



GOVERNMENT GAZETTE

OF THE

REPUBLIC OF NAMIBIA

N\$10.80

WINDHOEK - 11 November 2010

No. 4603

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General Notices

MUNICIPALITY OF WINDHOEK

No. 311 2010

SEWERAGE TARIFFS OTHER THAN INDUSTRIAL TARIFFS: LOCAL AUTHORITIES ACT, 1992

The Council of the Municipality of Windhoek, in terms of section 30(1)(u) of the Local Authorities Act, 1992 (Act No. 23 of 1992), determines the sewerage tariffs for services rendered under its Sewerage And Drainage Regulations published under General Notice No. 312 of 11 November 2010 as set out in the Schedule.

SCHEDULE

Definitions

1. In this notice a word or an expression to which a meaning has been assigned in the Local Authorities Act, 1992 (Act No. 23 of 1992) and the Sewerage and Drainage Regulations published under General Notice No. 312 of 11 November 2010, has that meaning, and unless the context otherwise indicates -

“consumptive use” means that portion of water used by the consumer on his premises for any purpose and not being discharged into the sewerage system of the Council;

“sewage flow” means combined sewage and industrial effluent being treated at the sewage works of the Council.

Charges for sewage

2. The users of Council’s sewerage system and sewage works includes the owner or occupier in relation to immovable property referred to in the attached Table, as well as the owner or occupier of any stand, lot, erf, subdivision or other area with or without improvements which either are, or in the opinion of the Council can be connected to any sewer of the Council and the charges payable in respect of such users of the Council’s sewerage system or sewage-works, must be calculated in accordance with the following formulas:

$$B = \frac{A}{C} \times D$$

in which formula -

- B** represents the monthly sewerage rate in rand which is payable by the consumer to the Council;
- A** represents the flow of sewage of the consumer which is monthly measured in m³: Provided that in the event the said sewage not being measured, the Council may calculate the sewage in accordance with the design flow figures of the sewerage system or it can be calculated on a percentage basis of the measured water consumption in m³ of the consumer for the said month.
- C** represents the average monthly total sewage flow of all the consumers measured in m³ at the sewage works of the Council for the preceding calendar year: Provided that the said total sewage flow will be increased with 4% to provide for the annual increase of sewage flow to the sewage works.
- D** represents the total of the average monthly costs in Namibian Dollar attached to the maintenance and operational expenses of the sewerage system and the sewage works of the Council: Provided that the monthly costs in Namibian Dollar be calculated on

Reference	Description	Tariff	VAT
Regulation 4(c)	Residential Houses		
	Erf Size ≤ 400 m ² 12.5 m ³ @ B	12.5 x B	0%
	Erf Size > 400 m ² ≤ 900m ² 15m ³ @ B	15 x B	0%
	Erf Size >900m ² 18m ³ @ B	18 x B	0%
	With swimming pool + 1m ³ @ B	B	0%
	Vacant Residential Erven		
	Erf Size ≤ 400 m ² 12.5 m ³ @ N\$ B	12.5 x B	0%
	Erf Size > 400 m ² ≤ 900m ² 15m ³ @ B	15 x B	0%
	Erf Size >900m ² 18m ³ @ B	18 x B	0%
	Flats (Including Sectional Titles) 12m ³ per flat @ B	12 x B	0%
Hostels 4m ³ per bed @ B	4 x B	15%	
Hospitals, Nursing Homes, Old Age Homes: 6m ³ per bed @ B	6 x B	15%	
Schools, Colleges and Universities 1m ³ per person @ B	B	15%	
Churches and Church Halls 18m ³ per church @ B	18 x B	15%	

	All other categories (Pensions, Businesses) Tariff x % of water consumption (% determined by Chief Engineer: Bulk and Waste Water) Minimum 18m ³ (Usually 85%)	B	15%
	Vacant Erf Non- Residential 20m ³ per 1000m ² erf area x B (rounded off to the next number)	B	15%
	Additional allowance for swimming pools - 1m ³ per month per pool	B	0%
	Katutura (As per special agreement for households in informal settlements)	As determined by Council	0%
Regulation 5(7)(a)(b) and (c)	Connection to the public sewer. The charges payable for - (a) the provision of a connecting sewer; (b) the alteration of the position of a connecting sewer at the request of the owner of premises; or (c) a communal sewerage service,	Actual cost plus 15% admin fee	15%
Regulation 8(3)	Late Fees	20% per annum of amount payable	
Regulation 16(5)	Clearing of blockages	Actual cost plus 15% admin fee with a minimum of N\$300.00	15%
Regulation 17(6)	Disconnection Tariff; Including disconnection, removal and sealing of the public sewer.	Actual cost plus 15% admin fee with a minimum of N\$300.00	15%
Regulation 26(a), (b) and (c)	Fees for registration and renewal of Drain Layers (a) Registration as plumbing contractor (b) Renewal of Registration (c) Duplicate registration card	As determined by Council	15%
Regulation 29(12)	Fees for drawings of the proposed drainage installation or alterations or extension (a) Residential (b) Commercial/industrial	Actual cost plus 15% admin fee	15%
Regulation 37 (4) (a)	Emptying of Conservancy tanks $Cost = (T + O + Lc) \cdot t + T \cdot d + L \cdot l$ Where, T=Tanker charge rate (N\$/hr), t=time (hr), O=Operator's charge rate (N\$/hr), Lc=Operator's Assistant charge rate N\$/hr, T=Transport charge rate (N\$/km), d=distance (km), L>Loading charge rate (N\$/ld), l=No. of Loads	As determined by Council	15%
Regulation 37 (5) and (6)	Maintenance/Installation/Removal of conservancy tanks or septic tanks and absorption fields Renting of Chemical Toilets	Actual cost plus 15% admin fee with a minimum of N\$500.00 As determined by Council	15%

MUNICIPALITY OF WINDHOEK

No. 312

2010

**SEWERAGE AND DRAINAGE REGULATIONS:
LOCAL AUTHORITIES ACT, 1992**

The Council of the Municipality of Windhoek, has under section 94(1) of the Local Authorities Act, 1992 (Act No. 23 of 1992), after consultation with the Minister of Regional and Local Government, Housing and Rural Development -

- (a) made the regulations set out in the Schedule; and
- (b) repealed the Municipality of Windhoek Drainage Regulations published under Government Notice No. 208 of 1 November 1930.

**M. SHIKONGO
CHAIRPERSON
BY ORDER OF THE COUNCIL**

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PART I DEFINITIONS

Definitions

1. In these regulations a word or an expression to which a meaning has been assigned in the Act has that meaning and, unless the context otherwise indicates -

“absorption field” means an on-site effluent disposal system in which effluent is received underground, such as a french drain or evapotranspiration bed and for which approval was granted under regulation 37;

“accommodation unit”, in relation to premises, means any building or section of a building occupied or used or intended for occupation or use for residential, business or industrial purposes or any other purpose;

“approved” means approved in writing by the Council or the engineer acting on its behalf;

“cleaner production” means the continuous application of an integrated preventive environmental strategy to processes, products and services to increase overall efficiency, and reduce risks to human beings and the environment;

“composite sample” means a sample that represents the characteristics of a flow stream for the total elapsed time of sampling;

“communal sewerage service” means communal drainage installations provided by the Council for the communal use by residents residing on identified erven in a settlement area;

“connecting sewer” means a pipe, including any or all of fittings, equipment and other material which belongs to the Council, and which connects a drain to a public sewer;

“conservancy tank” means a covered tank used for the reception and temporary retention of sewage and which requires emptying at intervals;

“construction”, when used in relation to a drainage installation, includes maintenance, alteration and replacement;

“Council” means the Council of the Municipality of Windhoek;

“customer” means any person who has received approval under regulation 3 or is considered to have a contract under regulation 3(3), including an owner and occupier;

“discharge pipe” means any pipe other than a drain that conveys the discharge from one or more sanitary fixtures into a drain;

“domestic effluent” means effluent consisting of soil water or grey water or a combination of both;

“drain” means that part of a drainage installation that conveys sewage from a building to a combined private sewer, connecting sewer or any other sewage disposal system situated on the premises concerned, but excludes -

- (a) any discharge pipe;
- (b) any portion of a discharge stack which is below ground level; and
- (c) the bend at the foot of a discharge stack, whether such bend is exposed or not;

“drainage installation” means the installation on any premises used or intended for use for the reception, conveyance, storage or treatment of sewage, including buildings, toilets, sanitary fixtures, traps, discharge pipes, drains ventilating pipes, septic tanks, conservancy tanks, sewage works or electrical or mechanical appliances associated with it;

“drainage inspector” means a staff member of the Council charged with the function of assisting the engineer with inspections and interventions on behalf of the Council that are necessary or expedient to give effect to these regulations;

“drain-layer” means a person registered as a drain-layer with the Council in terms of regulation 19;

“effluent” or “wastewater” means liquid or slurry discharged as waste, including sewage, liquid or slurry discharged as a result of the use or the treatment of water;

“engineer” means a staff member of the Council or a person acting in such capacity in connection with the Council, for the purpose of administering and enforcing these regulations;

“evapo-transpiration bed” means a special type of absorption field that comprises a shallow sand-filled excavation covered with top soil and planted over with suitable vegetation;

“french drain” means a conventional absorption field that comprises a trench that is filled with suitable granular material and that is used for the underground disposal of liquid effluent from a septic tank or grey water;

“grey water” means effluent collected separately from a sewage flow that originates from a clothes washer, bathtub, shower, and sink, but excludes wastewater from a toilet which is not contaminated by soiled water or industrial effluent;

“grab sample” means a random sample taken to determine the characteristics of a flow stream for a specific time of sampling;

“industrial effluent” means liquid whether it contains matter in solution or suspension and which is produced in the course of, or as a result of any industrial activity, trade, business, commercial activity, manufacturing, mining, chemical process, laboratory activity, research, agricultural activity, treatment of effluent, or any other non-domestic activity, but excludes domestic effluent and storm water and water discharged from swimming pools, fountains and reservoirs containing potable water;

“installation” means a constructed or assembled system or both, or a subsystem;

“installation work” means the process of making an installation;

“load” means the product of the concentration of any element in effluent, expressed in grams per litre, and the total volume of effluent over a fixed period of 24 hours (expressed in kilolitres) and is expressed in kilograms per day;

“local authority area” means the local authority area of the Municipality of Windhoek;

“maintenance” includes repair, renovation, replacement, flushing, cleansing, protection, support and renewals;

“off peak periods” means the period as determined by the engineer for discharging to the sewer system;

“occupier” in relation to any premises means –

- (a) the person in actual occupation of premises whether that person is the owner or not;
- (b) the person legally entitled to occupy the premises; or
- (c) the person having the charge or management of the premises; or
- (d) the agent of any such person who is absent from Namibia or whose whereabouts is unknown;

“premises” means land or a building on that land;

“reclaimed water or “recycled water” means effluent derived in any part from a sewage works or a treatment process supplementary to those of a sewage works or any part of it, that has been adequately and reliably treated, and is suitable for a beneficial or controlled use;

“residential premises” means premises used or intended for use solely for domestic purposes and which is not used for trade, business, manufacturing or industrial purposes;

“settlement area” means the area used or intended to be used and set aside by the Council for low-income residents;

“sewage” means grey water, soil water, industrial effluent and other liquid waste, either separately or in combination, but excludes storm water;

“sewerage” means the system of sewers and appurtenances for the collection, transportation and pumping of sewage;

“sewerage service contract” means a sewerage service contract referred to in regulation 3;

“sewerage service” means the sewerage service provided by the Council in terms of the Act and these regulations;

“sewer system” means the network of sewer lines, pump stations and force mains that discharge to a common sewerage works;

“sewerage system” means all sewers, facilities and appurtenances for carrying, collecting, pumping, treatment and disposal of wastewater;

“sewerage tariff” means the schedule of charges, fees and other moneys determined by the Council under section 30(1)(u) of the Act in respect of the supply of sewerage and drainage services;

“sewerage works” includes any reservoir, tank, strainer, filter bed, engine, pump, machinery, land, building or such other works, except sewers, as may be necessary to treat and dispose of sewage;

“soil pipe” means a pipe that conveys soil water to a drainage installation;

“soil water” means liquid containing human body wastes such as faeces and urine;

“stilling chamber” means a chamber installed in a effluent conveyance system that is designed to reduce turbulence in the flowing effluent;

“storm water” means runoff water that results from any form of natural precipitation of water, including rainfall, hail and snow;

“the Act” means the Local Authorities Act, 1992 (Act No. 23 of 1992);

“town planning scheme” means the Windhoek town planning scheme prepared in terms of the Town Planning Ordinance, 1954 (Ordinance No. 18 of 1954);

“township” means a township as defined in section 1 of the Townships and Division of Land Ordinance, 1963 (Ordinance No. 11 of 1963);

“waste pipe” means a discharge pipe that conveys grey water only;

“Water Act, 1956” means the Water Act, 1956 (Act No. 54 of 1956);

“water discharge” means the discharge of effluent or storm water, or a combination of it;

“Water Supply Regulations” means the Water Supply Regulations published under General Notice No. 367 of 16 December 1996.

(2) In these regulations the acronym “SANS” followed by a number or a number and a title, is a reference to the specification of the indicated number published by the South African Bureau of Standards or any similar institution established for Namibia and as accepted in Namibia and all amendments of it, and which are available for inspection free of charge at the office of the engineer during office hours.

(3) Explanatory diagrams, in which the different types of effluent are shown in relation to one another, are attached to these regulations as Annexure C.

PART II SUPPLY OF SEWERAGE SERVICES BY COUNCIL

Council’s sole right to provide connecting sewer

2. A person may not obtain the connection of any private sewer to a public sewer, directly or through a combined private sewer, except by means of a connecting sewer, provided by the Council on approval of the drainage installation and subject to these regulations.

