F. No. 4/3/2007/UD/13393.—The following Bye-laws made by the New Delhi Municipal Council under Chapter XXI read with Part 'B' of sub-section (1) of section 388 of the New Delhi Municipal Council Act 1994 (Act. No. 44 of 1994), after previous publication and with the prior approval of the Government of National Capital Territory of Delhi, in pursuance of provisions of section 391 of the said Act, are hereby published as under:-

"The New Delhi Municipal Council (Drainage) Bye-laws, 2012

1. **Short title and commencement.**— (1) These Bye-laws may be called "The New Delhi Municipal Council (Drainage) Bye- Laws, 2012".

(2) These Bye-laws shall come into force on the date of their publication in the Official Gazette.

2. **Definitions.**--- (1) In these Bye-laws, unless the context otherwise requires:--

(a) "anti-syphonage" means a device to preserve the water seal in traps by providing ventilation;

(b) "cesspool" includes a septic tank, a settlement tank or other tank for the reception of disposal of foul matter from a premises;

(c) "Chairperson" includes any municipal officer or other municipal employee as may be authorized by him in this behalf;

(d) "combined system of drainage" means a system in which foul water and surface water are conveyed by the same sewers and drains;

(e) "connection" means the junction of a foul water drain, surface water drain or sewer from buildings or with a public sewer;

(f) "drop connection" means a branch of drain of which the last length of piping of the incoming drain before connection to the sewer is vertical;

(g) "drop manhole" means a manhole incorporating a vertical drop for the purpose of connecting a sewer or drain at high level to one at a lower level;

(h) "form" means a form appended to these bye-laws;

(i) "interceptor manhole or interceptor chamber" means a manhole incorporating an intercepting trap, and providing means of access thereto and equipped with a fresh air inlet on the upstream side of the trap and a vent column on the down-stream side;

(j) "invert" means the lowest point of the interior of a sewer or drain at any cross-section. In a manhole chamber, the channel in the floor of the chamber which carries the flow of the sewage through the manhole;

(k) "manhole" means an opening by which a man may enter or leave a sewer or other closed structure for inspection, cleaning and other maintenance operations, fitted with a suitable cover;

(l) "partially separated system of drainage" include a modification of the separate system in which part of the surface water is conveyed by the foul sewers and drains;

(m) "privy" means a place set apart from defecating or urinating or both, together with the structure comprising such place, the receptacle therein for human excreta and the fittings and apparatus, if any, connected therewith and includes a closet of the dry type and acquex Privy, a latrine and a urinal;

(n) "rodding eye" means an access opening having a removable cover to enable obstructions to be cleared by means of a drain rod;

(o) "saidle" means a purpose made fitting, so shaped as to fit over a hole cut in a sewer or drain, and used to form connection;

(p) "separate system of drainage: means a system in which the foul water and surface water are conveying in separate sewers and drains;

(q) "service latrine" and service urinal" means respectively a latrine and urinal cleaned by hand;

(r) "sewers" means conduits or any device provided for the purposes of carrying the liquid wastes of the community otherwise known as sewage or sullage;

(s) "soakage pit" means a pit suitably prepared to receive surface water for seepage into surrounding ground;

(t) "soil waste" means the discharge from water closets, urinals, slop sinks, stable or cowshed gullies and similar appliances;

(u) "soil pipe" means a pipe which receives the discharge from soil fitments such as water closets, urinals, shop sinks, etc;

(v) "storm water drain" means any open channel or conduit whether within private premises or public and reserved exclusively for conveyance of rain water;

(w) "sub-soil water drain" means pipe or other means for removing the water lying in the soil below ground level;

(x) "surface water drain" means a drain conveying surface water including storm;

(y) "trade effluent" means the discharge, other than sewage, soil or waste, from any manufacturing process;

(z) "vent" means a pipe line installed to provide flow of air to or from a drainage system or to provide circulation of air within such system to protect trap seals from syphonage and back flow;

(aa) "ventilating pipe" means a pipe which provides a safe outlet into the atmosphere for the foul gases in the drain or sewer;

(bb) "waste water (sullage)" means used waste from bath, wash basins, sinks and similar appliances which does not contain human or animal excreta;

(cc) "water closet" means a closet which has a separate fixed receptacle connected to a drainage system and separate provision of flushing from supplying of clean water either by the operation of a mechanism or by automatic action, and includes a room or compartment fitted with an appliance for receiving liquid and solid human waste which is cleaned by water flush.

(2) In these bye-laws, wherever reference is made to other standard specifications, this shall cover all subsequent amendment thereto.

