basins as is ordered by the Local Medical Authority, generally or in a particular case; and  
(i) for male persons employed in the erection of buildings—such number of temporary water-closets, urinals and hand basins as is ordered by the Local Medical Authority, generally or in a particular case.

(3) In a case to which Subsection (2)(b) applies—

(a) there shall be at least two water-closets; and  
(b) if the number of male persons exceeds 20, there shall be a urinal in the place of every second closet.

(4) In a case to which Subsection (2)(d) applies—

(a) if the number of male persons exceeds 25, there shall be a urinal in place of every second closet; and  
(b) if the number of persons does not exceed 10, there need be only one closet if—  
(i) the door is fitted, for the purpose of privacy, with a latch of an approved type; and  
(ii) the toilet-seat is of the “lift-up” type.

(5) A water-closet, urinal or hand basin that is required by this section to be provided on any property shall comply with the requirements of the *Building Act 1971*, and the regulations made under that Act, with respect to lighting, ventilation, airlocks and standards of construction.

#### **146. FIXING OF CLOSET PANS.**

(1) A closet pan on a concrete floor or floor of tiles set in concrete shall be—

(a) securely bedded in concrete or cement mortar; and  
(b) fixed with brass screws to approved lead dowels set in the floor, or by some other approved method.

(2) Where a closet pan is fixed on a wooden floor—

(a) the floor shall be covered with lead or approved composition; and  
(b) the base of the pan shall be secured with brass screws to a raised block covered with lead or composition finishing 32mm above floor level; and  
(c) the block shall not extend beyond the base of the pan.

#### **147. CLOSET PANS.**

(1) A water-closet shall be furnished with a pan of non-absorbent material of such shape, capacity and construction as is approved by the Sewerage Engineer.

(2) A water-closet pan and its fittings shall be entirely open to inspection and without any enclosure.

(3) A vent horn shall be provided on a pan even if an anti-siphonage vent is not required, but if it is not used for a vent the vent horn shall be sealed with a lead disk, bituminous filler and a lead cap piece, or by some other approved method.

#### **148. “ASIATIC” TOILETS.**

Notwithstanding this Regulation, the Sewerage Engineer may approve the installation of the “Asiatic” type of closet pan in a water-closet.

#### **149. CLOSET PAN SEATS.**

(1) Where a seat is provided in a water-closet, it shall be—

- (a) of approved size, shape, construction and material; and
- (b) fitted with hinges and screws of non-corrosive metal.

(2) A one-piece seat constructed of wood shall be reinforced with two or more wood or brass slips let in flush on the underside.

(3) A multi-piece seat shall be glued and dowelled or bolted.

#### **150. FLUSHING APPARATUS.**

(1) Approved apparatus shall be provided for—

- (a) the effective application of water to the pan of the water-closet; and
- (b) the efficient flushing and cleansing of the pan; and
- (c) the effective removal of any solid or liquid matter deposited in the pan.

(2) Subject to Section 151, the flushing apparatus shall have a flushing capacity of 9l, plus or minus not more than 10%.

#### **151. FLUSHING CISTERNS.**

(1) A flushing cistern shall be fixed at such height as will effectively flush the pan, but, unless otherwise approved by the Sewerage Engineer, a cistern shall not be fixed at a height, measured from the top of the seat to the underside of the cistern, less than—

- (a) 1,500mm, where a 32mm flush pipe is used; or
- (b) 1,200mm, where a 40mm flush pipe is used,

and there shall be a space of at least 225mm between the top of the cistern and the ceiling of the closet.

(2) A low-level flushing cistern may be installed if—

- (a) the flush does not exceed 14l; and
- (b) the suite has been passed by the Sewerage Engineer after testing it complete unit.

(3) A cistern shall be fixed—

- (a) on 40mm angle-iron bearers or approved iron brackets properly supported; or
- (b) if approved by the Sewerage Engineer, to a cistern board not less than 300mm deep and 32mm thick, fixed to the wall in an approved manner.

(4) The iron-work of a cistern shall be painted or galvanized to the approval of the Local Medical Authority or the Sewerage Engineer, and brackets shall be secured to the wall with 6mm bolts of the required length.

(5) A low-level cistern fitted with a flush pipe less than 65mm in internal diameter shall be placed so that the bottom of the cistern is not less than 200mm above the top of the pan.

(6) The water supply pipe to a cistern shall be adequate to fill the cistern at the rate of not less than 2l/min. when one other tap on the service is turned full on.

(7) A cistern shall have a separate stop tap, and an overflow of 18mm internal diameter.

### **152. FLUSH PIPES.**

(1) A flush pipe to a closet pan shall—

- (a) be of brass, copper, lead 2.4mm thick, seamless galvanized steel tube not less than 1.2mm thick or other approved material; and
- (b) have a minimum diameter of 32mm.

(2) Where the closet pan is provided with a hinged seat, the flush pipe shall be fitted with an approved buffer and buffer block.

### **153. FLUSHING APPARATUS OTHER THAN CISTERNS.**

(1) A flushing valve used in connection with a flushing apparatus other than a cistern shall be—

- (a) of a type tested and approved by the Sewerage Engineer; and
- (b) provided with a fullway stop-cock fixed in such a position as to be readily accessible.