Conditions for provision of sewerage service by Council

3. (1) The Council may supply a sewerage service to premises in the local authority area, if the owner or occupier of the premises has -

- (a) obtained the approval contemplated in regulation 2;
- (b) has complied with the requirements of these regulations for procuring a sewerage service;
- (c) has paid or has made acceptable arrangements for the payment of all arrear rates leviable in respect of the premises in terms of the Act; and
- (d) has paid all the fees, charges or other monies due to the Council in respect of a service, amenity or facility supplied to the premises in terms of the Act, inclusive of any availability charge or minimum charge leviable under section 30(1)(u) of the Act, whether it relates to a service provided in terms of these regulations or not.

(2) Despite subregulation (1), the Council is not required to provide sewerage service if a public sewer is not available at a point within the close proximity of the premises from where it is reasonably possible to provide a connecting sewer to the premises or to a combined private sewer to which the premises may be connected.

(3) If the Council has given approval to connect to its public sewers, the owner or occupier concerned is considered to have contracted with the Council.

(4) Despite subregulation (1), the Council may provide a communal sewerage service to premises in the local authority area situated within a settlement area, subject to the conditions specified in regulation 38.

Application for provision of a sewerage service

4. (1) An application for the provision of a sewerage service must be made to the Council in the form determined by the Council.

(2) If an application in terms of subregulation (1) is made for the connection of premises to a public sewer, the application must be made by the owner of the premises or the authorised representative of the owner and be submitted to the Council at least six weeks before the connection is required.

(3) On submission of an application in terms of subregulation (1), the applicant must -

- (a) sign an undertaking to comply with these regulations for the provision of a sewerage service;
- (b) pay the fees determined in the sewerage tariff for a connecting sewer; and
- (c) ensure the payment to the Council of arrears, if any, referred to in regulation 3(1)(c) and (d), and pay to the Council the appropriate fee determined in the sewerage tariff.

(4) The provision of a sewerage service by the Council to any person is subject to these regulations and the conditions contained in the relevant sewerage service application and plan approvals.

Connection to the public sewer

5. (1) If an application for the provision of a sewerage service is approved in respect of premises which are required to be connected to the public sewer for the first time, the Council must provide a connecting sewer from the public sewer to the premises in such position and to such point on the premises as the engineer may determine.

(2) The engineer may, at the cost of the owner, at the request of the owner of premises or at the engineer's own initiative, alter any connection made to a public sewer in terms of subregulation (1).

(3) If a connecting sewer is provided by the Council to any premises, the owner of the premises must provide and maintain at the owner's cost, and subject to Part III, the drainage installation on the premises.

(4) If a connecting sewer or a communal sewerage service is provided by the Council to premises in the settlement area, the owner or the community concerned in respect of a communal sewerage service must clean and maintain at the cost of the owner or community, and subject to Part III, the drainage installation on the premises.

(5) Until a drainage installation has been connected to the public sewer or to a combined private sewer which is connected to the public sewer, a person may not discharge or cause to be discharged into the drainage installation any substance, except unpolluted water for the purpose of testing the functioning of the drainage installation or a part of it during or on the completion of its construction.

(6) Only staff members of the Council authorised for that purpose or any other person authorised in writing by the Council may approve or install a connecting sewer for linking any private sewer or combined private sewer to a public sewer.

(7) The charges payable for -

(a) the provision of a connecting sewer;

(b) the alteration of the position of a connecting sewer at the request of the owner of premises; or

(c) a communal sewerage service,

are as determined in the sewerage tariff.

(8) A charge payable in terms of subregulation (7)(a) or (b) must be paid to the Council in advance before the Council begins the necessary work in respect of a sewer.

Provision of connecting sewer to several owners or occupiers on the same premises and combined private sewers

6. (1) Subject to subregulation (2) and regulation 43(1)(b)(iii), only one connecting sewer must be provided in respect of premises, irrespective of the number of accommodation units located on the premises, but the engineer may permit that the drainage installations of two or more premises or two or more accommodation units be connected to a combined private sewer discharging into the public sewer.

(2) More than one connecting sewer may with the approval of the engineer be allowed on premises -

(a) in the case of premises comprising sectional title units or comprising of another type of high density development;

(b) if, in the opinion of the engineer, undue hardship or inconvenience is not likely to be caused to any owner or occupier of the premises; or

(c) if the topography or size of any premises makes the provision of more than one connecting sewer necessary or desirable.

Ownership of connecting sewer

7. Pipes, fittings, equipment and material used by the Council in providing a connecting sewer to premises remain the property of the Council and are to be maintained by the Council.

Payment for sewerage services

8. (1) Subject to regulation 9, a person to whom the Council has given approval as contemplated in regulation 3, or who is considered to have concluded a sewerage service contract with the Council under regulation 3, or the owner of premises, if there is no occupier, must pay the

charges in respect of the sewerage service from the date on which the Council provides the public sewer or communal sewerage services or from a subsequent date that it is available or the charges remain unpaid by an owner or occupier of the premises.

(2) The Council determines the charges for the sewerage service by using the rates and tariffs determined in the sewerage tariff for the particular category of use for which the service is provided, which charges are payable monthly in advance, not later than the last date for payment specified in the account provided by the Council for the charges.

(3) If payment of an account is received after the date referred to in subregulation (2), a late fee as determined in the sewerage tariff is payable to the Council.

(4) If during any period a person uses the sewer system for a category of use other than that for which the Council has agreed to provide the sewerage service, and as a result -

(a) is not charged for the service or is charged at a rate lower than that which the Council was allowed to charge, the person is in respect of the period in question liable for the amount due to the Council in accordance with the appropriate rate provided in the sewerage tariff as leviable for the category of use for which the sewerage service is provided; or

(b) is charged at a rate higher than that which the Council was allowed charge, the person must be refunded the difference between the two rates in respect of monies actually overpaid by the person, but not for a period exceeding three years.

(5) Other services related to the provision of a sewerage service must be paid for at the fees and charges determined in the sewerage tariff.

(6) In setting up the sewerage tariff and special effluent standards the Council may differentiate between various drainage zones in the local authority area, in order to account for special sewage treatment requirements, water reclamation considerations and other cost factors.

Availability charges for provision of sewerage service

9. (1) The Council may, in addition to the charges determined in sewerage tariff for the actual use of the sewerage service provided by the Council, levy in terms of the sewerage tariff an availability and a minimum charge or a monthly minimum charge for the availability of a sewerage service to residents of the local authority area not making use of the service.

(2) If an availability charge is levied in terms of subregulation (1), the charge is payable -

(a) by the owner of premises, with or without improvements, which are not connected to the public sewer but can reasonably be connected by the provision of a connecting sewer; and

(b) by the owner of premises or if premises are occupied by any other person by the occupier, in respect of each connecting sewer provided by the Council to serve the premises, whether or not the sewerage service is being used.

(3) If a minimum monthly charge is levied in terms of subregulation (1), it is payable by the owner or occupier of premises in respect of a specified volume of sewage flow based on design volumes, whether or not the amount of sewage discharged on the premises is less than or exceeds the calculated design volume.

(4) Despite subregulation (2), an availability charge levied by the Council under subregulation (1) is not payable by the owner of a township in respect of any unalienated premises in the township, if -

- (a) the sewerage reticulation system in the township has been provided by the township owner at the township owner's cost; or
- (b) the township owner has deposited with the Council the capital cost of the sewerage reticulation system.

(5) From the date of the alienation of the premises by the owner of a township to any other person the availability charge levied by the Council under subregulation (1) becomes payable by the person and every successor in title.

Objection to account provided for sewerage services

10. (1) If a person disputes the correctness of charges reflected on an account provided by the Council, the person may lodge, after paying the charges that the person alleges to be correct, an objection in writing against the account with the Council within 14 days after the date of receipt of the account.

(2) The Council must within 30 days of receipt of an objection in terms of subregulation (1), in writing, accept or reject the objection.

(3) Pending consideration of an objection by the Council in terms of subregulation (2) the account contemplated in subregulation (1) remains payable by the customer on the due date as specified on the account in question.

(4) If the Council accepts an objection in terms of subregulation (2) the customer's account must be debited or credited, as the case may be, with the amount allowed by the Council.

General conditions for provision of connecting sewer

11. If in the opinion of the engineer the volume or quality of sewage discharged from premises adversely affects the functioning of the public sewerage system, the engineer may apply such restricting measures as the engineer considers appropriate to lower its impact, which measures may include the restriction of peak sewage flow or discharge concentrations from the premises into the public sewer.

Compulsory provision of drainage installation or other sanitary disposal system

12. (1) If, in respect of premises a suitable means of disposal of sewage by discharge into a public sewer is available, the owner of the premises must provide and install a drainage installation on the premises that discharges into the public sewer.

(2) If a public sewer is not available for providing a connecting sewer to premises, the owner of the premises must, before the occupation of the premises by a person, make provision for any other means of sewage disposal as the engineer may permit, but subject to -

- (a) regulation 37, if a conservancy tank or a septic tank and absorption field is permitted; or
- (b) regulation 38, if any other means of sewage disposal is permitted.

(3) If, in the case of premises contemplated in subregulation (2), the owner of the premises is notified in writing by the engineer that a public sewer has been installed from which a connecting sewer can be provided to the premises, the owner must, within the period specified in the notice, but which may not exceed 6 months -

- (a) provide a drainage installation on the premises or make any necessary extensions or alterations to an existing installation on the premises for the purpose of connecting the premises to the public sewer; and
 - (b) comply with regulation 4, as if the owner had applied for a connecting sewer.
- (4) If, the owner of premises fails to comply with a notice referred to in subregulation (3) on the expiry of the period specified in the notice or such longer period as the engineer may allow, the owner is with effect from the date following on the expiry of that period, liable -
- (a) for the charges determined in the sewerage tariff for the provision of a sewerage service; and
 - (b) until such time as the premises concerned are connected to the public sewer, to pay for the Council's conservancy tank or pail removal service, whichever is applicable, at three times the rate determined in the sewerage tariff for the service.
- (5) The owner of premises to which a pail or conservancy tank service is provided must give written notice to the engineer if the service is no longer required, and the owner is liable for the charges of the service until the owner has given such notice.
- (6) A contractor or other person employing workmen for the construction of a building or carrying out any other work on premises -
- (a) to which a connecting sewer is available for the purposes of a building constructed or to be constructed on it, must, if a connecting sewer is available on the premises, provide on the premises a proper toilet with water closet and flushing cistern connected to the connecting sewer for the convenience of the workmen; or
 - (b) if a connecting sewer is not available on the premises, provide chemical toilets that are permitted by the engineer.
- (7) A person who contravenes subregulation (1), (2) or (6) commits an offence.

Faulty drainage installations

13. (1) If, at any time a drainage installation on premises is found not to conform to these regulations, the engineer may by notice in writing to the owner concerned require the owner to remedy the defect, at the cost of the owner and within a period specified in the notice.

(2) If, in the opinion of the engineer a nuisance exists owing to the emission of offensive gases or odours from a ventilating pipe, trap or sanitary fitting or any other part of a sewerage system on premises, the engineer may by notice in writing to the owner concerned, require the owner to take, within such period as may be specified in the notice and at the cost of the owner, such measures as may be reasonably necessary to prevent the recurrence of the nuisance.

(3) If, sewage discharged into a drainage installation enters any soil, water fitting or grey water fitting connected to the drainage installation, by reason of surcharge, back pressure or any other circumstance, the engineer may by notice in writing to the owner concerned require the owner to carry out, at the owner's cost and within such period as may be specified in the notice, any work reasonably necessary to abate the entry of sewage and to prevent any recurrence of it.

(4) A person who fails to comply with a notice given under subregulation (1), (2) or (3) commits an offence.

Council's power to perform certain work on private premises

14. (1) If an owner or occupier of premises has been required by a notice in terms of these regulations to carry out work in relation to the drainage installation on the premises, by way of construction, repair, replacement or maintenance, and the owner or occupier fails to comply with the notice within the period specified in the notice, the engineer may cause the work to be carried out and recover the cost of the work from the owner concerned as provided for in the sewerage tariff.

(2) Any action taken by the engineer in terms of subregulation (1) does not prevent the prosecution of any person for a contravention of these regulations.

(3) If charges are not determined in the sewerage tariff in respect of any work carried out by the engineer in accordance with subregulation (1), the owner of the premises in question is liable to pay to the Council the actual cost of the work plus an administration levy equal to fifteen percent (15%) of the cost.

(4) If, as a result of the non-compliance with or contravention of any of these regulations, damage is caused to the public sewer or any part of the Council's sewerage treatment system, the Council must repair the damage at the cost of the person responsible for the non-compliance or contravention.

Maintenance of drainage installation

15. (1) An owner of premises must, at the cost of the owner, ensure that -

- (a) the drainage installation on the premises is in a proper state of repair and maintained in good working order;
- (b) every trap or other fitting forming part of the drainage installation is kept free from any accumulation of grease, oil or fat or any other substance or materials or plant roots or other plant material that may cause a blockage in any part of the drainage installation or may in any other manner adversely affect its proper functioning; and
- (c) every manhole, rodding eye or other access to a drainage installation and every outdoor gully is provided with an approved cover which remains closed at all times, but is accessible for the purpose of cleaning or other maintenance work.

(2) If, in the case of a building existing on premises at the commencement of these regulations, outdoor gullies on the premises are not provided with a precast concrete cover or any other approved mode of covering, the owner of the premises must, at the cost of the owner, cause the necessary steps to be taken to ensure that the gullies are provided with the covering within 12 months after the commencement of these regulations.

(3) If two or more owners share the use of a drainage installation or a part of it or share a combined private sewer, they are jointly and severally liable for the maintenance and repair of the drainage installation and for the compliance with this regulation.

(4) A person who contravenes subregulation (1), (2) or (3) commits an offence.

Clearing of blockages and services provided by Council

16. (1) If a blockage occurs in a drainage installation or to a connecting sewer, soil pipe or waste pipe connected to it, the owner or occupier of the premises concerned must, subject to subregulation (3), cause the blockage to be removed by or under the supervision of a drain-layer within forty eight hours that the blockage has been detected.