3. **Powers of the Chairperson.**--- The Chairperson shall be the judge of the adequacy of the means taken to comply with any of these bye-laws and of the suitability of the materials, the design and the quality of the workmanship. He may in suitable cases allow by orders in writing the use of materials other than those specified, if he considers such materials, equally suitable and efficient.

NOTICE AND SUBMISSION OF PLANS

4. **Intention to construct.**--- Every person who intends or is required to lay-out, construct or alter the pipes drains or other means of communication with, any sewer, or the traps or apparatus connected therewith shall, before commencing any such work, comply with the requirements of bye-laws 5 to 9.

5. **Notice of intention to construct.**--- (1) Notice in writing of such intention shall be delivered at the Council's office in duplicate in form 'A' attached, copies of which may be obtained free of charge at the Council's office.

(2) Such notice shall bear the full name and address of the applicant and shall state the street and assessment number of the premises upon which such works are intended to be executed and all the particulars required in the printed form 'A' of notice.

6. **Deposit of plans.**— (1) With the notice referred to in bye-law 5 shall be deposited plans and sections (in triplicate) clearly and indelibly made on a durable material and drawn to a scale of not less than 1 cm. to 2 metre, and the vertical scale of the sections shall be the same as the scale of the plans.

(2) The plan shall be prepared by a registered architect, engineer, draftsman or a licensed plumber and signed by him and by the applicant and shall show the following:--

(a) every floor of any building in connection with which the pipes or drains are to be used;

(b) the position, forms, levels, and arrangement of the several parts of such building including the roof thereof;

(c) the whole of the intended new drains with their proposed sizes and gradients in figures;

(d) the levels of the ground surface and depths of the proposed drains; and

(e) the position of every manhole, gully, soil pipe, ventilating pipe, rain water pipe, water closet, urinal, latrine, bath, lavatory, sink, trap or other appliances on the premises proposed to be connected with any drain and in a distinctive colour in respect of drains, etc., mentioned in paragraphs (c) and (d) above.

This information shall be shown complete both on elevations and sections as well as on plans.

Provided always that in the case of an alteration or addition to an existing building the conditions shall be deemed to be satisfied if the plans convey sufficient information for the proposals to be readily identified with the original or subsequent sanctioned plans.

(3) The plans shall also show:

(a) The position of all windows and other openings in the building;

(b) The height and position of all chimneys belonging to the building within a distance of 5 metre from the open end of a soil pipe or ventilating pipe;

(c) The scale to which the plan is drawn;

(d) In detail, the nature of all sanitary connections including the manner of disposal of rain water and its discharge to the storm water drains; and

(e) The disposal of bath room and kitchen sullage and connections to the waste and soil pipes and the nature of the connection of the soil pipe to the sewer with a suitable intercepting chamber, when such chamber has been required by the Chairperson by a general or special order.

7. **Block plan of the premises.---** (1) With the notice referred to in bye-law 5 shall be deposited a block plan of the premises (in triplicate) upon which the building is to be situated or any such work is to be carried out, drawn to a scale of not less than 1 cm. to every 100 cm.

(2) The block plan of the premises shall show:--

(a) The block plan of the building and the position of all other buildings on the premises and such parts of the adjoining buildings as may be affected by the proposed work;

(b) The names of streets adjoining the premises;

(c) The lines, size and inclination of all drains and surface drains, if any;

(d) The difference in level between the lowest floor of the building and of any court-yard and of the adjoining ground;

(e) The scale of the plan; and

(f) The drains and other appliances shown by distinctive colours.

Provided that it shall not be necessary to deposit a block plan in any case where the particulars required to be shown on the block plan are shown on the detailed plan hereinbefore required.

8. **Cross-sections when to be provided.---** If considered necessary in any case by the Chairperson, the plan shall be accompanied with cross sections, with dimensions shown in figures and drawn to a scale of not less than 1 cm. to 50 cm. of all open drains, showing the ground level and the kerbs or other means, already existing or proposed, for exclusion of all storm water, except the first washing from court-yards and paved open spaces.

9. **Description of works proposed.---** With the plan referred to in bye-law 7 shall be deposited a detailed description (in triplicate) of the intended mode of constructing, joining or fixing any such drains, manhole, gully, pipe, water closet, urinal, bath, lavatory basin or apparatus or trap. This shall be done in form "B" copies of which may be obtained free of charge at the Council's office.

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10. **Commencement of work.---** After the plans have been sanctioned by the Chairperson one copy thereof shall be returned to the applicant and the work may then be proceeded with.