(2) A flushing apparatus other than a cistern shall be fed only from a storage tank that is supplied from the main through a ball-cock.

### **154. STORAGE TANKS.**

(1) Where ordered by the Sewerage Engineer, internal water-closets shall be provided with storage tanks capable of holding the equivalent of two flushes of water for each occupant of the building, with a minimum of 20 flushes per closet for all buildings except private residences, which shall have a minimum capacity of 10 flushes.

(2) Unless otherwise approved by the Sewerage Engineer, the storage tanks shall be placed—

- (a) in the water-closet apartment; or
- (b) on the roof, over a flat or gutter; or
- (c) subject to Subsection (3), in an accessible place between the ceiling and the roof.

(3) In a case referred to in Subsection (2)(c), a safe of galvanized iron, lead or other approved impervious material, with at least 40mm overflow, shall be fixed under the storage tank.

(4) A storage tank shall be provided with an approved cover.

(5) The head of water measured vertically from the top water level of the storage tank to the level of the point of discharge into a cistern shall not be less than 2m, but in the case of discharge into a flush valve the head shall be such that the flush valve operates to the tests required by the Sewerage Engineer.

(6) The water supply pipes from storage tanks to cisterns shall be not less than the following sizes:—

1-2 cisterns	20mm diameter
3-6 cisterns	25mm diameter
7-25 cisterns	40mm diameter
26-50 cisterns	50mm diameter.

(7) Where the head of water from the storage tank to the flushing cistern is less than 6m, a low pressure ball valve shall be installed.

(8) The water supply pipes from storage tanks to the flush valves shall not be less than the sizes as determined from—

(a) the available head of water measured vertically in storeys from the level of the first flush valve served by the portion of supply pipe under consideration to the normal water level of the storage tank; and

(b) the total number of flush valves served by the portion of the supply pipe under consideration,

in accordance with Schedule 8.

(9) Where the capacity of a tank exceeds 250l, it shall be fitted with a fullway valve on the main outlet.

(10) Where ordered by the Sewerage Engineer, storage tanks in accordance with this section shall be provided for all external water-closets at hospitals, asylums and similar institutions.

### **155. VENTING OF CLOSET PANS, SLOP HOPPERS AND URINALS.**

(1) Subject to Subsection (2), unless otherwise ordered or approved by the Sewerage Engineer a closet pan, slop hopper or urinal on an upstairs floor shall discharge into a soil vent pipe.

(2) Where there are no other fixtures connected to the soil stack, a pan may be ventilated by an anti-siphonage vent only, as prescribed by Sections 81 and 95, and discharge into a soil pipe without extension as a vent pipe.

(3) Subject to Subsection (4), an external closet pan in which siphonage occurs, and an internal closet pan shall be ventilated by an anti-siphonage vent, as prescribed by Section 95, sufficiently close to prevent siphonage and not more than 450mm from the trap.

(4) Where there is only one closet pan on the branch and the pan is not more than 1,200mm from a soil vent pipe (measured horizontally between the centre of the soil vent pipe and the centre of the pan), the anti-siphonage vent may be omitted.

#### **156. GROUPED EXTERNAL CLOSETS.**

Where there are more than three external wall closet pans grouped on the ground floor or in the yard of any premises—

(a) the drain or soil pipe shall be separately ventilated for every group or part of a group of three pans; and

(b) the size of the vent shall be as prescribed by Section 95.

#### **157. CONSTRUCTION OF URINALS.**

(1) Unless otherwise approved by the Sewerage Engineer, round-backed stall-type urinals of approved impervious material and approved construction shall be used for internal urinals.

(2) Soil pipes shall be—

(a) of glazed earthenware, glass enamelled or coated cast-iron, lead, or other approved material; and

(b) kept as short and free from bends as possible; and

(c) provided with inspection openings as ordered by the Local Medical Authority or an inspector.

(3) Urinals shall be provided—

(a) with approved flushing apparatus; and

(b) with a hose tap in a suitable position for hosing down.

(4) The floor in front of a urinal shall be—

(a) covered with approved impervious material for a width of not less than—

(i) 600mm; or

(ii) if it is raised above floor level of the urinal apartment—450mm; and

(b) graded to drain to the urinal.

(5) For the purposes of this section, the following materials are impervious:—

(a) for urinals—glazed fire-clay or stainless steel; and

(b) for floors in front of urinals—

(i) glazed tiles set in cement mortar, composed of equal parts of cement and sand; or

(ii) concrete 150mm thick rendered with 12mm thick cement mortar, slate or marble.

#### **158. EXTERNAL URINALS.**

(1) With the approval of the Sewerage Engineer, external urinals shall be constructed in an approved position of approved slabs of slate or other impervious material and channels.

(2) All fastenings shall be brass and channels, where let into the floor, shall be of glazed earthenware 125mm wide of semi-circular section and graded with an even fall to the outlet of 1:20.

(3) An outlet shall be provided for each 3m or part of 3m of channel.

(4) The floor in front of the urinal shall be raised and constructed as prescribed in Section 157, and subject to this section the urinal shall comply with that section.

### **159. FLUSHING APPARATUS FOR URINALS.**

Unless an automatic flushing cistern is approved in writing by the Sewerage Engineer, a hand-operated cistern or other approved hand-operated apparatus shall be installed for a urinal.