(2) Within five days after the completion of work referred to in subregulation (1) a drain-layer carrying out or supervising work contemplated in that subregulation, must in writing report to the engineer, the nature, location and cause of the blockage, if the drain-layer believes the blockage -

- (a) to have been caused by the intrusion of tree roots or foreign matter in the drainage installation; or
- (b) to have resulted because of a defect in the construction of the drainage installation; or
- (c) to have been caused by reason of foreign objects having been placed in the installation or allowed to have entered the installation.

(3) If the engineer considers it necessary or expedient for any reason, the engineer may, at the request of the owner or occupier of the premises, or at the engineer's own initiative, cause a blockage in the drainage installation to be removed and may recover from the owner or occupier the charges determined in the sewerage tariff for the service and in the absence of a tariff, the actual cost plus and administrative levy of 15%.

(4) If an overflowing of the drainage installation on premises is caused by an obstruction in the connecting sewer which the engineer has reason to believe to have been caused by objects emanating from the drainage installation, the owner or occupier of the premises in question is liable to pay to the Council the charges determined in the sewerage tariff for the removal of the blockage.

(5) If a blockage has been removed by the engineer from a combined private sewer or a drainage installation serving two or more premises, the owners or occupiers of the premises are jointly and severally liable to the Council for the charges as determined in the sewerage tariff for the removal of the blockage and in the absence of a tariff, the actual cost plus an administrative levy of 15%.

(6) The emptying of a conservancy tank or septic tank or night soil pail on premises may be carried out by the engineer at such times as the engineer may determine having regard to the general requirements of the service and in particular the avoidance of separate or unnecessary journeys by the Council's removal vehicles.

(7) Removal in terms of subregulation (6) is at the charges as determined in the sewerage tariff for the removal of the blockage contemplated in that subregulation and in the absence of a tariff, the actual cost plus an administrative levy of 15%.

Disconnection

17. (1) Except for the purpose of maintenance or repair to be carried out by or under the supervision of a drain-layer, a soil water fitting, soil pipe or grey water pipe may not be disconnected from a drainage installation or a connecting or public sewer without the written approval of the engineer.

(2) If a part of a drainage installation is permanently disconnected the owner of the premises must, at the cost of the owner -

- (a) dispose of the disconnected part in a manner that it is not a danger to health or have the potential to cause pollution; and
- (b) cause any opening in the drainage installation resulting from the disconnection to be sealed by a drain-layer.

(3) A drain-layer carrying out work contemplated in subregulation (1) and (2), must on completion of the work comply with regulation 27(2).

(4) If a disconnection contemplated in subregulation (2) has been carried out which requires the application in future of any different rate of fees and charges leviable under the sewerage tariff, the engineer must on the written application of the owner of the premises cause the adjustments to be made in relation to those fees and charges to give effect to the resulting changed circumstances.

(5) An adjustment directed by the engineer in accordance with subregulation (4) is applicable with effect from the first day of the month following the date of receipt by the engineer of the owner's application in terms of that subregulation, irrespective of the date on which the disconnection in question was completed.

(6) If a building on premises is demolished, the engineer may cause a connecting sewer to the premises to be disconnected and removed, and the owner of the premises is liable for the charges determined in the sewerage tariff, and in the absence of the tariff, the actual cost plus an administrative levy of 15% for the disconnection and removal, including the sealing of the public sewer.

(7) A person who contravenes subregulation (1) or (2) commits an offence.

PART III REGISTRATION OF DRAIN-LAYERS

Persons qualified to carry out work on drainage installation

18. (1) A person may not, unless the person is registered as a drain-layer in terms of regulation 19, carry out or undertake to carry out -

- (a) in relation to a drainage installation or a part of it, work for which approval is required by any of these regulations or which in terms of these regulations may be carried out only by a drain-layer;
- (b) an inspection or testing of a drainage installation; or
- (c) work for the disconnection of a part of, and the sealing of, a drainage installation.

(2) Despite subregulation (1), a community within a settlement area may with the approval of the engineer and under the supervision of a registered drain-layer carry out a sewerage installation.

(3) A person who carries out or attempts to carry out any work in contravention of subregulation (1) commits an offence.

Registration of drain-layers with Council

19. (1) An application for the registration of a person as a drain-layer for the purposes of these regulations, must be made in writing to the Council and must be accompanied by proof of the applicant's qualifications, training or experience as the Council may reasonably require.

(2) A person who has submitted an application for registration in terms of subregulation (1), must, in the form determined by the Council, give notice of the submission of the application by advertisement in two consecutive issues of a daily newspaper, circulating in the local authority area, and which notice must call upon persons wishing to object to the application to lodge their objections in writing with the engineer not later than 7 days after the date of the last publication of the notice.

(3) If, after consideration of an application in terms of subregulation (1) and objections, if any, the Council is satisfied that the applicant -

- (a) is a qualified artisan in the drain laying trade or has any comparable qualification approved by the Council or has had practical experience in that trade which the Council considers adequate and appropriate for purposes of registration as a drain-layer;
- (b) has an adequate knowledge of these regulations and of the provisions of SANS 10252-2:1993; and
- (c) is a Namibian citizen or -
 - (i) is a permanent resident of Namibia and is ordinarily resident in Namibia; or
 - (ii) holds an employment permit issued in terms of the Immigration Control Act, 1993 (Act No. 7 of 1993), in terms of the conditions of which the applicant is not prohibited or prevented from conducting the business or performing the work of a drain-layer in Namibia,

the Council may, subject to subregulation (4), grant the application and issue to the applicant a registration card.

(4) The Council may refuse to register a person as a drain-layer if the applicant has carried out any work referred to in regulation 18(1) without first being registered as a drain-layer.

(5) The Council may, on application made to the Council, register, and issue a registration card or cards, to a company or close corporation or partnership as a drain-layer, if -

- (a) at least one of the directors or members of the company, close corporation or partnership, holding not less than 10% of the shares of the company or of the members' interest in the close corporation or partnership, satisfies the Council with respect to the requirements mentioned in paragraphs (a) and (b) of subregulation (3); and
- (b) the controlling interest in such company, close corporation or partnership is not held by persons who are not Namibian citizens.

(6) Except in the case of the refusal of an application on the ground of non-compliance with subregulations (3)(c) or (5)(b), the Council may not make a decision that would be adverse to an applicant without giving to the applicant an opportunity of being heard and presenting evidence in support of the application.

(7) For the purposes of registering a person as a drain-layer or for the registering a company, close corporation or partnership as a drain-layer, the Council may require that the applicant or, where applicable, a person contemplated in subregulation (5)(a), be subjected to a test for the purposes of evaluating the applicant's skills in drain laying work or knowledge of the provisions of these regulations and SANS 10252-2:1993.

Term of registration

20. A registration card referred to in regulation 19(3) is valid for a period of 12 months from the date of issue, unless withdrawn under regulation 21 or withdrawn earlier, but may be renewed annually on application made in writing by the holder of the card not later than 21 days before the date of expiry.

Withdrawal or suspension of registration

21. (1) The Council may withdraw or suspend for such period as the Council may determine, the registration of a person as a drain-layer if the person or, in the case of a company, close corporation or partnership, one of its directors or members -

- (a) has in the application for registration as a drain-layer given any material information which the applicant knows or ought to have known as false;
- (b) has carried out or caused or permitted to be carried out drain laying or related work in a negligent, unsafe or inefficient manner or in contravention of any of these regulations or SANS 10252-2:1993;
- (c) has issued a certificate in terms of regulation 27(1)(b) which the applicant knows or ought to have known is incorrect or false; or
- (d) allows that the registration card to be used in a fraudulent manner.

(2) The Council may not exercise any of the powers under subregulation (1), unless the Council has -

- (a) given to the person concerned at least 21 days' notice in writing of the Council's proposed action and of the reasons for it; and
- (b) in the notice referred to in paragraph (a), invited the person contemplated in that paragraph, to lodge with the Council in writing any representations, which the person may wish to make in connection with the Council's proposed action.

Temporary registration

22. The Council may on application made to the Council by a person who complies with the requirements of regulation 19(3) or (5), register the person, or where applicable the company, close corporation or partnership, temporarily for the purpose of carrying out a specified work.

Production of registration card

23. A person carrying out or about to carry out work referred to in regulation 18(1), must, when requested to do so, have in the person's possession and produce the registration card referred to in regulation 19(3) for inspection to the engineer, drainage inspector or any staff member of the Council authorised for that purpose.

Prohibition against employment of unregistered persons for drain laying work

24. (1) An owner or occupier of premises may not engage or permit any person to carry out on the premises work referred to in regulation 18(1), unless the person is registered as a drain-layer in terms of regulation 19.

- (2) A person who contravenes subregulation (1) commits an offence.

Issue of duplicate registration card

25. (1) A person whose registration card, referred to in regulation 19(3), is lost, destroyed or damaged may apply to the Council for a duplicate of the card.

(2) An application in terms of subregulation (1) must be accompanied by a statement made under oath or solemn affirmation stating the circumstances in which the registration card was lost, destroyed or damaged, as the case may be, and the fee for the issue of a duplicate registration card.

Fees for registration and renewal

- 26.** The fees payable to the Council for -
- (a) the registration of a person as a drain-layer;
 - (b) the renewal of a registration; or
 - (c) the issue of a duplicate registration card,

are as determined by the Council from time to time in the sewerage tariff.

Responsibilities of registered drain-layer

- 27.** (1) A drain-layer must -
- (a) ensure that work carried out by the drain-layer in relation to a drainage installation or by a person acting under the control of the drain-layer, is performed in conformity with the requirements of these regulations and SANS 10252-2:1993; and
 - (b) certify in a manner approved by the Council that the work referred to in paragraph (a) complies with the requirements of these regulations and SANS 10252-2:1993.
- (2) Not later than 7 days after the completion of any work referred to in subregulation (1)(a), the drain-layer concerned must -
- (a) submit to the Council the certificate referred to in paragraph (b) of that subregulation; and
 - (b) deliver a copy of the certificate to the person on whose instructions the work was carried out.

PART IV REQUIREMENTS FOR DRAINAGE INSTALLATIONS

Standard specifications and codes of practice applicable

28. For the purpose of these regulations the relevant SANS standards and codes are applicable, but the Council may, subject to section 94B of the Act, in writing approve the use of any other specification and codes if it is appropriate to do so, and in considering an application for approval the must be guided by accepted practice and international specifications and codes of practice.

Information and drawings

- 29.** (1) A person may not carry out on premises, work in connection with -
- (a) the construction of a drainage installation; or
 - (b) alterations or extensions to a existing drainage installation,

unless there is submitted to the engineer, by or on behalf of the owner of the premises, drawings of the proposed drainage installation or alterations or extensions complying with subregulations (6), (7), (8) and (9) and the information provided for in Chapter 4 of SANS 10252-2:1993, and the drawings and information have been approved by the engineer.

(2) A complete set of the drawings approved under subregulation (1) must be available at the premises on which work mentioned in that subregulation is being carried out until the certificate of the drain-layer is submitted to the engineer in accordance with regulation 27(2).

(3) If work is carried out in contravention of subregulation (1), the engineer may by notice in writing require the owner of the premises to comply with that subregulation within a period specified in the notice, and from the date of notice -

- (a) work in progress must be discontinued until the approval required by that subregulation is granted; and
- (b) work that does not comply with these regulations must be removed when so directed by the engineer.

(4) If the owner of the premises contemplated in subregulation (3) fails to comply with the terms of a notice issued in terms of that subregulation, the engineer may give effect to the terms of the notice at the cost of the owner.

(5) If the engineer has taken the action contemplated in subregulation (4) the owner of the premises concerned is liable for the costs of expenditure incurred.

(6) An application for the approval of drawings referred to in subregulation (1) must be accompanied by a site plan of the premises, with buildings, plans, elevations and sections indicating clearly the nature and extent of the proposed work, but if the particulars required in terms of subregulation (9) sufficiently appear on the other drawings submitted, a block plan showing the layout of and public sewers on all erven in a block is not required.

(7) Drawings that are required to be submitted to the engineer in terms of this regulation must -

- (a) consist of at least one set of the drawings prepared in durable transparent material or of clearly legible prints on a white background on approved durable material, and such additional paper prints of the drawings as may be required by the engineer;
- (b) be signed by the owner; and
- (c) be of a size not smaller than A4 (297 mm by 240 mm) and not larger than A0 (1189 mm by 841 mm).

(8) In the case of a drain and drainage installation, the plans, elevations and sections of the required drawings must be drawn to a scale not smaller than 1:200, except in the case of site plans, which must be drawn to a scale of 1:200, except in respect of plans that do not fit on an A0 sheet, in which case the plans must be drawn to a scale of 1:500.

(9) The plans, elevations and sections must show -

- (a) the location, size and gradient of a drain and every connecting point to the drain in relation to a datum established on the site and the level of the ground relative to it;
- (b) the location of every point of access to the interior of a drain;

- (c) the location of any overflow or floor drain gully;
 - (d) the location and details of any conservancy tank or any septic tank and absorption fields or a sewage pump;
 - (e) the location and arrangement of every sanitary fixture served by the drainage installation;
 - (f) the location and size of any soil pipe, waste pipe and ventilating pipe or vent valve;
 - (g) the location of a chimney, door, window or other opening to a building, which is within a distance of 6 m from the open end of any ventilating pipe;
 - (h) the floor levels of the building; and
 - (i) the part of an existing drainage installation, to be affected by the proposed work.
- (10) The site plan must show -
- (a) the dimensions of the premises on which the drainage work is to be carried out;
 - (b) the location of buildings on the premises;
 - (c) the location of an existing drain and of the proposed drains on it;
 - (d) the title deed description of the premises and of all pieces of land contiguous to it;
 - (e) the name of every street on which the premises abut; and
 - (f) the direction of true north.