11. **Notice of covering up drains or other drainage works.---** Every person who constructs or alters any drain or other drainage work shall, before proceeding to cover up any foundations, drains, or appliances connected with the drainage, give to the Chairperson, notice in writing that such foundations, drains or appliances are ready for inspection and specify the date and hour on which he will proceed to cover up such foundations, drains or appliances. Such notice shall be in form "C".

12. **Notice of completion of work.---**Every person who constructs, or alters any drain, or other drainage work, shall give the Chairperson notice in writing, specifying the date and hour at which such drains or works will be ready for final inspection. Such notice shall be in form "D".

13. **Connection with municipal sewer.---** (1) No connection of any drain to any municipal sewer or any drain to any existing private drain already connected to a municipal sewer shall be made until a certificate has been issued by the Chairperson that the whole of such drain and the appliances connected therewith comply with all the requirements of these bye-laws.

(2) Such connection shall be made by a duly authorized officer of the Council or at the discretion of the Chairperson by a licensed plumber under the supervision of an authorized municipal employee and the application for the connection shall be accompanied by a copy of the said certificate and the deposit, before the connection is made of such of money as the Chairperson may prescribe from time to time to meet the cost of the connection.

14. **Inspection by the officers authorized by Chairperson.---** (1) Every person by or for whom any drain or other work connected therewith is laid out, constructed, fixed or altered, shall, at all reasonable times, afford any duly authorized officer of the Council free access to such drain or work for the purpose of inspection. The Chairperson shall ensure that the basic requirements for the bye-laws are carried out, but no such close supervision can be given as to relieve the house owner or his plumber of the duty of taking due care in the execution of the work and providing good and sufficient material and workmanship.

(2) In emergent cases in which an alteration of the drains or other appliances must be carried out at once, the owners and occupiers of the premise may, get in touch with the Chairperson who may, in urgent and suitable cases, issue necessary directions. This, however, does not relieve the owner of his obligation to take steps for filing plans, etc., with the Chairperson and obtaining the sanction.

15. **Drainage of buildings.**--- Proper provision shall be made for the drainage of buildings and of all premises. Rain water shall be dealt with separately from sewage and sullage, in such areas of New Delhi where the separate system of drainage prevails. Sewage and sullage shall be discharged by pipes with the exception that sullage may be discharged by a surface drain which should be as short as possible if the Chairperson considers discharge by pipes to be impracticable.

16. **Drainage of courtyard.**--- The drainage of an inner courtyard shall be discharged to the sewer or the storm water drain as the case may be. All other courtyards must be provided with one or more outlets through which rain water may pass to the drainage system.

Explanation--- (a) An inner courtyard means a courtyard in which all its sides are bounded by rooms or verandahs or by dividing walls of the next house and includes courtyard on the first and higher floors of buildings.

(b) An outer courtyard is a courtyard in which one at least of the walls faces out into the open.

17. **Level of lowest storey.**--- The lowest storey of every new building shall be constructed at such level as will allow of the construction of a drain sufficient for the effectual drainage of the building and of the provision of the requisite communication with any sewer into which such drain may lawfully empty. The level at which the incoming drain enters the sewer must be such that no invert connection shall be made.

HOUSE DRAINS

18. **Materials.**--- (1) All material used in the construction of any of the works or any of the appliances described in these bye-laws shall conform to be the latest edition of the relevant Bureau of Indian Standards, where available, in so far as these standards are applicable. Where no such standards exist, the materials shall be of the best quality and workmanship.

(2) Concrete is a mixture of hard stone aggregate of suitable sizes ranging from 20mm to 40mm nominal size and cement mortar as may be specified according to the nature of the work. No lime shall be used for a structure coming into contact with structures pertaining to sewage works.

(3) The mortar for concrete shall be mixed in the proportion of 1 (One) part of cement to 3 (Three) parts of sand by volume.

19. **Internal diameter of drain.---** Every drain shall have an internal diameter of not less than 150 mm and not more than such size as may be necessary for the flow or as may be approved by the Chairperson.

20. **Drains to be laid in concrete.---** Except in the case of firm soil, every drain shall be laid on a bed of good concrete not less than 150mm thick and of a minimum width equal to the width of the external diameter of the collar or socket. Where there is the possibility of vehicular traffic passing over the drain, the concrete bed should extend on each side of the drain 150 mm or the external diameter of the pipe whichever is more and it must be hunched upto the top of the pipe. In made up, wet or boggy soil, the pipe must be completely surrounded in concrete not less than 150 mm thick measure radially.