### **160. FLUSHING CISTERNS.**

(1) The discharge from a cistern installed for a urinal shall, unless otherwise approved by the Sewerage Engineer, be equal to 4*l* for—

- (a) each urinal stall; or
- (b) every 600mm width of slab-back urinal,

but a cistern of a capacity of more than 14*l* shall not be used.

(2) Unless otherwise approved by the Sewerage Engineer, the height of a cistern shall be at least 2m from the floor to the bottom of the cistern with a clear space of at least 225mm above the top of the cistern, for access to the ball-cock.

(3) A urinal-flushing cistern shall be provided with a suitable cover and a separate stop tap.

### **161. FLUSH PIPES.**

(1) Flush pipes for urinals shall have a minimum diameter of 32mm, except that flush pipes for automatic flushing cisterns generally shall not exceed—

- (a) for a 4*l* cistern—20mm internal diameter; and
- (b) for a 9*l* cistern—25mm internal diameter; and
- (c) for a 14*l* cistern—32mm internal diameter.

(2) For a 20mm flush pipe one spreader only may be used, for a 25mm flush pipe two spreaders and for a 32mm flush pipe three spreaders may be used.

(3) Saddle or bridle pieces shall be of approved diameter where they are necessary, and pipe clips, bolts and screws used in fixing shall be of brass or copper.

(4) Where slab urinals are permitted, the distance between spreaders shall not exceed 600mm.

(5) Sparge pipes shall be perforated by drilling, and the perforations shall be—

- (a) 3mm in diameter and spaced at 40mm centre; or
- (b) as approved by the Sewerage Engineer.

#### **162. FLUSH VALVES FOR URINALS.**

Where flush valves are approved by the Sewerage Engineer, every urinal flush valve shall be supplied from a storage tank, as prescribed by Section 154.

#### **163. SLOP HOPPERS.**

(1) A slop hopper shall be—

- (a) made in one piece of approved impervious material; and
- (b) provided with approved flushing apparatus of 9l capacity as prescribed for water-closets.

(2) A slop hopper shall be placed and ventilated as prescribed for water-closets by Section 155.

(3) A bibcock shall be fixed directly over, and at least 450mm above, each slop hopper.

#### **164. WASH TROUGHS.**

(1) A wash trough shall be—

- (a) of approved pattern and material; and
- (b) securely fixed and graded to the outlet pipe; and
- (c) fitted with a brass strainer sunk to the level of the bottom of the trough.

(2) Unless otherwise approved by the Sewerage Engineer, a water tap shall be constructed over each trough.

(3) Unless otherwise approved in writing by the Sewerage Engineer, a wash trough—

- (a) shall be properly mounted on approved concrete or brick-in-cement pedestals; and
- (b) if mounted within 150mm of a wall, shall be bolted with galvanized hook bolts at least 10mm diameter to the wall.

#### **165. TROUGHS ABUTTING AGAINST BRICK WASH-COPPERS.**

Where the end of a wash trough abuts against the brickwork of a wash-copper, the space between the end of the trough and the brickwork shall be bridged with approved waterproof material and made watertight.

#### **166. STANDING OVERFLOW WASTES.**

Standing overflow wastes shall not be used in connection with a sink, bath, lavatory basin or shower compartment.

#### **167. FIXING OF SINKS, ETC.**

(1) A sink or approved combined sink and draining board shall be effectively supported, and the traps and waste pipes shall be left readily accessible for inspection and cleaning.

(2) A draining board may be of wood, stainless steel or other approved metal or composition.

(3) A wooden draining board attached to a sink—

(a) shall be constructed of suitable timber not less than 32mm thick after being properly fluted and graded into the sink; and

(b) shall be bedded on top of the sink with white lead putty; and

(c) shall not be stopped after fixing.

#### **168. GALVANIZED SHEET IRON BATHS.**

The bottom of a galvanized sheet iron bath shall be effectively supported on legs, and the bath shall not be enclosed.

#### **169. BATH TRAPS.**

Unless otherwise approved by the Sewerage Engineer, a bath trap fixed on the outside of a wall shall not be more than 900mm from the outlet of the bath.

#### **170. BATHS WITHOUT FLASHING.**

Where a pedestal bath is fixed and it is not desired to flash it, it shall be fixed at least 150mm clear of walls.

#### **171. SHOWER COMPARTMENTS.**

(1) The floor of a shower compartment shall be—

(a) graded to an approved 50mm diameter trapped outlet; and

(b) constructed of—

(i) not less than 100mm of concrete, trowelled smooth or covered with tiles set in cement mortar; or

(ii) timber covered with—

(A) enamelled cast-iron; or

(B) approved impervious non-corrosive sheet metal; or

(C) other approved material,

turned up at the edges and flashed as prescribed by Section 100; or

(iii) other approved impervious materials.

(2) The level of the grating on the outlet shall be—

- (a) at least 50mm below the level of the floor outside and adjoining the shower compartment;
- or
- (b) where a kerb is provided, 50mm below the level of the kerb.

(3) The walls of a shower compartment shall be—

- (a) finished with cement mortar rendered to a smooth surface; or
- (b) covered with tiles set in cement mortar; or
- (c) lined with approved non-corrosive material.