(11) A drain must be designed or constructed in a manner that a part of it does not extend beyond the boundary of the premises it is intended to serve, but if the engineer considers it necessary or expedient to do so, and on proof of the registration of an appropriate servitude or of a notarial deed for a combined private sewer, as the engineer may require, the engineer may permit the owner of any premises to lay a drain at his or her own expense through an adjoining premises.

- (12) The fees payable to the Council -
- (a) for the consideration of a drainage installation plan submitted for approval; or
 - (b) for an inspection by the drainage inspectors under these regulations, testing or re-testing of a drainage installation which the engineer considers necessary before giving approval for it,

are as determined in the schedule of sewerage tariff and are payable in advance before a plan is considered or a test is carried out.

(13) If an application for the approval of drawings referred to in subregulation (1) is refused or withdrawn, the fees paid in respect of it are not refundable, except if the Council in a particular case directs otherwise.

(14) The approval of drawings by the engineer under this regulation lapses if the work to which the drawings relates is not carried out within a period of twelve months or such extension as approved by the engineer, after the approval was granted.

General requirements for design and construction of drainage installations

- 30.** (1) A drainage installation must be designed and constructed in a manner that -
- (a) adequate number of sanitary fixtures are provided in relation to the design population and class of occupancy of a building;
 - (b) the installation is capable of -
 - (i) carrying the design hydraulic load;
 - (ii) discharging into a drain, combined private sewer, connecting sewer, conservancy tank or alternative means of sewage disposal as is permitted in terms of regulation 12(2);
 - (c) components and materials used in the drainage installation are watertight;
 - (d) nuisance or danger to health is not caused as a result of the operation of the drainage installation;
 - (e) a drain in the system is of such strength, having regard to the manner in which it is bedded or supported or protected, that it is capable of sustaining the loads, forces and attack to which it may normally be subjected to;
 - (f) sanitary fixtures are located in a manner that they are easily accessible to the persons they are intended to serve;
 - (g) necessary inspection, cleaning or maintenance of a part of the system is possible to be performed through the means of access provided; and
 - (h) it conforms with the provisions of the town planning scheme in respect of ground water protection areas.
- (2) The requirements of subregulation (1) are considered, until the contrary is proved, to be satisfied, if the drainage installation -
- (a) complies with the provisions of SANS 10252-2:1993 (Drainage installations for buildings); and
 - (b) conforms to the requirements of these regulations and the town planning scheme,

but in the application of paragraphs 4.2.1. and 4.2.2 of SANS 10252-2:1993 relating to the requirements for the class of occupancy of a building and the calculation of the design population, the information specified in Tables 1 and 2 in Annexure A are applicable.

Design of proposed drainage installation

31. (1) If the engineer is of the opinion that the size or complexity of the drainage installation required on premises makes it essential for the installation to be the subject of a detail design, the engineer may require from the owner or the occupier that the installation be designed by an engineer registered under the laws relating to engineers, and to submit for approval, plans and particulars of the sewerage system based on the design.

(2) A detail design required in terms of subregulation (1) must comply with the requirements of these regulations and the requirements of Chapters 2, 3, 4, 5, 6 and 7 of SANS 10252-2:1993, but -

- (a) the engineer may permit any combination of drainage systems if, in the engineer's opinion, the result of the combination is an adequately ventilated drainage installation and the effective protection of the water seals of all traps connected to the drainage installation;
- (b) chimney or flume may not be connected to a drain, soil pipe or waste pipe;
- (c) the shape and dimensions of recess in a structure within which a part of a drainage installation is made and the arrangement of pipes and other fittings in it, must be such to allow adequate entry for purposes of renewal, replacement, maintenance or repair of the installation or pipes or fittings, and such recess must be adequately ventilated if provided with a cover or covers;
- (d) an enclosed shaft or duct containing a part of a drainage installation, must -
 - (i) have a minimum cross-sectional area of 1,5 square metres and a minimum width of 1 metre;
 - (ii) be ventilated to such degree that individuals can safely work inside the shaft or duct without having to use artificial respiratory devices;
 - (iii) be provided with means of access to its interior adequate for inspections and repairs to be carried out,

but the engineer may permit the use of an unventilated shaft or duct with a smaller cross-sectional area and width in a case where the whole of the interior of every soil pipe and waste pipe contained in it is readily accessible for the purpose of cleaning, maintenance and replacement;

- (e) unless permitted by the engineer in writing on good cause shown a pipe, bend or junction forming part of a drainage installation serving premises of more than two storeys may not, from a date following 12 months from the date of commencement of these regulations, be exposed to view from the outside of the premises;
- (f) rodding eyes must be provided on all private sewers and drains up to a depth of 1,5 metre below the ground level, but the engineer may permit manholes when reasonably required;
- (g) rodding eyes must be adequately marked and be protected against damage to the satisfaction of the engineer;
- (h) manholes must be provided with step irons if the manhole is deeper than 1 meter, and the chamber of a manhole must be of adequate size to allow the entry of a person for the purpose of obtaining access to a drain, but the dimensions of it may not be less than -
 - (i) in the case of a chamber with a depth not exceeding 750 mm, a length of 600 mm and a width of 450 mm, or an internal diameter of 600 mm in the case of a circular chamber;
 - (ii) in the case of a chamber with a depth exceeding 750 mm but not exceeding 2000 mm, a length of 900 mm and a width of 600 mm or an internal diameter of 900 mm in the case of a circular chamber;
 - (iii) in the case of a chamber with a depth exceeding 2000 mm, a length of 1 200 mm and a width of 900 mm or an internal diameter of 1200 mm in the case of a circular chamber;

- (i) an effluent emanating from a garage, restaurant or industrial kitchen or an industrial effluent containing grease, fat, other organic or inorganic matter in suspension exceeding the maximum standards as stipulated in Annexure C must, before it is allowed to enter any sewer, be passed through one or more tanks or chambers conforming to the requirements specified in paragraphs 5.2.7 and 5.2.8 of SANS 10252-2:1993 and designed to intercept and retain the grease, oil, fat or solid matter;
- (j) sewage containing oil, petrol, grease or a similar substance or liquid which gives off a flammable or noxious vapour at a temperature of 20°C or more, must be intercepted and retained in tanks or chambers in accordance with paragraph 5.2.8 of SANS 10252-2:1993 so as to prevent the entry of it into the public sewer;
- (k) floor drains may be installed within premises equipped with an automatic water sprinkler system, provided the pipe or pipes receiving the discharge from a drain discharges into another gully outside the building, the inlet of which is situated as required in terms of paragraph 6.6.3 of SANS 10252-2:1993;
- (l) only a closed drainage system with closed gullies may be used on the drainage installation, unless the prior written approval of the engineer is obtained to use a system with open gullies or any other system; and
- (m) mechanical waste food disposal unit or garbage grinder or a similar device which may impair the functioning of the public sewer system or sewage works may not be incorporated in or allowed to discharge into a drainage installation.

Materials, fittings and components

32. (1) Only SANS approved materials, fittings and components as listed in Chapter 2 and in Chapter 5 of SANS 10252-2:1993 or similar pipes, joints and fittings approved by the engineer may be used on a drainage installation.

- (2) Despite, subregulation (1) -
 - (a) structured wall pipes according to SANS 1601 may be used; and
 - (b) all sanitary fixtures must comply with the SANS codes referred to in Annexure B.

(3) Despite anything to the contrary contained in these regulations or any relevant SANS standards and codes, the engineer may determine that suppliers must, to the satisfaction of the engineer, supply the latest technologies available in respect of materials, pipes, joints, components and fittings of specified materials and only pipes, joints and fittings of specified materials resistant to or adequately protected against corrosion may be used if the sewage is corrosive or aggressive soil conditions occur in the particular area.

Control of installation and work on drainage installation

33. (1) Subject to subregulation (2), the construction of a drainage installation must be carried out in conformity with -

- (a) the drawings approved in terms of regulation 29 and detail specification procedures for the installation; and
- (b) the requirements of Chapters 6 and 7 of SANS 10252-2:1993.

(2) A drain-layer carrying out or exercising control over the construction of a drainage installation must ensure that -

- (a) a fixed joint is not used in the drainage installation and a caulked joint is not used on any pipe forming part of the drainage installation, except with the approval of the engineer;
- (b) a pad or packing inserted between the base of any water closet pan and the floor is of non-absorbent material;
- (c) solvent cement welded joints are not used on unplasticised polyvinyl chloride (uPVC) pipes forming part of the drainage installation;
- (d) every channel and trap forming part of a urinal or receiving the discharge from a urinal is located in the same room as the urinal and is of approved impervious material with a glazed or smooth finish;
- (e) the flow of water into a flushing cistern is separately controlled by an isolation valve or other approved device, capable of adjusting or stopping the flow of water into the cistern, situated in the same room not more than 1m from the cistern;
- (f) rodding eyes and manholes are constructed in a way that they do not allow the ingress of storm water into the drain;
- (g) if a drain passes under a building, only pipes approved by the engineer are installed;
- (h) the invert of a manhole is formed by semi-circular channels, bedded on and properly benched in cement mortar, trowelled to a smooth finish;
- (i) only closed gullies complying with the relevant SANS specification or a similar approved specification are installed on a drainage installation, unless otherwise approved in writing by the engineer;
- (j) in any room containing a urinal or urinals -
 - (i) surfaces susceptible to fouling are protected with an approved impervious material with a durable glazed or other smooth finish;
 - (ii) the floor of a room or compartment containing a urinal channel slopes towards and drain into the channel, but if the channel is raised above the level of the floor, a platform of at least 400 mm wide is provided and only that platform slopes and drains into the channel;
- (k) if more than eight urinals are directly connected to a soil pipe or drain, the floor of the room or compartment on which the urinals are located are graded and drained to an approved floor gully similarly connected; and
- (l) a shower room or compartment is provided with an impervious floor of durable nature and a trap linked to the drainage installation.

Cleaning, inspection and testing of drainage installation

- 34.** (1) A drainage installation must on its completion -
- (a) be properly cleaned to remove any foreign matter;
 - (b) be inspected by the engineer in the presence of the drain-layer by whom or under whose control it was installed; and

- (c) be tested under pressure for performance,

and for the purposes of the cleaning, inspection or testing, paragraphs 6.8 of SANS 10252-2:1993 are applicable.

(2) The drain-layer must give at least 2 working days' notice to the engineer if an inspection of a drainage installation is to be carried out.

Engineer may require drainage installation to be tested

35. (1) The engineer may by written notice require the owner of premises to employ a drain-layer to test the functioning of the drainage installation on the premises if the installation is suspected to be faulty and if subsequently found to be faulty, and the owner is responsible for the cost of the testing.

(2) A drain-layer carrying out any work referred to in subregulation (1) must comply with regulation 27(2).

Sewage pumps

36. (1) If a part of premises is at such a level in relation to the public sewer that a drainage installation serving that part is not able to discharge into the public sewer by gravitation, the engineer may, subject to this regulation and to such conditions as the engineer may reasonably determine, permit the sewage from the part to be raised by means of a sewage pump to discharge at such point, such level, such pressure and such maximum discharge rate as the engineer may permit.

(2) A person intending to install a sewage pump for the purpose mentioned in subregulation (1), must apply in writing to the engineer for permission to do so and must, together with the application, provide the information required in the form designed by the engineer and must furnish such additional information as the engineer may reasonably require.

(3) The relevant part provided on the form referred to in subregulation (2) must be completed by an engineer, registered under the laws relating to engineers, who is conversant with the technical details of the sewage pump to be used, and the owner or occupier of the premises must sign the undertaking included in the application form.

(4) An application in terms of subregulation (2) must be made in duplicate and be accompanied by drawings prepared in accordance with regulation 29 and must show the location and details of the compartment to contain the sewage pump, the sewage storage tank, the stilling chamber, and the positions of the soil pipes, ventilation pipes, rising main and the connecting gravitation sewer.

(5) If an application in terms of subregulation (2) is granted, it is a condition of the permission that the owner of the premises concerned must provide and install -

- (a) a tank for retaining the sewage to be disposed of by means of the sewage pump, and which must conform to the requirements of subregulation (8);
- (b) unless the engineer permits otherwise in a particular case, two sewage pumps, namely a duty and a standby pump conforming to the requirements of this regulation, must be installed and connected in such a way that the duty pump, subject to subregulation (7), starts functioning automatically and if one pump fails to function the other immediately and automatically begins functioning; and
- (c) a standby power supply for the functioning of the sewage pumps.

- (6) A sewage pump installed for the purpose mentioned in subregulation (1), must -
- (a) have an operational capacity suitable to cope with the hydraulic load and circumstances it is subjected to;
 - (b) be fitted with a discharge pipe, isolating valve and non-return valves located in approved positions; and
 - (c) be so located and operated as not to cause nuisance through noise, odour or otherwise,

and every compartment containing a sewage pump must be provided with adequate apertures for ventilation purposes.

(7) The maximum discharge rate from a sewage pump and the times at which the discharge may take place, must be as permitted by the engineer in writing who may at any time require the owner to provide and install such fittings and regulating devices as may be necessary to ensure that the maximum discharge rate is not exceeded.

(8) The sewage retention tank referred to in subregulation (5)(a) must be a watertight container which -

- (a) except in the case of temporary retention tank for which the engineer may relax certain requirements, is constructed of materials of sufficient strength, durability and corrosion resistance, for the tank to remain in a watertight, serviceable and structurally safe condition for the lifetime of the building it serves;
- (b) has a smooth and impermeable durable inner surface;
- (c) has, below the level of the inlet pipe, a storing capacity -
 - (i) which is sufficient to retain the volume of sewage which is likely to emanate from the part of the building or premises in question over a 24 hour period; or
 - (ii) of at least 900 litres, whichever is the greater quantity; and
- (d) is designed in a manner that the maximum proportion of its sewage content be emptied at each discharge cycle of the sewage pump.

(9) The starting mechanism of a sewage pump installed for the purpose referred to in subregulation (1), must be set to begin pumping operations when the volume of sewage contained in the retention tank is not more than half of its storage capacity, except where the engineer is satisfied that the owner has sufficient pumping systems installed to allow operation at a higher sewage level, and gives permission in writing.