21. **Gradients.---** (1) The gradients shall be such as to secure a self cleaning velocity of 0.90 metre to 1.05 metre per second the pipes flowing half full. The following gradients are recommended:

150 mm diameter pipe 1 in 60 to 1 in 80.

200 mm diameter pipe 1 in 80 to 1 in 120.

(2) For velocities higher than 1.50 metre per second due to very sharp gradients, cast iron pipes should be used.

22. **Joining of pipes.---** Every joint in a drain shall be made in the manner and with joining materials hereinafter prescribed, so as to preserve the continuity of the drain without obstruction.

(1) If a drain is constructed in stoneware pipes or material other than metal, the drain shall be jointed with socket joints properly put together with cement or other equally suitable material approved by the Chairperson. If cement is used it shall be 2 parts of Portland cement mixed with 7 parts of clean sharp sand.

(2) All spigot and socket pipes shall be laid with the spigot end of each

pipe in the direction of the flow of sewage and such pipes shall be laid by the spigot end of each pipe being placed in the socket of the pipe last laid.

(3) Joints shall be made by forcing a ring of gaskin not more than 15 mm in depth, which has been steeped in bitumen well into the base of the socket, so as to bring the spigot end concentric with the socket and its invert flush with the invert of the pipe last laid, and to prevent the passage of bitumen into the bore of pipe. The mortar is to be forced into the joint until the whole space between the spigot and socket is quite full, the joint is then to be finished off with a neat fillet. After laying, the inside of each pipe is to be carefully cleaned and examined to see that no mortar is left inside and the surfaces of the jointed pipes are flush all the way round. Provided always that it shall be sufficient if the pipes are connected in a manner considered by the Chairperson to be equally suitable and efficient.

(4) If a drain be constructed of cast iron socketed pipes, the joint shall be made with a gaskin of hemp or yarn and metallic lead, properly caulked . The depth of gaskin and of lead will be as prescribed below:

Size of pipe	Caulking space	Depth of lead	Weight of lead	Weight of yarn
(mm.)	(mm.)	(mm.)	(kilogram)	(gram)
80 mm.	10 mm.	45 mm.	1.82 kg.	135 gm.
100 mm.	10 mm.	45 mm.	2.16 kg.	170 gm.
150 mm.	10 mm.	45 mm.	3.06 kg.	340 gm.

(5) If a drain be constructed of flanged pipes, the joints shall be securely bolted together with rubber or other suitable insertion, as prescribed in the relevant specifications.

(6) All pipes shall be skillfully jointed and any projecting material or irregularity inside the drain shall be carefully removed.

23. **Drains to be water-tight.**--- (1) Every drain shall be so constructed as to be water tight and to be capable to resisting a pressure of at least 1.20 metre head of water above the highest pipe.

(2) No drain shall be covered up until it has been tested in the presence of the Chairperson, and passed by the Chairperson. A record of the passing of a drain shall be given to the registered plumber.

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24. **Excavations.---** All excavations shall be properly timbered where necessary.

25. **Bedding of pipes.---** (1) All underground drains constructed of cast iron pipes shall be securely bedded on firm ground and filled round with selected material free from large stones, watered and well rammed into place.

(2) where such drains traverse soft or yielding ground or where water makes its appearance in the trench such drains shall be embedded in or completely surrounded with cement concrete, as may be ordered by the Chairperson.

26. **Drains under buildings.---** No drain shall pass beneath any part of a building except with the permission of the Chairperson. In such cases a heavy cast iron pipe with caulked lead joints shall be provided. Cast iron pipes shall be of minimum 150mm. diameter or as decided by the Chairperson. The drain pipes shall be laid in a straight line for the whole distance beneath the building and a manhole shall be provided at each end of the drain. In case the pipe or any part of it is laid above the natural surface of the ground, it must be supported on masonry concrete supports and the bottom of which goes at least 150 mm. below the ground surface.

27. **Drains below walls to be protected.---** Any drain or sewer laid beneath the wall by means of an arch, flagstone or iron support, which shall not bear on the drain or sewer, and shall be of sufficient size and strength to prevent any disturbance of or other injury to such drain or sewer.

28. **No right angled junction in drains.---** The drains of a building communicating with a sewer shall be constructed in such a manner as not to form any right angled junction, either vertical or horizontal. All drain junctions shall be curved obliquely in the direction of the sewage flow.