#### **172. SHOWERS OVER BATHS.**

A shower shall not be fixed over a bath unless—

- (a) the walls within a radius of 900mm of the shower are of an impervious nature and the floor is constructed of approved impervious material graded to a floor waste; or
- (b) the bath is provided with an approved shower shield attachment.

#### **173. VENTING OF LAVATORY BASINS.**

Where ordered by the Sewerage Engineer, a lavatory basin waste shall be provided with an anti-siphonage vent.

#### **174. VENTING OF SINKS DISCHARGING INTO GREASE TRAPS.**

A kitchen sink discharging into a grease trap shall be vented irrespective of the length of the waste.

#### **175. LAVATORY BASINS AND SINKS.**

- (1) A basin or sink shall be of an approved type, inspected and passed by the Sewerage Engineer.
- (2) If a basin or sink is provided with an overflow, it shall be of the weir type.
- (3) A basin bracket shall be bolted to the wall in an approved manner.

#### **176. TIP-UP BASINS.**

Tip-up lavatory basins shall not be used.

#### **177. GROUND FLOOR SHOWERS.**

Where a shower only is provided in a bathroom on a ground floor, a 100mm stoneware or concrete trap fitted with a brass grating shall be used for the drainage of the floor.

#### **178. SAFES.**

- (1) Unless the floor is constructed—
  - (a) of concrete not less than 100mm thick; or
  - (b) of other approved impervious material,

graded as ordered by the Local Medical Authority or an inspector, safes of lead or other approved impervious material shall be fitted under—

(c) a slop hopper or water-closet; and

(d) a bath or wash trough where, in the opinion of the Sewerage Engineer, there is a danger of damage or nuisance by its overflowing.

(2) A lead safe shall be laid with sheet lead not less than 2mm thick, and where the whole floor is not covered with lead the safe shall extend—

(a) for a pan or slop sink—300mm beyond the side and 375mm beyond the front of the fixture; and

(b) for a bath or wash trough—300mm beyond the end and 600mm beyond the front of the fixture.

(3) A safe shall extend back to the wall and 75mm up it, and the roll of the safe shall be 50mm wide and 18mm high and constructed to the approval of the Local Medical Authority or the Sewerage Engineer.

(4) Unless otherwise approved by the Sewerage Engineer, a safe—

(a) shall be drained by a separate 50mm diameter pipe provided at the inlet with a brass grating and at the outlet into the open air with a flap valve of brass or other approved metal; and

(b) shall not connect with a waste pipe, soil pipe, drain or sewer.

#### **179. CISTERN OVERFLOWS.**

(1) A cistern supplied with water shall have an overflow pipe of adequate size, discharging in a position where it does not cause damage but acts as a warning pipe.

(2) On a ground floor where a cistern is fixed over an impervious floor graded to drain outside the room, the overflow may discharge on to the floor if damage is not likely to arise from the discharge.

(3) Overflows may discharge into the open air above ground floor level only where the discharge will not cause any inconvenience or nuisance, and in all other cases the pipes shall be brought to the ground surface or be arranged to discharge where they will not prove a source of annoyance or inconvenience.

### **PART X. – EXISTING WORKS AND DEFECTIVE WORKS GENERALLY.**

#### **180. REGRADING OF EXISTING FLOORS UNDER FIXTURES.**

Where, in the opinion of the Sewerage Engineer, it is necessary, an existing floor under a fixture shall be regraded, and a proper waste pipe and, if ordered by the Local Medical Authority or an inspector, a flap valve fixed.

#### **181. EXISTING FIXTURES, FITTINGS, ETC.**

(1) An existing fixture, fitting or appliance not in accordance with this Regulation that—

- (a) the owner desires to retain unaltered and undisturbed; and
- (b) in the opinion of the Sewerage Engineer, will be inoffensive,

may, on the written request of the owner, remain until the Sewerage Engineer orders otherwise.

(2) Existing fixtures, fittings and appliances that, in the opinion of the Sewerage Engineer, are offensive shall be removed at once.

## **182. DEFECTIVE WORKS, ETC., GENERALLY.**

(1) Materials, pipes, bends, junctions, fittings, fixtures and apparatus found on inspection under this Regulation to be defective shall be removed and replaced by sound ones, and all defective joints shall be made tight.

(2) A drain, soil, waste or vent fitting or fixture that—

- (a) is laid, used or constructed otherwise than as prescribed by this Regulation; or
- (b) in the opinion of the Sewerage Engineer is, or has become, defective,

must, on written notice from the Local Medical Authority or the Sewerage Engineer to—

- (c) the owner or occupier of the property; or
- (d) in the case of joint drainage—the owners or occupiers of the several properties,

be removed, altered or repaired by the owner or occupier—

(e) as required by the Local Medical Authority or the Sewerage Engineer, as the case may be; and

(f) within the time fixed in the notice; and

(g) to the satisfaction and approval of the Sewerage Engineer.

## **183. RESPONSIBILITY OF OWNER OR OCCUPIER FOR DEFECTIVE WORK, ETC.**

(1) An owner or occupier who fails to comply with a notice given to him under Section 182(2) is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(2) In a case to which Subsection (1) applies, the Local Medical Authority or the Sewerage Engineer may, if he thinks fit—

- (a) remove, alter or repair the defective fitting, fixture or apparatus; and
- (b) charge the owner or occupier of the property with the cost incurred and proceed for recovery in the manner provided for by Section 201.