(10) If the engineer in a particular case so requires, a stilling chamber, with a depth of not less than 850 mm must be installed between the outlet of the sewage pump and the connecting sewer.

(11) A sewage retaining tank and a stilling chamber installed in accordance with this regulation must be provided with a ventilating pipe with a diameter of not less than 100 mm in accordance with paragraph 6.4 of SANS 10252-2:1993.

(12) If the permission contemplated in subregulation (1) is granted, the Council is not liable for compensation for injury to life, death or damage to property caused by the use, malfunctioning or other condition arising from the installation or operation of a sewage pump referred to in that subregulation.

Installation of conservancy tanks or septic tanks and absorption fields

37. (1) Except with the prior written permission of the engineer, a person may not install or construct sewerage systems on premises within the local authority area.

(2) The engineer may with due consideration of the conditions prevailing in the particular case grant or refuse an application for permission in terms of subregulation (1).

(3) A conservancy tank, septic tank, absorption field or evapo-transpiration bed installed or constructed in accordance with subregulation (1), must conform to the requirements as set out in Chapter 7 of SANS 10252-2:1993.

(4) The following conditions apply when the engineer has granted permission under subregulation (2) -

- (a) if the Council's removal vehicle are to traverse private property for the purpose of emptying a conservancy tank or septic tank, the owner must -
 - (i) make provision for a driveway to such tank, including a gateway to or in such driveway, of at least 3,5 metre wide and with a surface capable of withstanding an individual axle load of 8 metric tons in any weather condition;
 - (ii) pay the cost as determined in the sewerage tariff, for the service referred to in this subregulation;
- (b) the overflow from a septic tank may be permitted to discharge in an absorption field, in which case proper grease traps must be installed to prevent the blockage of the absorption field;
- (c) before an absorption field is constructed on any premises, percolation tests must be carried out in accordance with paragraph 7.3.2 of SANS 10252-2:1993, to establish whether the soil on the premises is suitable for the location of an absorption field;
- (d) despite paragraph (c), an absorption field may not be constructed unless proof is provided to the engineer that the composition and nature of the strata underlying the absorption field is such that there is no possibility of the groundwater being polluted by the effluent discharged into the absorption field;
- (e) a water tightness test as stipulated in paragraph 7.2.5 of SANS 10252-2:1993 must be carried out on a septic tank and the drain-layer employed to carry out such test must comply with regulation 27(2); and
- (f) septic tanks, conservancy tanks or absorption field disposal systems may not be allowed in the southern part of the local authority area, referred to as ground water conservation zone in the town planning scheme.

(5) The owner or occupier of the premises on which a conservancy tank or septic tank is installed must at all times maintain the tank in good order and condition to the satisfaction of the engineer failing which the engineer may do so at the cost of the owner as stipulated in the sewerage tariff after reasonable notice having been given to the owner.

(6) If the use of a conservancy tank or septic tank on premises is discontinued or if permission for the use is withdrawn, the owner must cause the tank to be removed or to be filled up with soil or other suitable material or to be dealt with in such other manner as the engineer in the

circumstances of the case may direct or permit, failing which the engineer may do so at the cost of the owner cost as stipulated in the sewerage tariff, after reasonable notice having been given to the owner.

Other means of sanitary disposal

38. (1) If waterborne sewage disposal is not available other means of sewage disposal may be permitted by the engineer but in the case of chemical or pail closets satisfactory resources must be available for the removal and disposal of sewage from the closets.

(2) A person may not construct any pit latrine without the permission of the engineer.

(3) Other means of sanitary disposal approved by the engineer under subregulation (1) must -

(a) be constructed and located in a manner as to prevent a causation of any nuisance or any unhygienic or offensive condition;

(b) comply with the requirements of Part Q of SANS 0400, paragraph 7.4 of SANS 10252-2:1993 and any other requirements that the Council may determine in a particular case; and

(c) not pollute groundwater.

PART V

CONTROL OVER DISCHARGE OF SEWAGE, STORM WATER AND DISCHARGES FROM OTHER SOURCES

Sewage and other prohibited discharges not to enter storm water drains or roads

39. (1) A person may not discharge or cause the discharge of sewage, either directly or indirectly, onto a street or premises or into a sewer, storm water drain, river, stream, subsurface or other watercourse, whether natural or artificial.

(2) A person may not discharge or cause the discharge of petroleum products, oil or grease either directly or indirectly, onto a street or premises or into a sewer, storm water drain, river, stream, underground infiltration field or other watercourse, whether natural or artificial.

(3) The owner or occupier of premises on which steam or any liquid, other than potable water, is produced, processed, generated or stored must provide facilities as may be necessary to prevent any discharge, leakage or escape of the liquid onto a street or premises or into a storm water drain or watercourse, but the engineer may, if in the opinion of the engineer circumstances permit, grant permission for the discharge of steam condensate in any such manner and other liquid such as flush water from ion exchange resins and backwash water from activated carbon.

(4) If the application of water onto or flushing by rainwater over an open area on private premises is in the opinion of the engineer likely to cause the discharge of offensive matter into a street gutter, storm water drain, river, stream, underground infiltration field or other watercourse, whether natural or artificial, the engineer may by written notice to the owner or occupier of the premises instruct the owner or occupier to cause such alteration to be made to the drainage installation, or roofing on the area, as the engineer may consider necessary to prevent or minimise the discharge or pollution.

(5) A person commits an offence if that person contravenes or cause the contravention of subregulation (1), (2), (3) or (4), or fails to comply with a notice served on the person in terms of this regulation.

Storm water not to enter sewers

40. (1) Despite regulation 39(4), a person may not cause or permit storm water to enter a drainage installation on premises.

(2) Any part of a drainage installation may not be constructed in a manner to allow storm water to enter the drainage installation.

(3) A pipe, channel or other device used for conducting rainwater from a roof or other surface may not be permitted to discharge into any gully forming part of a drainage installation.

(4) A person who contravenes subregulation (1), (2) or (3) commits an offence.

Discharges from swimming pools, fountains or reservoirs

41. (1) A person may not discharge or cause the discharge of water from a swimming pool, fountain or reservoir to run, either directly or indirectly, into or onto -

(a) a road, gutter, storm water drain or watercourse; or

(b) premises, other than the premises on which the swimming pool, fountain or reservoir is situated.

(2) Discharged water from a swimming pool, fountain or reservoir must be disposed of as specified in the Council's Water Supply Regulations.

(3) A person who contravenes subregulation (1) or (2) commits an offence.

PART IV
INDUSTRIAL EFFLUENT

Permission to discharge industrial effluent

42. (1) Except with the prior written permission of the engineer, a person may not discharge or cause to be discharged into a sewer, industrial effluent or other liquid or substance, other than soil water or grey water.

(2) An application for the engineer's permission under subregulation (1) must be made in the form determined by the Council and the applicant must provide the engineer with such additional information and with such samples of the industrial effluent as the engineer may require in the particular case.

(3) A permit granted under subregulation (2) is valid for a year or such longer period as approved by the engineer.

(4) The engineer may, having regard to the capacity of a public sewer or a sewage pump station used for sewage and the capacity of the sewage works, grant permission for the discharge of industrial effluent from premises into a public sewer, subject to such conditions as the engineer may consider appropriate to impose, including the payment of charges assessed in accordance with the sewerage tariff and further subject to the prohibition of sewage of a quality as stated in regulation 45.

(5) A person, to whom permission has been granted under subregulation (4) to discharge industrial effluent into a public sewer, may not do anything that is likely to result in a change in the quantity or quality or nature of industrial effluent so discharged, unless the approval of the engineer has been obtained in writing and the person has notified the engineer in writing of the date the proposed change takes effect.

(6) A person commits an offence if that person discharges or causes to be discharged into the public sewer, industrial effluent -

- (a) without having first obtained the permission of the engineer under subregulation (1); or
- (b) in a case contemplated in subregulation (5), without complying with that subregulation,

and is, in addition to the penalty which may be imposed for the offence, liable to such charge as the Council may assess for the conveyance and treatment of effluent so discharged and for damage caused as a result of the unauthorised discharge.

(7) Despite subregulation (6), the Council may recover from a person who discharges or causes or permits to be discharged into a public sewer industrial effluent or a substance which is prohibited or restricted in terms of regulation 45(1) or which has been the subject of an order issued in terms of regulation 45(2) costs, expenses or charges incurred or to be incurred by the Council as a result of any of the following:

- (a) injury, illness or death of a person;
- (b) damage to, or blockage or breakdown of -
 - (i) the public sewer;
 - (ii) sewage works or plant;
 - (iii) a sewage pump; or
 - (iv) property, whether under Council's control or not; or
- (c) costs including fines and damages which may be imposed or awarded against the Council, and expense incurred by the Council as a result of any action in terms of the Water Act, 1956 or other applicable law or an action against it consequent on a partial or complete breakdown of sewage works or sewage pump, directly or indirectly, caused by the discharge.

(8) The engineer may from time to time, or at any time as a result of a change in the method of sewage treatment or the introduction of new or revised standards by the engineer or under the Water Act, 1956 or other applicable law, or as a result of an amendment to these regulations or due to any other reason, and after giving reasonable written notice in advance of the engineer's intention to do so -

- (a) review, amend, modify or revoke permission given under subregulation (1) or a conditions attached to the permission;
- (b) impose new conditions for the acceptance of any industrial effluent into the public sewer; or
- (c) prohibit the discharge of any or all of such effluent into the public sewer,

and on the expiration of the period of notice, the previous permission or conditions, as the case may be, ceases to apply and where applicable, the new or amended conditions apply.

Control of industrial effluent

43. (1) The owner or occupier of premises from which industrial effluent is discharged into a public sewer must -

- (a) provide adequate facilities, such as overflow level detection devices, standby equipment, overflow catch-pits or other appropriate means designed for the purpose of and capable of effectively preventing the discharge into the public sewer of a substance prohibited or restricted or having properties outside the limits imposed in terms of these regulations;
- (b) before the industrial effluent is discharged into the public sewer -
 - (i) subject it to pre-treatment that ensures that the effluent is not in contravention of any of the requirements of regulation 45(1); or
 - (ii) modify the effluent cycle of the industrial process in a manner which is in the opinion of the engineer necessary to enable any sewage works receiving the effluent, whether under the control of the engineer or not, to produce treated effluent complying with the national standards under the Water Act, 1956 or any other applicable law or these regulations or as a result of an amendment to these regulations, whichever is the more stringent;
 - (iii) install a separate drainage installation for the conveyance of industrial effluent and to discharge the effluent into the public sewer through a separate connecting sewer provided by the engineer and to refrain from discharging the effluent through a drainage installation intended or used for the conveyance of soil water and grey water or from discharging soil water or grey water through the separate drainage installation provided for industrial effluent; and
 - (iv) despite subparagraph (iii), the engineer may direct or approve in writing that industrial effluent and domestic effluent from a particular premises be discharged through one shared connecting sewer;
- (c) pay in respect of the discharge of industrial effluent into the public sewer such amount as assessed in accordance with the charges determined in the sewerage tariff;
- (d) provide information required by the engineer for the purpose of assessing the charge which is payable.
- (e) have procedures in place for an emergency spill clean up; and
- (f) investigate and implement cleaner production processes and practices that are relevant to the owner's or occupier's operations with a view towards reducing water consumption, chemical usage and emissions related to the process.

(2) The engineer may by notice in writing to the owner or occupier of premises from which industrial effluent is discharged, require the owner or occupier to do all or any of the following:

- (a) to restrict the discharge of the effluent to certain specified off peak periods and the rate of discharge to a specified maximum and to install at the cost of the owner or occupier tanks, appliances or other equipment as in the opinion of the engineer may be necessary or adequate to ensure compliance with the restrictions;

- (b) to construct at the cost of the owner or occupier, in a drainage installation conveying industrial effluent to the public sewer, one or more sampling and metering chambers or a flow equalisation tank of such dimensions and material and in such positions as the engineer may determine; or
 - (c) to provide and maintain at the cost of the owner or occupier, for the purpose of subregulation (1)(d), a meter measuring the quantity of water drawn from a borehole, spring or other natural source of water and used on the property for industrial purposes.
- (3) If a person discharges or attempts or causes to be discharged into a public sewer industrial effluent in contravention of these regulations, the engineer may -
- (a) after notifying the owner or occupier of the premises concerned of the engineer's intention to do so, immediately close and seal off the connecting sewer conveying the effluent to the public sewer for such period as the engineer may consider necessary so as to prevent the effluent from entering the public sewer; and
 - (b) immediately suspend the supply of water to the industrial process.
- (4) The Council is not liable to any person for damage resulting from action taken by the engineer in terms of subregulation (3).
- (5) Except with the written permission of the engineer, a person may not open or break or cause to be opened or broken any seal of connecting sewer closed in terms of subregulation (3)(a).
- (6) If the engineer acts in terms of subregulation (3)(a), the owner or occupier of the premises must immediately provide written proof to the engineer that the industrial effluent emanating from the premises is to be discharged to an alternative disposal site approved by the engineer or if there is no suitably developed site for receiving the effluent, the engineer may immediately order the discontinuation of any operation producing effluent on the premises and act in terms of subregulation (3)(b) until such time that a suitable disposal site had been developed, or the customer proves to engineer that the customer is willing and able to conform with these regulations.