MANHOLES (INSPECTION CHAMBERS)

29. **Intercepting sewer trap.---** Unless otherwise required by the Chairperson, at the connection between the house drain laid in the street by the Council at the expense of the owner and the pipe laid by the owner, an inspection chamber shall be constructed fitted with a 150 mm. diameter stoneware intercepting sewer trap having a water seal not less than 50 mm. and with a 75 mm. vent pipe with the open end of the pipe placed above the roof so as to comply with the conditions set out in the bye-laws relating to ventilators.

30. Provision of manholes or inspection chambers.--- (1) At every change of alignment, gradient or diameter of a drain, there shall be a manhole or an inspection chamber shall be constructed of brick work laid on cement concrete and be internally plastered with 15 mm. coat of cement and sand (1 cement: 2 sand). In the chamber, a channel with a half round inert either of stone ware or of cement concrete mix 1:2:4 (1 cement : 2 course sand : 4 graded stone aggregate 20 mm. nominal size) with cement plastered and neat punning mortar shall be formed of the width and the full depth of the pipe drain. The walls shall be brought up to the surface of the ground and covered with a cast iron air-tight cover and frame. Bends and junctions in the drains shall be grouped in the manholes as far as possible. The maximum distance between the manholes shall be 20 metre.

(2) All angles in manholes or inspection chambers shall be rounded off when rendering in cement plaster15 mm. thick (1 cement : 2 washed sand) trowelled to a smooth finish.

(3) The benching at the sides shall be carried up in such a manner as to provide no lodgment for any splashings in case of accidental flooding of the chamber.

(4) Where the diameter of a drain is increased, the tops of the pipes must be fixed at the same level and the necessary slope given in the invert of the manhole chamber.

(5) Where two drains at different levels are to meet in a manhole, and where the difference in levels of the inverts exceeds 0.60 metre the connection from the upper to the lower shall be made by a back-drop.

31. Size of chambers.--- (1) Chambers shall be of such size as allow necessary examination and /or clearance of drains. The minimum internal sizes of chambers shall be as follows:

(a) Manhole depth of 75 cms. or less → 70 cms. x 70 cms.

(b) Manhole depths between 75 cms. to 1.50 metre → 0.90 metre x 0.80 metre

(c) Manhole depth between 1.50 mtr-2.10 metre → a conical or domical manhole of internal diameter of 1.22. metre at bottom and tapering to 560 mm. at the top.

(d) Manhole depths more than 2.10 metre → a conical or domical manhole of internal diameter 1.52 metre at bottom and tapering to 560 mm diameter at the top.

(2) Foot rests shall be provided in all manholes over 1.20 metre in depth, and shall be of malleable cast iron and of dimensions approved by the Chairperson.

32. **Manhole covers.**--- (1) Manhole covers and their frames shall be of steel fibre reinforced concrete or reinforced cement concrete and to a design approved by the Chairperson. The size shall be such that there will be a clear opening of at least 500 mm diameter for manholes exceeding 0.90 metre in depth or in the case of square or rectangular covers a clear width of at least 0.45 metre Covers shall be airtight, grease sealed and fitted with a lip into a groove of the frame and shall fit properly and bed evenly without rocking in their frames.

(2) The following are the minimum weights, including frames, for the sizes of the covers given:

(a) For public streets and private roads and road berms 500 mm. in diameter.

(b) Within compounds and buildings:
600 mm. x 450 mm.

33. **Manholes to be water tight.**--- All manholes (or inspection chambers) are to be constructed so as to be water-tight under test. The test will consist in filling the body of the manhole (as distinct from the shaft) with water. The water will remain in the manhole with a fall not exceeding 25 mm. for at least 3 hours, and after that period the brickwork will be examined for water tightness.

34. **Inlets to drain within the buildings.**--- (1) No inlet to a drain, other than a drain for the conveyance solely of trade effluent, shall be made within a building, except:

(i) a trapped gully fitted with a suitable cover;

(j) an inlet, which is a necessary part of any W.C. Pan, bath, sink, urinal bidet or lavatory basin;

(k) a junction with another drain.

(2) Except where the Chairperson is satisfied that it is impracticable, no manholes shall be permitted under covered area.

SOIL AND WASTE PIPES

35. **Size of soil pipes.**--- A soil pipe conveying to a drain any solid or liquid filth, shall be circular and shall have an internal diameter of not less than 100 mm.

36. **Soil pipes to be outside the building.**--- Except where the Chairperson is satisfied that it is impracticable, the soil pipes shall be situated outside the building or in suitably designed pipe shafts and shall be continued upwards without diminution of its diameter, and (except where this is similarly unavoidable) without any bend or angle, to such a height and position as to afford by means of its open end a safe outlet for foul air. The position of and covering to the open end shall be such as to comply with the conditions set out in the bye-laws relating to ventilation of drains. Pipes laid in external chases are outside the building. Where pipe shafts are provided, the cross-sectional area shall be such as to allow free and unhampered access to the pipes to be installed in the shaft and in no case shall the cross section be less than 0.90 metre x 0.90 metre All pipes shafts shall be provided with an access door at ground floor level and facilities for ventilation.