## **PART XI. – RIGHT OF ENTRY, ETC.**

### **184. INSPECTION OF PRIVATE PREMISES.**

The Sewerage Engineer, an inspector or any other authorized representative of the Local Medical Authority may inspect a drain, fixture, fitting, pipe, appliance, connection or other works connected with any such thing, and, for the purpose of inspection, he may at all reasonable times in the day-time—

- (a) enter on any property to, through or into which a drain or sewer has been laid; and
- (b) cause the ground to be opened wherever he thinks it necessary for the purpose,

doing as little damage as may be.

### **185. ENTRY FOR PURPOSES OF SURVEY, ETC.**

For the purposes of survey, design, house drainage or sewer reticulation, the Sewerage Engineer, an inspector or any other authorized representative of the Local Medical Authority may, at all times during normal working hours, enter privately owned lands, buildings or dwellings for the purpose of surveying, inspection of fittings and setting out of the works.

### **186. ENTRY FOR CONSTRUCTION.**

(1) After 30 days from the publication in the National Gazette of a notice under Section 4 declaring a sewerage district, the Sewerage Engineer, or a person authorized by the Sewerage Engineer for the purpose, may enter on private land within the sewerage district for the purpose of constructing a sewer and its appurtenances.

(2) Before commencing operations on any land, the Sewerage Engineer shall give written notice, personally or by post to the last-known address of the owner, that he proposes to commence operations on the land.

(3) The owner and occupier of the land on which sewerage operations are or are proposed to be commenced must give all assistance reasonably required by the Sewerage Engineer in providing necessary access of plant and materials during the progress of the works.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

(4) The Sewerage Engineer shall use all reasonable care and take reasonable precautions to reinstate the surface to compare with its condition before the commencement of operations.

### **187. MANHOLES IN PRIVATE PROPERTY.**

(1) The Sewerage Engineer may construct a manhole or manholes in privately owned land without liability for loss of value to the owner or occupier.

(2) A manhole shall finish 75mm above the surrounding ground, and the Sewerage Engineer may cause a section of the ground to be levelled for an area of 1.5m<sup>2</sup> at such a manhole.

(3) The owner or occupier shall not—

- (a) alter, or cause or permit to be altered, the level of the ground levelled under Subsection (2); or
- (b) regrade the ground to drain to the area,

without the prior approval of the Sewerage Engineer.

(4) Where an owner or occupier desires to alter the level of any ground levelled under Subsection (2), he shall approach the Sewerage Engineer and pay for any alteration in the level of the manhole cover required by the Sewerage Engineer.

(5) A building shall not be erected over a manhole, and a manhole shall not be enclosed in any yard or pen used for retaining birds or animals, without the prior written approval of the Sewerage Engineer.

## **PART XII. – RATES AND RATINGS.**

### **188. INTERPRETATION OF PART XII.**

In this Part—

“**owner**”, in a case where a person is in occupation of land on which there is a building the property of the State or of the Government of Australia by virtue of an agreement with the State or the Government of Australia, means that person;

“**sewerage rate**” means a sewerage rate fixed under Section 189.

### **189. FIXING OF SEWERAGE RATE.**

(1) The Minister may, by notice in the National Gazette, fix a sewerage rate for a sewered area for the 12 months commencing on 1 July in each year.

(2) A rate fixed under Subsection (1) is due and payable 14 days after publication of the relevant notice under that subsection.

(3) Where a sewerage rate has not been fixed under Subsection (1) for a period of 12 months, the rate last fixed (if any) is the sewerage rate for that period.

(4) The sewerage rate fixed under Subsection (1) may be—

- (a) a flat charge to be paid in respect of each allotment of land in the area; or
- (b) a special charge to be paid in respect of a property or class of property in the area; or
- (c) a charge not exceeding K0.10 for each K2.00 of the unimproved value of each allotment of land in the area.

### **190. RATEABLE LAND.**

(1) Subject to this Part, sewerage rates may be levied in respect of both occupied and vacant land that is or could be connected to a sewer.

(2) All land in a seweraged area (including State land) is rateable except—

- (a) commons, public parks and public reserves not held under lease or licence; and
- (b) cemeteries; and
- (c) the sites of public hospitals, benevolent institutions and buildings used exclusively for charitable purposes; and
- (d) the sites of churches and other buildings used exclusively for public worship; and
- (e) State land that is unoccupied and not leased; and
- (f) land held by the Government of Australia, whether occupied or not; and
- (g) customary land; and
- (h) native reserves.

#### **191. MINIMUM RATES.**

The minimum amount payable in respect of sewerage rates on any land is K2.00 per annum.

#### **192. PAYMENT OF RATES.**

- (1) An amount of sewerage rates due may be paid in a lump sum or by such instalments and on such terms and conditions as are agreed on between the Minister and the person from whom the amount is due.
- (2) An amount of sewerage rates due may be recovered by the State as a debt.
- (3) The Head of State, acting on advice, may in his absolute discretion, reduce or waive payment of any amount of sewerage rates.