Metering and assessment of industrial effluent

- 44.** (1) The engineer may, in a drainage installation conveying industrial effluent to a public sewer -
- (a) require from the owner or occupier to install, in such position as the engineer may determine, a meter or gauge or other device for the purpose of determining the volume or composition of effluent so conveyed;
 - (b) after consultation with the owner or occupier, establish an alternative method of assessing the quantity of the effluent to be discharged; or
 - (c) if not compliant with paragraph (a) or (b), install and maintain a meter, gauge or device at the expense of the owner of the premises on which it is installed and may recover from the owner or occupier of the premises concerned costs incidental to the installation and maintenance of a meter, gauge or other device so installed or to an alternative method so employed.
- (2) Despite subregulation (1), the engineer may require a person who discharges industrial effluent into a public sewer to provide, install and maintain, at the expense the person, the following -

- (a) separate water supply pipes for water used in an industrial process and water used for other purposes; or
 - (b) in such position or positions as the engineer may determine, one or more meters in the water installation on the premises for the purpose of recording the water consumption in a specific part of, or the whole of the premises.
- (3) If -
- (a) industrial effluent is discharged from premises and the effluent metering devices are defective or if industrial effluent quantity is not assessed by means of the mechanisms of subregulation (1), it is considered that the volume of the industrial effluent discharged from the premises over the period between meter readings, is -
 - (i) the quantity of process water taken in from the main water supply or any other water supply on site for production purposes, less agreed industrial water consumptive use;
 - (ii) the total water intake from the main water supply or any other water supply on site, less agreed total consumptive use; or
 - (iii) 85% of the total water intake from the main water supply or any other water supply on site,

unless proven otherwise by the owner to the satisfaction of the engineer.

- (b) during any period the intake or production water a meter on premises has not been functioning or functioning correctly, the estimated water intake as determined in accordance with the Council's Water Supply Regulations are applicable for the purposes of paragraph (a); and
 - (c) the total of the intake and production water as indicated by the water meters is less than the industrial effluent quantity as indicated by the effluent meter for the same period of time, the value as obtained from the effluent meter must still be used for billing purposes, unless the effluent meter is shown to be defective.
- (4) If a water production meter or effluent meter on premises is shown to be defective, the owner of the meter must repair or replace the meter at the cost of the owner or occupier within the time as determined by the engineer.

(5) The owner or occupier of premises where an effluent meter is installed must at own cost ensure that the meter is calibrated annually in accordance with SANS calibration procedures, or calibration procedures approved by the engineer, and submit the calibration data to the engineer within 30 days of the execution of the calibration test.

(6) An owner or occupier discharging industrial effluent into a public sewer, must test the industrial effluent on a regular schedule as provided for in the permit to discharge industrial effluent and report the results to the engineer.

(7) The engineer may conduct sampling and analysis of industrial effluent at random and the maximum of the values of the different analysis results of composite or grab samples of the effluent taken by the engineer during the relevant month, and as prescribed in terms of the permit to discharge effluent, is used to determine the treatment charge payable, and -

- (a) the frequency of sampling is based on the relative industrial effluent volume, varying from at least once a week for the larger effluent producers to once a month for smaller effluent producers;

- (b) the values obtained by the engineer are considered as correct and used to calculate the treatment and conveyance charge;
- (c) if the engineer takes a sample, one half of it must be made available to the customer, if required at the time when the sample is taken and if the customer does not accept the values obtained from the analysis intended in this paragraph the customer may request further tests at the cost of the customer to be done by a laboratory acceptable to the Council and the customer; and
- (d) if the engineer takes a sample other than a sample under paragraph (c) the sample and its analysis must be taken at the cost of the customer at the charge as determined by the Council.

(8) The Council may determine a rebate to apply to the charges determined in the sewerage tariff if the owner or occupier discharges industrial effluent solely during off-peak periods specified by the Council, or discharge sewage that contains constituents that, by determination of the Council, is beneficial to the drainage system or the sewage works.

- (9) A person commits an offence, if that person -
- (a) opens or damages or in any other manner tampers or interferes with a meter, gauge or other device installed for the purpose mentioned in subregulation (1); or
 - (b) in relation to a drainage installation or any such meter, gauge or other device, does, or causes to be done, anything resulting in or to result in an effluent being discharged without passing through such meter, gauge or other device.

(10) An owner or occupier of premises, who causes any act to be performed by any other person which constitutes an offence in terms of this regulations or who causes an act to be performed by another person knowing that it is prohibited, commits an offence.

Prohibited discharges

45. (1) A person may not discharge or cause the discharge or entry into a sewage disposal system of sewage, industrial effluent or other liquid or substance -

- (a) which in the opinion of the engineer may be offensive to or may cause nuisance to the public;
- (b) which in the opinion of the engineer, may cause harm or damage to any public sewer, sewage pump or sewage works or other equipment;
- (c) which either alone or in combination with any other matter, may generate or constitute a toxic substance dangerous to the health of persons maintaining public sewers or employed at the sewage works or cause water reclaimed from such sewage to be dangerous to the health of persons using the reclaimed water;
- (d) which consists of or contains -
 - (i) a substance likely to produce or give off poisonous or offensive gases or vapours in any drain or public sewer or is explosive or flammable;
 - (ii) oil, grease or fat or a detergent or other material capable of causing an obstruction to the flow in drains or public sewers or an interference with the proper functioning of the biological treatment processes associated with the sewage works;

- (iii) a substance which may be prejudicial to the purification of sewage effluent for the purpose of re-use, or is not amenable to treatment for such purification or may cause a breakdown or inhibition of the biological treatment processes;
 - (iv) a substance which is likely to produce, in the final treated effluent from any sewage works, an undesirable taste after chlorination or an undesirable odour or colour or excessive foam or to prevent such treated effluent from conforming to the requirements which may have been stipulated under the Water Act, 1956 or other applicable law, whichever is more stringent;
 - (v) any substance exceeding the limits specified in Annexure C; or
- (e) which does not comply with regulation 42, 43 and 44.

(2) If the engineer or any other staff member of the Council acting under the control of the engineer, by notice in writing to a person orders the person to discontinue the discharge into the public sewer of an effluent or substance, which in the opinion of the engineer or the staff member is being so discharged contrary to subregulation (1), the person must immediately take such steps as may be necessary to cease the discharge.

(3) If a person fails to comply with a notice under subregulation (2), and in the opinion of the engineer the discharge is likely to have an adverse effect on the efficient functioning of any sewerage works, the engineer may by further written notice to the person, refuse to permit the discharge by the person of industrial effluent into the public sewer, or discontinue the supply of water used for non-domestic purposes to the premises until the person has, to the satisfaction of the engineer taken the measures necessary to remove the cause of the complaint and to ensure that the industrial effluent conforms to the requirements of these regulations.

(4) If a person fails to comply with this Part, the engineer may withdraw, suspend or cancel a permit issued under this Part.

PART VII GENERAL PROVISIONS

Levying of sewerage charges in respect of occupied premises not provided with sanitary facilities

46. If persons occupying or frequenting premises or a building which is not provided with a drainage installation or is not connected to the public sewer and is not provided with an alternative means of sewage disposal as contemplated in regulation 38, make use of the sanitary facilities provided on or in any other premises or building which is connected to the public sewer, other than on a temporary basis while the drainage installation of the first-mentioned premises or building is out of order or being repaired, the owner of the first-mentioned premises or building is liable to pay to the Council the charges determined in the sewerage tariff for the provision of a sewerage service as if the premises or building in question had been connected to the Council's sewer.

General rules regarding the levying of charges

47. (1) If a charge determined in the sewerage tariff in respect of a category of premises is based on the number of persons occupying or otherwise using the premises, the Council may at any time request the owner or other person having the charge and management of the premises to furnish the Council with a return on the number of persons occupying or otherwise using the premises or who have over a specified period occupied or used the premises.

(2) If a person who, in terms of subregulation (1), is required to furnish the Council with a return referred to in that subregulation or with any other information required by the Council for

the purpose of assessing the charges payable to the Council, fails to comply with the request within 30 days after receipt of it, the person must pay to the Council such charges as may be assessed by the Council on the best information available to it, despite the Council's power to levy and recover any additional charges which may be determined to be payable when further information becomes available to the Council.

(3) The charges payable in terms of the sewerage tariff for the disposal of sewage and effluent from swimming pools, fountains and reservoirs, in relation to any building which is unoccupied or has been or is being demolished, remain payable until the date on which the Council is requested to disconnect the premises from the public sewer.

(4) If, by reason of any change occurring in the nature of occupancy or use of any premises, the application of a different rate of charges under the sewerage tariff is required, the Council is not required to give effect to any claim for the adjustment of an account provided by the Council or to make a refund of any moneys paid, unless at least 30 days' notice in writing of the change has been given to the Council.

(5) The charge -

- (a) determined for commercial premises not producing industrial effluents is based on a percentage of the monthly water consumption; and
- (b) for industrial effluent is for any month, or such other time interval as laid down by Council, and based on the quality of industrial effluent discharged or on the quantity of effluent discharged, where quantity and quality is measured as specified in these regulations, and where the rates and calculation procedures are as specified in the sewerage tariff.

(6) If, in respect of premises the engineer, having regard to its size, the number of water supply points and the complexity of the water reticulation, considers it impractical to determine the quantity of water discharged into the public sewer from records of metered water consumption, the engineer may -

- (a) direct that the water reticulation system be altered at the cost of the owner to facilitate the separate metering of water that after use is to be discharged into the public sewer, and water to be consumed and not be so discharged; or
- (b) assess the quantity of water discharged into the sewer in any meter-reading period in accordance with the quantity of water used on premises of a similar nature as determined by the engineer,

unless proven otherwise by the owner or occupier to the satisfaction of the engineer.

Classification of effluent

48. (1) If potable water is blended in with any type of effluent as categorised in these regulations, the category of effluent remains unchanged.

(2) If these regulations are contravened by allowing storm water into a drainage installation or downstream sewer or if the storm water inadvertently infiltrates a drainage installation or downstream sewer, the storm water for the purpose of these regulations becomes sewage.

General rules regarding charges for sanitary services

49. The following conditions are applicable in connection with the charges payable for the provision of a sanitary service provided in terms of a sewerage service application as approved under regulation 3 or a sewerage service contract:

- (a) a deposit as determined by the Council in the sewerage tariff is payable in respect of the provision of sanitary services before the service is started;
- (b) night soil removal services are to be provided at intervals as the engineer may determine in each case; and
- (c) the charges for night soil removal are based on the number of pails removed or the volume removed from a tank, as the case may be.

Special agreements

50. (1) If, by reason of the category of use for which a sewerage service is required by a person, the nature or situation of the premises concerned or the method of provision of a sewerage service, the Council considers it desirable that the supply be provided subject to special conditions or a special charge, the Council may, despite anything to the contrary contained in these regulations, enter into a special agreement with the consumer on the terms and conditions as may mutually be agreed on.

(2) Subject to the Act, a special agreement contemplated in subregulation (1) may provide for any one or more of the following matters:

- (a) the provision of a sewerage service outside an approved township;
- (b) the sharing of common facilities by users;
- (c) the provision of an alternative means of disposal as contemplated in regulation 38; and
- (d) the charges leviable for the provision of the sewerage service.

Use of grey water for irrigation of gardens

51. (1) Despite anything to the contrary contained in these regulations, the Council may upon application made to it by the owner or occupier of residential premises grant permission to the owner or occupier to use, subject to this regulation and such conditions as the Council may impose in writing, grey water emanating from the premises for the exclusive purpose of irrigating gardens on the premises.

(2) The following conditions apply in respect of the use of grey water for the purpose mentioned in subregulation (1):

- (a) grey water, other than that emanating from showers and baths or emanating from the rinsing of laundry, whether by means of a washing machine or otherwise (such as grey water), may not be diverted for such use;
- (b) reduction in the charges payable in terms of the sewerage tariff is not allowed in respect of grey water so used;
- (c) tank or other receptacle used for storing of grey water may not in any way be connected to a part of the water installation on the premises;
- (d) a system used for irrigation by means of grey water may not be connected to the water installation in any way; and
- (e) if grey water is diverted from an existing trap or gully at least one sanitary fitting must be left to discharge water into the trap or gully.

(3) The installation of a system for the purpose of irrigation by means of grey water in terms of subregulation (1) is for the purposes of these regulations considered to be a change in the drainage installation and the provisions of the regulation in relation to the obtaining of approval must be complied with.

(4) A person who uses grey water without the permission of the Council commits an offence.

Use of reclaimed water from industrial activities

52. (1) Except with the prior written permission of the engineer, a sewage treatment system owner may not release any reclaimed water for re-use by the owner or any other person.

(2) An application for the permission of the engineer under subregulation (1) must be made in the form determined by the Council and an applicant must provide the engineer with such additional information and with such samples of the treated sewage or reclaimed water as the engineer may require in the particular case.

(3) Except for use of reclaimed water already authorised by permit by the engineer, a sewage treatment system owner may not release reclaimed water for use until the engineer has approved a reclaimed water use plan in writing.

(4) If the conditions of engineer require limitations and conditions that are different or more stringent than conditions in existing permits, the existing permit limitations and conditions apply until such time as the engineer considers appropriate to change the permit limitations and conditions through permit modification or renewal.

(5) The engineer may include permit limitations or other permit conditions additional to those stated in the Water Act, 1956 or other applicable law as the minimum standards of effluent quality, if the engineer determines or has reason to believe that the reclaimed water may contain physical or chemical contaminants that is likely to impose potential hazards to public health or the environment or cause detrimental effects on an allowed use.

(6) Customers may cascade intake water through multiple levels of use before discharging the final effluent as sewage, subject to conditions regarding the permitted use of water, prohibited discharges, and other relevant regulations being complied with.

(7) In cases where chlorine or chlorine compounds are used as the disinfecting agent, the engineer may specify in the permit a minimum chlorine residual concentration to be met at all times, and in cases where other disinfecting agents are used, the engineer may require other additional monitoring requirements that assures adequate disinfection at the point of use.

(8) Reclaimed water from sewage treatment systems is considered adequately treated and disinfected if, at the end of the treatment process, the minimum standards of effluent quality as stated under the Water Act, 1956 or other applicable law are complied with.

(9) The sampling point for monitoring compliance with water quality limitations contemplated in subregulation (8) must be specified in the permit.

(10) Distribution network carrying water or effluent that has been taken off, or derived from the potable water network may not be cross-connected to the potable water network.

(11) The engineer may consider the effects of blending reclaimed water with other waters if proposed by the owner of a sewage treatment system.