37. **Soil pipe connections.**--- Soil pipes, whether inside or outside the building shall not be connected with any rain water pipe or with the waste pipe of any bath, sink or hand basin, and there shall not be any trap in such soil pipe or between it and any drain with which it is connected.

38. **Materials for soil pipes.**--- (1) Soil pipes shall be constructed in drawn lead, asbestos cement or cast iron confirming to latest edition of the relevant Indian standard Specifications.

Provided that where it is necessary to construct the soil pipe within a building, it shall be constructed in drawn lead with proper wiped plumbers joints, or in cast iron to appropriate Indian standard Specifications with molten lead joints, properly caulked in visible positions and so as to be easily accessible and shall not be constructed in asbestos cement, soil, waste or vent pipes laid in chases in walls other than in the outer face of external walls should be regarded as being laid within the building.

(2) Joints in cast iron soil pipes outside the building shall be made air tight by a ring of hemp gasket and with a mixture composed of cement, boiled linseed oil and chopped hemp.

39. **Colour painting.**--- When soil pipes are to be painted in colour other than black, the pipes shall be treated in the following manner:

1st Operation—The pipes and fittings shall be treated with two coats of "Knotting varnish" the second coat being applied after first has thoroughly dried.

2nd Operation--- Over the undercoat primer of "knotting varnish", white zinc paint treated with the required shade or pigment shall be applied.

40. **Supports for soil pipes.**--- The soil pipe shall be strongly supported at the foot upon a bed of concrete and firmly attached to the walls. The soil pipe shall be fixed at least 25 mm. clear of the finished surface of the wall, and only holder-bats of approved type shall be used. Nail fixing is prohibited.

41. **Waste pipes.**--- (1) Every pipe in a building for carrying off the waste or overflow water from every bath, lavatory, basin or sink to a drain shall be 32 mm. to 50mm. internal diameter, and shall be trapped immediately beneath such lavatory, basin or sink by an efficient siphon trap with adequate means for inspection and cleansing and shall be ventilated into the external air whenever such ventilation may be necessary to preserve the seal of the trap. Such pipes, traps, etc, shall be constructed of iron, lead, stoneware, asbestos-cement or such other suitable material as shall be approved by the Chairperson. No trap of the kind known as a bell trap, a tube trap, or a D trap shall be constructed or fixed in the waste pipe of a lavatory basin or sink.

(2) If lead pipes are used, they shall be of uniform thickness throughout and shall weigh at least 4.0Kg./meter for 40 mm. dia pipe 5.0 Kg/metre for 50 mm. pipes.

(3) If cast iron pipes are used, they shall comply with the relevant Bureau of Indian Standards code for cast iron spigot and for socket and ventilating pipes.

(4) If galvanized pipes are used these shall be of the grade known in the trade as heavy quality.

(5) If asbestos-cement pipes are used they shall comply with relevant Bureau of Indian Standards code.

42. **Waste pipes to discharge into the open air.**--- Every pipe in a building for carrying off waste water to a drain shall be taken through an external wall of the building by the shortest practicable line and shall discharge into a tapped gully. The waste pipe shall be continued upwards without any diminution in its diameter and (except when unavoidable) without any bend or angle to such a height and position as to afford by means of the open end of the

waste pipe, a safe outlet for foul air, the position of and covering to the open end being such as to comply with the conditions set out in the bye-laws relating to ventilation. All down-take pipes for water shall be of cast iron 75 mm in diameter.

43. **Overflow pipes.---** The overflow pipes from any cistern shall be taken through an external wall of the building and shall discharge into the open air in an exposed and conspicuous position so as not to cause dampness. The overflow pipe shall be rendered mosquito proof by a device which does not interfere with its function. The device adopted must be approved by the Chairperson.

44. **Supports for waste pipes.---** The waste pipe shall be firmly attached to, but at least 25 mm. clear of the walls and properly fixed holder-bats shall be used; provided always that it shall be sufficient if the pipes are secured to the walls in a manner considered by the Chairperson to be equally suitable and efficient.

SOIL PIPE, WASTE PIPE AND VETILATING PIPE CONNECITONS

45. **Pipe and joints to be air tight.---** (1) All soil pipes, waste pipes, ventilating pipes and all other pipes when above ground , shall be proved gas tight in the presence of the Chairperson, by smoke produced and applied as directed by the Chairperson.