#### **193. LIABILITY FOR RATES.**

- (1) The owner of any rateable land is liable for sewerage rates payable in respect of the land unless it is otherwise provided by arrangement with the Minister.
- (2) Sewerage rates constitute a first charge on the land.
- (3) Where land is rateable for a portion only of a rate year, the amount of the rates payable in respect of that portion is such amount as bears the same proportion to the amount of rates payable for the whole year as the portion of the year during which the land is rateable bears to a period of 12 months.
- (4) In Subsection (3), “rate year” means a period of 12 months referred to in Section 189.

#### **194. RATE NOTICES.**

Immediately after a sewerage rate has been struck, the Minister shall—

- (a) cause written particulars—
  - (i) of the rate payable in respect of the allotment; and
  - (ii) of the time allowed for payment and the consequences of failing to pay within that time,

to be delivered or sent by post to each occupier or owner who is liable to pay the rate; or

- (b) where there is no occupier of any land and the owner's address is unknown—  
(i) post the particulars referred to in Paragraph (a) in some conspicuous place on the allotment; and  
(ii) publish them in a newspaper circulating in the area.

#### **195. APPEALS.**

(1) Within one month of receipt of a rate notice under Section 194, a person may appeal to the nearest District Court against the amount of the rates in respect of his land.

(2) An appeal under Subsection (1) shall not be entertained unless seven days' written notice has been given to the Minister.

(3) The District Court—

- (a) shall hear and determine the objection; and  
(b) may amend the amount of the rate.

(4) The decision of a District Court on an appeal under this section is final.

#### **196. PENALTY FOR NON-PAYMENT.**

When an amount of sewerage rates due and payable remains unpaid, a penalty at the rate of 5% per annum shall be added to the amount from the time when it became due and payable until payment is received.

#### **197. LEVY AND DISTRESS.**

(1) Where any amount of sewerage rates, and any amount of penalty under Section 196, are not paid at the end of six months after the date on which the rates first became payable, the Minister may cause a notice to be published in the National Gazette or in a newspaper circulating in the country specifying the land, the owner and the amount of rates and penalty due.

(2) If the rates and penalty are not paid, or a satisfactory arrangement regarding payment is not entered into with the Minister, within 30 days of publication of a notice under Subsection (1)—

- (a) the amount of the rates and penalty; and  
(b) the costs and expenses of the distress and sale,

may be recovered by distress and sale of any goods and chattels belonging to the person liable to pay the rates that are found on the land in respect of which the rates are due.

(3) The Minister may issue a warrant for the purpose of a distress and sale under Subsection (2).

(4) The proceeds of the sale of any goods and chattels distrained under this section shall be applied in payment of—

- (a) the costs and expenses of the distress and sale; and
- (b) the amount of the rates and the penalty,

and the balance (if any) shall be paid to the owner of the goods.

(5) For the purposes of Subsection (4), the costs and expenses of the distress and sale shall not exceed—

- (a) for each warrant—K0.25; and
- (b) for any man in possession—K2.00 for each day or part of a day during which he is in possession; and
- (c) for inventory, commission on sale and delivery of goods—5 % of the proceeds of the sale.

#### **198. LIST OF OVERDUE RATES.**

Where the sewerage rates due in respect of any rateable land have been in arrear for a period of one year, the Minister may—

- (a) give notice by registered letter addressed to the owner at his last-known place of abode that the rates are in arrear; and
- (b) at any time after giving the notice, publish in the National Gazette a notice setting out the land in respect of which the rates are in arrear.

#### **199. POWER TO TAKE POSSESSION OF UNOCCUPIED LAND.**

(1) If the amount of sewerage rates and penalty (if any) due in relation to any unoccupied land are not paid within the period of 30 days after publication of a notice under Section 198(b) in relation to the rates, the Minister may—

- (a) take possession of the land; and
- (b) hold it against any person; and
- (c) lease it from time to time for any term not exceeding five years.

(2) After taking possession under Subsection (1), the Minister shall cause to be kept accounts of—

- (a) the rents and other money derived by the State in respect of the land, and the expenses of and incidental to the leasing of it and the collection of the rent and other money; and
- (b) the rates and penalty and other sums owing to the State in respect of the land.

(3) The rents and money received under this section shall be applied in defraying the expenses necessarily incurred by the Minister in—

- (a) executing the lease; and
- (b) collecting the rents; and
- (c) payment of the rates and penalty,

and the balance (if any) belongs to the person who would have been entitled to receive the rents and profits if the Minister had not taken possession.

(4) Within 10 years after the Minister has taken possession of any land under this section, a person who, but for this section, would be entitled to the possession of the land may—

- (a) inspect the accounts kept under Subsection (2); and
- (b) require the Minister to put him in possession, on payment of the balance due (if any),

and the Minister shall comply with the requirement and pay to the claimant, without delay, any balance in his favour.

(5) Unless—

- (a) a person claims the land under Subsection (4); or
- (b) the land is sooner sold under Section 200,

the land or the proceeds of sale of any land of which possession is taken under this section, and all the rents and money in respect of the land, become the property of the State, at the expiration of the period of 10 years referred to in Subsection (4).

## **200. SALE OF RATEABLE LAND.**

(1) When an amount of sewerage rates due in relation to any land is not paid within the period of one year after the publication of a notice under Section 198(b) in relation to the land, the Minister may apply to the National Court for an order for sale of all or any part of the land.