(12) In cases where blending of reclaimed water is provided, the sewage treatment system owner must submit to engineer, at a minimum, a plan of operation, a description of any additional treatment process, blending volumes, and a range of final quality at the point of use.

(13) There must be no connection between any potable water supply system and the distribution system carrying reclaimed water.

(14) The sewage treatment system owner is responsible and liable to the Council for complying with the requirements of these conditions and the sewage treatment system owner's permit for any and all water that passes through the owner's treatment plant.

(15) Excess reclaimed water not used by the owner concerned must be discharged into the public sewer, as if sewage, and under the governing conditions stated in these regulations.

(16) A person may not bypass untreated or inadequately treated water from the sewage treatment system or from an intermediate unit processes to the point of use.

(17) Reclaimed water may not be used if any of the treatment unit processes are not functioning.

(18) Reclaimed water may not be irrigated, or discharged onto land in areas that are in proclaimed groundwater protection zones or pollution susceptible areas.

(19) Permission granted under subregulation (1) is not transferable.

(20) New owners have a grace period of 12 months to apply for a permit, provided that the conditions of the last permit is being complied with.

(21) A person contravening any of this regulation or a condition of a permit issued under this regulation commits an offence.

Interference with sewers, drainage installations or water sewage works

53. (1) A person may not -

- (a) break into, enter or in any other manner interfere with any sewer, trap, screen, manhole, inspection chamber, pump station or other work or any part of any drainage installation, but this prohibition does not apply to alterations to a drainage installation undertaken by a drain-layer carrying out work in accordance with plans approved by the engineer or to maintenance work carried out on a drainage installation;
- (b) place, or discharge through soil water, grey water or sewage, any solid material or obstruction in any sewer; or
- (c) enter or loiter on the premises of sewage works without the approval of the engineer or contravene a condition subject to which the approval has been granted.

(2) A person who contravenes any of this regulation commits an offence.

Pipes in streets and public places

54. (1) Except with the prior written approval of the engineer, a person may not, for the purpose of sewage disposal, lay or construct any drain or associated component on, in or under a street or public place or any other land vesting in or under the control of the engineer.

(2) A person to whom the Council has granted its approval under subregulation (1) may carry out the work in question subject to such conditions as may have been imposed by the engineer.

(3) A person who contravenes subregulation (1) or a condition imposed under subregulation (2) commits an offence.

Obstruction of access to connecting sewer on premises

55. (1) A person may not prevent or restrict access to a part of a connecting sewer on premises.

(2) If a person contravenes subregulation (1), the engineer may -

(a) by written notice require the person to restore access at the persons expense within a specified period; or

(b) if the engineer is of the opinion that the situation is a matter of urgency, without prior notice restore the access and recover the cost from the person.

(3) A person who refuses or fails to comply with a notice of the engineer under subregulation (2)(a) commits an offence.

Access and notices

56. (1) For the purpose of enforcing these regulations a staff member authorised for that purpose by the Council may perform the duties or exercise the powers given or conferred under section 91 of the Act.

(2) A notice, instruction or document to be served or given under these regulations must be served or given in accordance with section 93 of the Act.

Inspections

57. If the engineer or drainage inspector or a staff member of the Council authorised for that purpose carries out an inspection at premises to ascertain whether a contravention of these regulations of which the owner or occupier has previously been notified, has been remedied, the owner or occupier is liable for payment of a fee determined by the Council.

Penalties

58. A person convicted of an offence under these regulations is liable to a fine not exceeding N\$2000 or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

Savings

59. Despite the repeal of regulations in these regulations, a tariff list or other provisions contained in the repealed regulations prescribing charges, fees and other moneys payable in respect of the rendering of sewerage and drainage and other related services remain in force until repealed or replaced by charges fees and other moneys determined by the Council under section 30(1)(u) of the Act.

ANNEXURE A
(Regulation 30(2))

Classification of buildings for occupancy

A building is classified and designated according to the occupancy class given in Column 1 of Table 1 below and such classification represents the primary function of such building. Where in any building there are two or more areas that are not having the same primary function, the occupancy of each such area must be separately classified.

The population of any building, or part thereof, must be taken as the actual population of such building, or part building where such population is known or, where such population is not known, the population must be calculated on the basis of the criteria given in Table 2 below. However, in the case of any building, or part thereof being classified as having an F1 occupancy and the total floor area is more than 500 m², that portion of the floor area that is in excess of 500 m² is, for the purposes of calculation of the population, to be reduced by an amount of 20%.

TABLE 1 – OCCUPANCY OR BUILDING CLASSIFICATION

1	2
Class of occupancy or building	Occupancy
A1	Entertainment and public assembly Occupancy where persons gather to eat, drink, dance or participate in other recreation.
A2	Theatrical and indoor sport Occupancy where persons gather for the viewing of theatrical, operatic, orchestral, choral, cinematographical or sport performances.
A3	Places of instruction Occupancy where school children, students or other persons assemble for the purpose of tuition or learning.
A4	Worship Occupancy where persons assemble for the purpose of worshipping.
A5	Outdoor sport Occupancy where persons view outdoor sports events.

1	2
Class of occupancy or building	Occupancy
B1 B2 B3	<p>High risk commercial service Occupancy where a non-industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with extreme rapidity or give rise to poisonous fumes, or cause explosions.</p> <p>Moderate risk commercial service Occupancy where a non-industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with moderate rapidity but is not likely to give rise to poisonous fumes, or cause explosions.</p> <p>Low risk commercial service Occupancy where a non-industrial process is carried out and where neither the material handled nor the process carried out falls into the high or moderate risk category.</p>
C1 C2	<p>Exhibition hall Occupancy where goods are displayed primarily for viewing by the public.</p> <p>Museum Occupancy comprising a museum, art gallery or library.</p>
D1 D2	<p>High risk industrial Occupancy where an industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with extreme rapidity or give rise to poisonous fumes, or cause explosions.</p> <p>Moderate risk industrial Occupancy where an industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with moderate rapidity but is not likely to give rise to poisonous fumes, or cause explosions.</p>
D3 D4	<p>Low risk industrial Occupancy where an industrial process is carried out and where neither the material handled nor the process carried out falls into the high or moderate risk category.</p> <p>Plant room Occupancy comprising usually unattended mechanical or electrical services necessary for the running of a building.</p>
E1 E2 E3	<p>Place of detention Occupancy where people are detained for punitive or corrective reasons or because of their mental condition.</p> <p>Hospital Occupancy where people are cared for or treated because of physical or mental disabilities and where they are generally bed-ridden.</p> <p>Other institutional (residential) Occupancy where groups of people who either are not fully fit, or who are restricted in their movements or their ability to make decisions, reside and are cared for.</p>

1	2
Class of occupancy or building	Occupancy
F1	Large shop
	Occupancy where merchandise is displayed and offered for sale to the public and the floor area exceeds 250 m ² .
F2	Small shop
	Occupancy where merchandise is displayed and offered for sale to the public and the floor area does not exceed 250 m ² .
F3	Wholesalers' store
	Occupancy where goods are displayed and stored and where only a limited selected group of persons is present at any one time.
G1	Offices
	Occupancy comprising offices, banks, consulting rooms and other similar usage.
H1	Hotel
	Occupancy where persons rent furnished rooms, not being dwelling units.
H2	Dormitory
	Occupancy where groups of people are accommodated in one room.
H3	Domestic residence
	Occupancy consisting of two or more dwelling units on a single site.
H4	Dwelling house
	Occupancy consisting of a dwelling unit on its own site, including a garage and other domestic outbuildings, if any.
J1	High risk storage
	Occupancy where material is stored and where the stored material is liable, in the event of fire, to cause combustion with extreme rapidity or give rise to poisonous fumes, or cause explosions.
J2	Moderate risk storage
	Occupancy where material is stored and where the stored material is liable, in the event of fire, to cause combustion with moderate rapidity but is not likely to give rise to poisonous fumes, or cause explosions.
J3	Low risk storage
	Occupancy where the material stored does not fall into the high or moderate risk category.
J4	Parking garage
	Occupancy used for storing or parking of more than 10 motor vehicles.

TABLE 2 – DESIGN POPULATION

1	2
Class of occupancy of room or storey or portion thereof	Population
A1, A2, A4, A5	Number of fixed seats or 1 person per m ² if there are no fixed seats
E1, E3, H1, H3	2 persons per bedroom
G1	1 person per 15 m ²
J1, J2, J3, J4	1 person per 50 m ²
C1, E2, F1, F2	1 person per 10 m ²
B1, B2, B3, D1, D2, D3	1 person per 15 m ²
C2, F3	1 person per 20 m ²
A3, H2	1 person per 5 m ²

ANNEXURE B
(Regulation 32(2)(b))

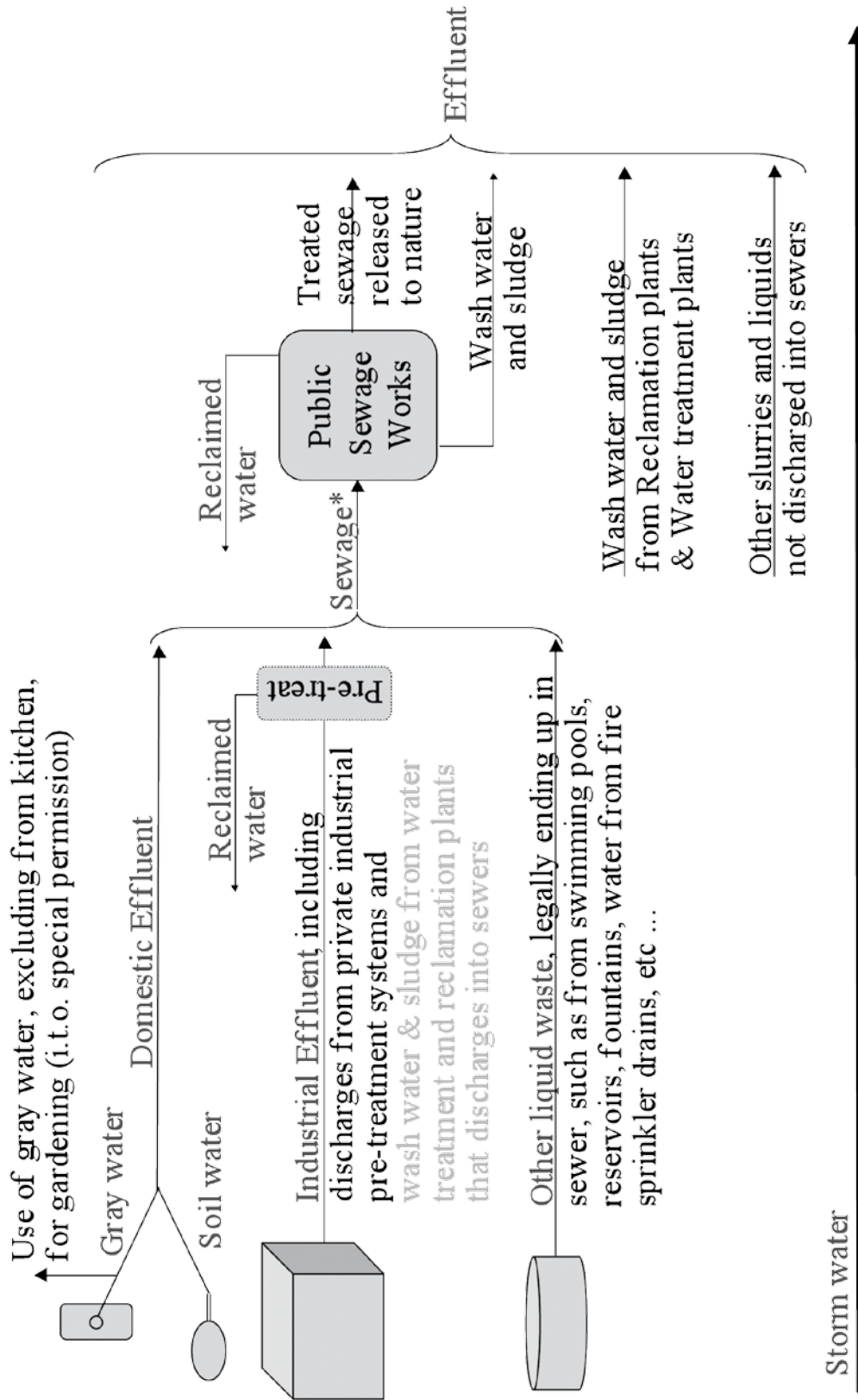
Sanitary fixtures and SANS specification

Item	SANS Standard Specification
Automatic shut-off flush valves for water closets and urinals	SANS 1240:2006
Flush valves for WC flushing cisterns	SANS 1509:2002