(2) It shall be a condition of the license of the every licensed plumber to possess a smoke testing machine, which will be indelibly stamped with a number of the Council, which will maintain a record of such numbers.

46. **Lead and iron connections.---** Where any lead waste pipe, ventilating pipe or trap is connected with an iron pipe or drain communicating with a sewer, there shall be inserted between such waste pipe and such iron pipe or drain a flanged thimble of copper or brass, which shall be connected to such lead waste pipe by means of a wiped joint. The thimble shall be connected with such iron pipe or drain by means of a joint made with molten lead, properly caulked, a sufficient quantity of lead being melted at a time to finish each joint at one pouring.

47. **Stoneware and lead pipe connections.---** Where any stone ware or semi vitrified ware trap or pipe is connected with a lead soil pipe waste pipe or trap communicating with a sewer, there shall be inserted between such stone ware or semi vitrified ware trap or pipe and such lead soil pipe, waste pipe or

trap, a socket of copper, cast brass or other suitable alloy, which shall be connected with such stoneware or semi-vitrified ware trap or pipe by means of a joint made with cement mortar consisting of one part of Portland cement and three parts of sharp sand and with the lead soil pipe, waste pipe or trap by means of wiped metallic joint.

48. **Cast iron and stoneware pipe connections.---** Where any cast iron soil pipe, waste pipe, ventilating pipe or trap is connected with a stoneware or semi-vitrified ware trap or drain communicating with a sewer, the beaded spigot end of such iron soil pipe, ventilating pipe, waste pipe, or trap shall be inserted into a socket of such stoneware or semi-vitrified ware pipe or drain and the joint made with mortar consisting of one part of Portland cement and three parts of clean sharp sand. Where any W.C. pan or earthenware trap connected to such pan is to be jointed with a cast iron pipe, the joint between the stoneware spigot and the cast iron socket must always be of a flexible (non-rigid) nature. Such joints are to be made with a mixture of bitumen and chopped asbestos fibre (not dust) or cement putty, i.e. a mixture of cement, chopped hemp with double boiled linseed oil.

VENTILATION OF DRAINS

49. **Ventilating opening in drains---** The drain intended for carrying foul water from a building shall be provided with a Cast Iron or G.I. vent pipe of not less than the specified size at the following points:

(a) A vent pipe of 75 mm. diameter or of equivalent sectional area, at the intercepting sewer trap chamber where the house drain joins the municipal sewer.

(b) A vent pipe of 75 mm. diameter or of equivalent sectional area, at the head of every pipe drain.

The vents should be raised to the height specified in bye-law 51.

50. **Position of open end of vent shaft or pipe.---** Each such opening shall be obtained by carrying up vertically from the drain a pipe or vent shaft to such a height and in such a position as to afford by means of the open end of such pipe or vent shaft a safe outlet for foul air, and as to create the least possible nuisance.

51. **Ventilating pipes.---**(1) The drain intended for carrying foul water from a building shall be provided with at least one ventilating pipe situated as near

as practicable to the building and as far away as possible from the point at which the drain empties into the sewer or other carrier.

(2) The ventilating pipe or shaft shall be carried to a height of at least 60 cm. above the outer covering of the roof of the building or in the case of the window in a gable wall or a dormer window it shall be carried up to the ridge of the roof or at least 2 m. above the top of the window.

(3) In the case of a flat roof to which access is provided it shall be carried upto a height of at least 1.20 metre above the parapet and not less than 2.0 metre above the head of any window within a horizontal distance of 3.0 metre from the vent pipe and in no case shall it be carried to a height less than 3 metre above plinth level.

(4) In case the adjacent building is taller, the ventilating pipe shall be carried higher than the roof of the adjacent building, wherever it is possible.

52. **Openings to be protected by gratings or covers.**--- (1) Any opening provided in accordance with any of the arrangements hereinbefore specified shall be furnished with suitable grating, cowls, wire dome, or other suitable cover for the purpose of preventing any obstruction in or injury to, any pipe or drain by the introduction of any substance through the opening.

(2) Such grating or cover shall be so constructed and fitted as to secure the free passage of air through the grating or cover by means of a suitable number of apertures, of which the aggregate extent shall be not less than the sectional area of the pipe or vent shaft to which the grating or cover may be fitted.

53. **No bends or angle in pipes.**--- Except where unavoidable, no bends or angles shall be made in any pipe or vent shaft used in connection with any of the arrangements hereinbefore specified.