(2) On the hearing of an application under Subsection (1), the National Court may order the sale of the land in such manner as the Court directs.

(3) The proceeds of a sale under Subsection (2) shall be used to defray the costs incurred in the sale and the rates and penalty due to the State, and any credit balance shall be held in trust for the owner of the land.

(4) Notwithstanding an order under Subsection (2) for sale, if before the land is sold the owner pays the rates and penalty (if any) due, together with the costs and expenses incurred up to the time of payment, the order shall be deemed to be rescinded so far as regards the land in respect of which the rates, penalty, costs and expenses are so paid.

## **201. RECOVERY OF RATES.**

(1) Where any amount of sewerage rates are unpaid after a period of six months from the date of posting the relevant notice under Section 194, a further final notice shall be posted setting out the rates, and warning in heavy type that failure to liquidate the debt within 14 days will result in legal action for recovery of the rates.

(2) After the expiration of a period of 30 days from the final notice, the Minister may sue for, and recover from the owner or any person liable, the amount of the rates, together with the penalty (if any), in any court of competent jurisdiction.

## **202. CONTINUING LIABILITY OF OWNER.**

When an owner of rateable land sells or otherwise disposes of the land, he shall give notice of the change of ownership to the Minister, and until such notice is given he is liable for any sewerage rates and penalty in respect of the land as if he were still the owner.

### **203. JOINT OWNERS.**

Joint owners of any land are jointly and severally liable for the whole amount of any sewerage rates and penalty due in respect of the land, but as between themselves each is liable only for his share.

### **204. REFUNDS AND REMISSIONS.**

The Minister may—

- (a) refund any amount of sewerage rates or penalty overpaid; and
- (b) remit any penalty imposed by Section 196 in any case where, in his opinion, the imposition of the particular penalty would be inequitable in the circumstances.

## **PART XIII. – MISCELLANEOUS.**

### **205. RESPONSIBILITY FOR CLEANSING OF DRAINS.**

The occupier of any land is responsible for cleansing the drain connected to the Local Medical Authority's sewer, and for keeping it clean, and in the case of a drain that is used as a common drain by more than one occupier of land the cost of cleansing it and keeping it clean shall be borne equally by each of them.

### **206. GENERAL PENALTY.**

A person who contravenes or fails to comply with any provision of this Regulation for which no other penalty is provided is guilty of an offence.

Penalty: For the first offence, a fine not exceeding K10.00.

For a subsequent offence, a fine not exceeding K 20.00.

In addition, a fine not exceeding K1.00 for each day during which the offence continues after the receipt of a written notification from the Local Medical Authority.

### **207. LIABILITY OF OFFENDER FOR EXPENSES OF LOCAL MEDICAL AUTHORITY.**

In addition to any fine provided for by this Regulation, a person who is convicted of an offence against this Regulation is liable for all expenses incurred by the Local Medical Authority in consequence of the offence.

## **SCHEDULE 1**

***PAPUA NEW GUINEA.***

***Public Health Act 1973.***

***Form 1 – Permit to Discharge Trade Waste into Sewer.***

... , of ... , is permitted, subject to the *Public Health (Sewerage) Regulation*, to discharge trade waste from (*describe process of manufacture*) carried on by him (*or it*) at (*describe premises*) into the ... sewer at (*location of sewer*) by (*location of drain through which trade waste conveyed*).

This permit is issued subject to the following special conditions:—

This permit remains in force until ... 20 ...

Dated ... 20 ...

Sewerage Engineer.

**SCHEDULE 2 – FEES FOR PLANS FOR CONNECTIONS TO SEWERAGE SYSTEMS.**

	K
1. Plan of drainage for building where not more than one water-closet or urinal is provided	2.00
for every additional water-closet or urinal	1.00
2. Plan of any amendment of original plan referred to in Item 1	1.00
3. Plan of sewerage connection	1.00
4. Survey of levels where required for the purposes of a plan referred to in Item 1, 2 or 3	2.00

**SCHEDULE 3 – SYMBOLS TO BE USED IN PLANS OF PLUMBING.**

Reg., Sec. 24(b)(i).

B.T.—Boundary trap.

C.I.P.—Cast-iron pipe.

D.T.—Disconnecter trap.

E.V.—Educt vent.

G.D.T.—Gully disconnecter trap.

G.E.W.P.—Glazed earthenware pipe.

G.I.T.—Gully interceptor trap.

G.T.—Gully trap.

G.W.I.P.—Galvanized wrought-iron pipe.

I.C.—Inspection chamber.

I.O.—Inspection opening.

M.H.—Manhole.

S.D.P.—Stoneware drain pipe.

S.I.V.P.—Soil induct vent pipe.

S.T.—Silt trap.

S.V.P.—Soil vent pipe.

T.I.T.—Triple interceptor trap.

Internal fittings, such as showers, baths, closets, basins, sinks, troughs, urinals, etc., should be indicated by numerals or drawings and an explanatory key provided.

**SCHEDULE 4 – TABLE OF EQUIVALENT FIXTURE UNITS.**

Reg., Sec. 93.