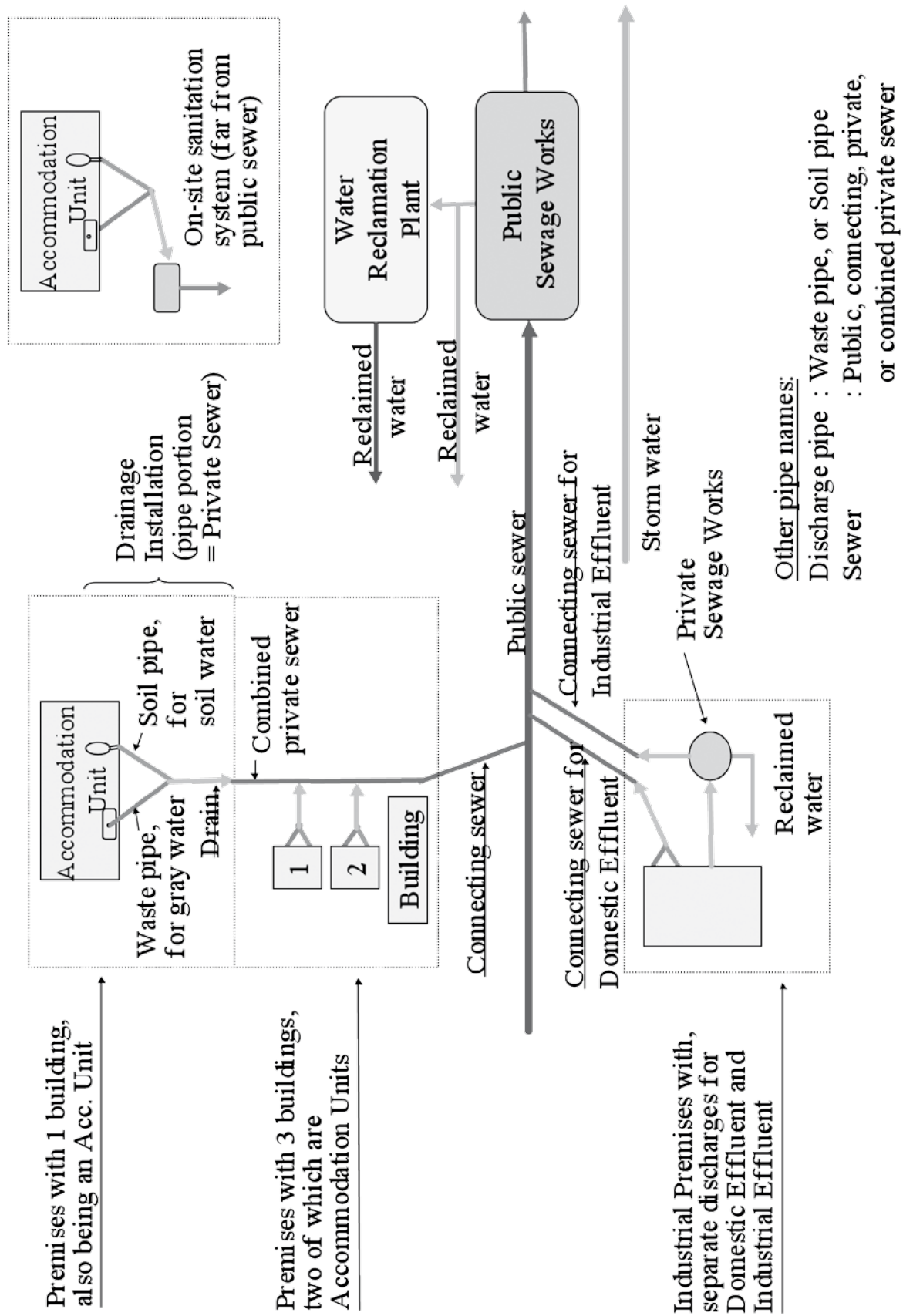
but, only water closet pans made of glazed ceramic, stainless steel or other approved material having in every case a glazing or smooth finish are to be approved by the Council.

- (c) Flushing cisterns or flushing valves for water closets, must discharge -
 - (i) in the case of a single flush unit, not more than 6 litres of water during one complete flush; or
 - (ii) in the case of a dual flush unit, not more than 6 litres of water during one complete flush when the full-flush lever is actuated, and not more than 3 litres of water during one complete flush when the low-flush lever is actuated;
- (d) Flushing cisterns or flushing valves for urinals must discharge at each flush not less than 1 litre or more than 2 litres of water for each urinal installed or for every 600 mm of the length of trough urinal.
- (e) Flushing valves and cisterns may only be user-activated

ANNEXURE C
EXPLANATORY DIAGRAM OF TYPES OF EFFLUENT



* Sewage include stormwater that may infiltrate inadvertently



ANNEXURE D
INDUSTRIAL EFFLUENT CONVEYANCE AND TREATMENT CHARGES
(Regulations 42, 43, 44, 45, 47, 48)
Calculation of Charges

A General

- (a) These provisions apply with regard to and for purposes of calculating the conveyance and treatment charge provided for in regulations 42, 43, 44, 45, 47 and 48.
- (b) The occupier of any premises from which industrial effluent is discharged into the public sewer, must, without prejudice to any other charges leviable under the Sewerage Tariff, pay to the Council an industrial effluent charge, including any minimum charge, in accordance with the formulae, principles and rates specified in **B** to **C** below.
- (c) The industrial effluent volumes to be used in the charge calculation procedures set out below are to be determined in accordance with regulation 44.
- (d) The industrial effluent quality parameters and values to be used in the charge calculation procedures set out below are to be determined in accordance with regulation 44 and as further stipulated in **C** and **D** below.

B

1) Charge for the conveyance of industrial effluents

The cost for conveying industrial effluents is based on the volume of industrial effluent, the area of the industrial premises, the cost of capital redemption, and the specific overhead costs pertaining to the conveyance system. The charge in N\$ can be calculated with the following formula:

Conveyance Tarrif: L1

$$L_1 = \frac{A_i}{12A_t} R_n + \frac{Q_i}{Q_t} (R_m + R_{rs})$$

A_i = Area of specific industrial premises

R_n = Annual loan redemption on sewer network

A_t = Total area served by sewerage network

Q_i = Industrial effluent generated on specific premises (m³/month)

Q_t = Total effluent treated at WWTP (m³/annum)

R_m = Annual loan redemption on outfall sewer

R_{rs} = Annual overhead cost (manpower, pumping, maintenance, etc.)

The values for the following items must be updated by the City of Windhoek on an annual basis:
 A_t ; Q_t ; R_n ; R_m ; R_{rs} .

2) Charge for the treatment of industrial effluents, L

The treatment charge for industrial effluents is based on the capital cost redemption and the specific overhead costs. The treatment charge must be calculated by the following formula:

$$L_2 = (R_p + R_{rt}) \frac{Q_i}{Q_t} \left[a \left(\frac{COD_i}{COD_t} \right) + b \left(\frac{Ni}{Nt} \right) + c \left(\frac{Pi}{Pt} \right) + d \left(\frac{Ssi}{SSt} \right) \right]$$

Where,

L_2	= Levy for the Treatment Costs	(N\$)
Q_i	= Calculated or measured industrial effluent flow originating from the relevant premises	(m ³ / month)
Q_t	= Annual total sewage inflow to the appropriate wastewater treatment plant	(m ³ /annum)
R_p	= Annual loan redemption on sewage treatment works	(N\$/a)
R_{rt}	= Annual overhead and running cost on the sewage treatment plants, including personnel cost, pumping, maintenance and laboratory costs etc.	(N\$/a)
COD_i	Average chemical oxygen demand (COD) concentration of the settled sample originating from the relevant premises, as determined for the relevant month	(mg/l)
N_i	Average ammonium concentration of the sample originating from the relevant premises, as determined for the relevant month	(mg/l)
P_i	Average ortho-phosphate concentration of the sample originating from the relevant premises, as determined for the relevant month	(mg/l)
S_{si}	Average suspended solids concentration originating from the relevant premises, as determined for the relative month	(mg/l)
COD_t	Annual average chemical oxygen demand (COD) concentration of the settled sewage in the total inflow to the appropriate wastewater treatment plant	(mg/l)
N_t	Annual average ammonium concentration of the settled sewage in the total inflow to the appropriate wastewater treatment plant	(mg/l)
P_t	Annual average ortho-phosphate concentration of the settled sewage in the total inflow to the appropriate wastewater treatment plant	(mg/l)
SS_t	Annual average suspended solids concentration of the wastewater in the total inflow to the wastewater treatment works	(mg/l)
a	Portion of the costs directly related to the removal of chemical oxygen demand	
b	Portion of the costs directly related to the removal of ammonium	
c	Portion of the costs directly related to the removal of o-Phosphate	
d	Portion of the costs directly related to the removal and treatment of suspended solids	

The values for the following items must be updated by the City of Windhoek on an annual basis:

R_p ; R_{rt} ; COD_t ; N_t ; P_t ; SS_t ; and

a = 0.6
 b = 0.15
 c = 0.1
 d = 0.15

Unless determined otherwise by the engineer.

The total charge for conveyance and treatment of normal industrial effluent is the sum of L_1 and L_2 .

C Penalty for exceeding Limits on the concentration of some physical and chemical pollutants – Industries draining to Ujams Water Care Works.

An additional tariff is payable with respect to industrial effluents exceeding the minimum and/or maximum concentration of the measured items listed below. The specific charge for each item is different and depends on its relative effect on the wastewater treatment process as well as the subsequent reclaim potential of the treated wastewater. The formula used for calculating a specific penalty charge as per the formula set out hereunder.

$$L_3 = \frac{Q_i \cdot (\text{UnitCost}) \cdot (P_i - \text{Limit}_i)}{\text{BaseUnit}_i}$$

Base Unit - determines how much the concentration of a particular pollutant is exceeding the predetermined concentration limit or range. The base unit is used to adjust the charge for a specific pollutant.

Unit Cost – disincentive cost unit is a unit cost that applies to each base unit that a specific pollutant is exceeding a specific concentration limit or range. This disincentive cost unit is used to adjust the charge for all selected pollutants.

P_i – is the average parameter concentration of the sample originating from the relevant premises, as determined for the relevant month measured.

Limit_i – is the Limit/Standard for the different parameters as determined for the different Municipal Treatment Works as per Limit/Standards tables hereunder.

Incentive discount rate determination for the treatability of certain qualifying industrial effluents.

Treatability of industrial effluents based on TKN:COD ratio

Meaning	TKN/COD range:		%Discount
	Min	Max	
Excellent	0.000	0.029	α
Good	0.040	0.059	β
Average	0.060	0.089	0
Poor	0.090	0.120	0
Very Poor	> 0.12		

The values of α and β are reviewed and updated by the City of Windhoek at own discretion.

Limits on the concentration of some physical and chemical pollutants – Industries draining to Ujams Treatment Plant.

Parameter	Range & Limits		Base Value	Unit
	Min.	Max.		
PHYSICAL				
pH	6	10.5	3	pH unit
Electrical Conductivity (EC) at 20 °C		500	30	mS/m
Suspended Solids (SS)		1000	500	mgSS/l
INORGANIC (NON-METALLIC)				
Cyanide (CN)		20	20	mgCN/l
Sulphides as (S)		50	50	mgSH-S/l
Sulphate as (SO ₄)		150	80	mgSO ₄ /l
Total alkalinity as (CaCO ₃)		2000	1500	mg/l asCaCO ₃
METALS (Group 1)				
Cadmium as (Cd)		20	20	mgCd/l
Chromium as (CrO ₃)		20	20	mgCrO ₃ /l
Cobalt as (Co)		20	20	mgCo/l
Copper as (Cu)		20	20	mgCu/l
Iron as (Fe)		50	50	mgFe/l
Manganese as (Mn)		20	20	mgMn/l
Nickel as (Ni)		20	20	mgNi/l
Zinc (Zn)		20	20	mgZn/l
Total metals (Excluding Iron and Sodium)		50	50	Tot.Metals1/l
METALS (Group 2)				
Arsenic as (As)		5	5	mgAs/l
Lead as (Pb)		5	5	mgPb/l
Mercury as (Hg)		5	5	mgHg/l
Selenium as (Se)		5	5	mgSe/l
Total metals (Group 2)		20	20	Tot.Metals2/l
IMPORTANT BIOLOGIC TREATMENT POLLUTANTS				
Chemical Oxygen Demand (COD)		5000	5000	mgCOD/l
Total Kjeldahl Nitrogen as (N)		120	120	mgN/l
Total Phosphate as P		35	35	mgP/l
Anionic surface active agents		500	500	mgASAA/l
Fats, Oil & Grease		2000	2000	mg/l
Formaldehyde as (HCHO)		50	50	mgHCHO/l
Phenol		5	5	mgPhenol/l

Limits on the concentration of some physical and chemical pollutants – Industries draining to Gammams Water Care Works.

Parameter	Range & Limits		Base Values	Unit
	Min.	Max.		
PHYSICAL				
pH	6.5	9.5	3	pH unit
Electrical Conductivity (EC) at 20 °C		80	30	mS/m
Suspended Solids (SS)		200	500	mgSS/l

INORGANIC (NON-METALLIC)				
Bromine		0.5		mgBr/l
Cyanide (CN)		0.2	20	mgCN/l
Flouride		2		mgF/l
Sulphides as (S)		25	50	mgSH-S/l
Sulphate as (SO ₄)		100 above influent	80	mgSO ₄ /l
Free Chlorine as (Cl ₂)		1		mgOCl/l
Total alkalinity as (CaCO ₃)		500	1500	mg/l asCaCO ₃
METALS (Group 1)				
Cadmium as (Cd)		0.5	20	mgCd/l
Chromium as (CrO ₃)		0.5	20	mgCrO ₃ /l
Cobalt as (Co)		0.5	20	mgCo/l
Copper as (Cu)		1	20	mgCu/l
Boron		0.5	50	mgB/l
Iron as (Fe)		10	20	mgFe/l
Manganese as (Mn)		5	20	mgMn/l
Nickel as (Ni)		4	20	mgNi/l
Zinc (Zn)		5	50	mgZn/l
Total metals (Excluding Iron and Sodium)		20	50	Tot.Metals1/l
METALS (Group 2)				
Arsenic as (As)		0.25	5	mgAs/l
Lead as (Pb)		2	5	mgPb/l
Mercury as (Hg)		0.005	5	mgHg/l
Selenium as (Se)		0.5	5	mgSe/l
Silver		0.1		mgAg/l
Total metals (Group 2)		10	20	Tot.Metals2/l
IMPORTANT BIOLOGIC TREATMENT POLLUTANTS				
Chemical Oxygen Demand (COD)		900	500	mgCOD/l
Total Kjeldahl Nitrogen as (N)		100	120	mgN/l
Total Phosphate as P		10	35	mgP/l
Anionic surface active agents		300	500	mgASAA/l
Fats, Oil & Grease		500	2000	mg/l
Formaldehyde as (HCHO)		10	50	mgHCHO/l
Phenol		5	5	mgPhenol/l

D Radio-active pollutants

The Council reserves the right to limit or prohibit the total mass of any radioactive substance discharged within 24 hours into the sewers from any premises.