Fixture.	Nominal outlet diameter.	Fixture units.
	mm	
One lavatory basin	32	1
For each lavatory basin over 20 served by the pipe		0.5 for each basin
One kitchen sink (up to 150mm depth to overflow)	50	3
One bath (with or without overhead shower)	40	4
	50	6
One wash trough set with common trap	50	5
One urinal or group of urinals drained to a common trap	50	3
One slop sink	80	4
One shower compartment	50	3
One water-closet	100	6
Group of fixtures contained in one apartment–		
Bath and lavatory basin		6
Bath, lavatory basin and shower		6
Bath, lavatory basin, shower and water-closet		6

**SCHEDULE 5 – SIZES OF SOIL, WASTE AND DRAIN PIPES.**

Reg., Sec. 94.

Diameter of pipe.	Grade not less than–				
	Minimum permissible grade.	1 in 40 (corresponding to 88.5° fittings).	1 in 12 (corresponding to 85° fittings).	1 in 4 (corresponding to 75° fittings).	Vertical stacks.
mm					
32	1		1	1	1
40	6		6	8	9
50	9		12	17	24
65	14		20	28	36

80	20		30	40	50
100	100	100	150	210	260
150	420	490	820	1,150	1,400.

**SCHEDULE 6 – DIAMETERS OF VENTS.**

Reg., Sec. 95(2).

Diameter of soil, combined waste or waste pipe.	Total no. of fixture units, calculated in accordance Section 93.	Total length of vent in storeys–									
		1	2	3	4	5	6	7	8	9	10 and over.
mm		(Diameter of vent in mm).									
40	Not more than 8	32	32	32	40	40					
	Exceeding 8 but not exceeding 14	32	32	40							
50	Not more than 12	40	40	40	40	50	50	50			
	Exceeding 12 but not exceeding 18	40	40	40	50	50	50	50			
	Exceeding 18 but not exceeding 36	40	40	40	50	50	50	50			
65	Not more than 6	40	40	40	40	40	50	50	65	65	65
	Exceeding 6 but not exceeding 12	40	40	40	40	50	50	50	65	65	65
	Exceeding 12 but not exceeding 24	40	40	40	40	50	50	65	65	65	65
	Exceeding 24 but not exceeding 36	40	40	40	50	50	50	65	65	65	65
	Exceeding 36 but not exceeding 54	40	40	40	50	50	65	65	65	65	65
80	Not more than 12	40	40	50	50	50	50	50	50	50	65
	Exceeding 12	40	50	50	50	50	65	65	65	65	65

	but not exceeding 18										
	Exceeding 18 but not exceeding 24	50	50	50	65	65	65	65	65	65	65
	Exceeding 24 but not exceeding 30	50	50	50	65	65	65	65	65	65	80
	Exceeding 30 but not exceeding 42	50	50	65	65	65	65	65	80	80	80
	Exceeding 42 but not exceeding 60	50	50	65	65	65	65	80	80	80	80
	Exceeding 60 but not exceeding 75	50	65	65	65	65	80	80	80	80	80
100	Not more than 12	50	50	50	65	65	65	65	65	65	65
	Exceeding 12 but not exceeding 24	50	65	65	65	65	65	65	65	80	80
	Exceeding 24 but not exceeding 36	50	65	65	65	65	65	65	80	80	80
	Exceeding 36 but not exceeding 48	65	65	65	65	65	80	80	80	80	80
	Exceeding 48 but not exceeding 72	65	65	65	65	80	80	80	80	80	80
	Exceeding 72 but not exceeding 120	65	65	65	80	80	80	80	80	80	80
	Exceeding 120 but not exceeding 180	65	65	80	80	80	80	80	80	80	80
	Exceeding 180 but not exceeding 300	65	80	80	80	80	80	80	100	100	100
	Exceeding 300 but not exceeding 390	80	80	80	80	80	100	100	100	100	100
150	Not more than 600	100	100	100	100	125	125	125	125	125	125

Exceeding 600 but not exceeding 1,300	100	125	125	125	125	125	125	125	125	150	150
Exceeding 1,300 but not exceeding 2,100	100	125	125	125	125	150	150	150	150	150	

**SCHEDULE 7 – WATER-CLOSETS, URINALS AND HAND BASINS IN PUBLIC BUILDINGS.**

Reg., Sec. 145(2)(f).

**1. Water-closets and Urinals**

No. of seats in building.	No. of water-closets–		No. of urinals.
	For males.	For females.	
Not exceeding 200	1	2	1
Exceeding 200 but not exceeding 400	1	3	2
Exceeding 400 but not exceeding 600	2	4	2
Exceeding 600 but not exceeding 1,000	2	5	3
For every 1,000 (or part of 1,000) in excess of 1,000	1	2	1

**2. Hand Basins.**

No. of seats in building.	Hand basins for males.	Hand basins for females.
For every 500 (or part of 500)	1	1

**SCHEDULE 8 – SIZES OF WATER SUPPLY PIPES.**

Reg., Sec. 154(8).

Available head in storeys.	Diameter of portion of supply pipe under consideration.	Maximum permissible number of flush valves served by portion of supply pipe under consideration.	
		Galvanized wrought-iron pipe.	Copper or brass pipe.

	mm		
1	40	1	2
	50	10	15
	65	30	50
	80	100	150
2 or 3	40	2	3
	50	15	30
	65	50	150
	80	100	

Office of Legislative Counsel, PNG