54. **Size of ventilating pipes.**--- Every pipe or vent shaft that may be used for ventilating purposes shall have a minimum diameter of 75 mm. or an equivalent sectional area.

55. **Where separate vent pipe not required.**--- The provision of a separate vent pipe at the head of a drain may not be required in case a soil pipe is provided at the head and same is carried to the height as specified under Bye-law 51.

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56. **Material for vent pipe or shaft.---** Every pipe or vent shaft used in connection with any of the arrangements specified hereinbefore shall be of cast iron or galvanized iron. The topmost piece of such pipe or vent shaft may however be of mild steel boiler tubes.

57. **Ventilation of water closet trap-provision against antisyphonage.----** In every case where there is a tier of water closets one above another, a 50 mm. antisyphon pipe shall be taken from each water closet trap except that of the highest water closet and carried above the roof and to such a height as is specified in bye-law 51. This will not apply to a water closet on the ground floor connected independently (i.e. not through the common soil pipe) to the house drain. The antisyphon pipe shall be connected with the trap at a point not less than 75 mm and not more than 300 mm. from the highest part of the trap and on the side of the water seal which is nearer to the soil pipe.

OPEN DRAINS

58. **Construction of open drains and surface channels.---** (1) In no instance shall a drain interior to a building for the conveyance of the house sullage to the street sewer be an open drain. All open drains or surface channels shall be constructed either of cement concrete mix(1 cement:2 coarse sand : 4 graded stone aggregate 20 mm. nominalised) neatly finished properly formed to the shape of the channels and plastered with cement mortar or with half round glazed stoneware socketed channels for the inverts laid on a bed of fine cement extending in depth from the top of channel to at least 75 mm. below underside thereof, and in width at least 75 mm. on both sides of the channel. Above the channel the drain may be constructed of brickwork in mortar plastered with at least 20 mm. of cement mortar (1cement: 2 sand).

(2) No drain shall be constructed less than 75 mm. deep and 75 mm. wide and all drains must at all times be of such dimensions as to comply with all sanitary requirements and be laid to such gradients as shall effectually drain away all water which may, from time to time, be discharged into the open drain,

(3) If necessary, kerbs shall be constructed less than 75 mm. wide above the adjoining ground surface or of such height as may be necessary.

59. **Trap and silt catcher.---** At the end of the open drains, a silt chamber of size 60 cm. long, 20 cm. wide and 30 cm. deeper than the bed of the drain shall be constructed with a vertical cast iron grating 400 mm. from the open

drain to the full size of the silt chamber. This shall discharge into a trap connected to an inspection chamber.

60. **Drainage of house having high plinth.---** In the event of the plinth of a house being much higher than the bed of an open drain, all washing places on the ground floor shall discharge into the open drain by means of a 75 mm. discharge pipe brought down to such a level as to avoid a splash.

61. **Paving of ground surface.---** The surface of all house gullies, not occupied by, or beyond what is occupied by an open drain shall be paved with fine dressed blue stone or Indian patent stone or other stone approved by the Chairperson. Where a separate system of disposal exists, at the lower end of the gully whether the open drain for sullage or sewage be at the center or at the side, a jump weir shall be formed so that while any ordinary flow of sewage will discharge into the connection with the inspection chamber, a rush of storm water will be jumped over the opening and pass into the storm water drain.

62. **Water closet not to be connected with open drain.---** No water closet or any arrangement by which night soil is to be removed by the water carriage system shall be connected with an open drain.

63. **Bye-laws for open drain, etc.---** The provisions of bye-laws 58 to 62 shall apply to all open drains or other similar works communicating with the Council's sewer system.

TRAPS

64. **Inlets to be trapped.---** (1) Every inlet to a pipe drain except as provided by bye-law 50 shall be properly trapped by an efficient trap so constructed as to be capable of maintaining a sufficient water seal of at least 50 mm.

(2) In no such drain shall be constructed or fixed any trap which becomes unsealed on the removal of the cover.

65. **Traps and gullies.---** (1) All gullies, traps, gratings, covers or other appliances shall be of a pattern, size and quality approved by the Chairperson. Every stoneware gully trap shall be placed as high as possible on a bed of cement concrete mix (1 cement: 2 coarse sand : 4 graded stone

aggregate 20 mm. nominal size) at least 100 mm. thick, and completely embedded in concrete.

(2) All gully traps shall be covered with a suitable iron grating, which shall, when so directed by the Chairperson, be provided with a hinged cover of approved design.

66. **Disconnecting traps.**--- (1) Unless otherwise ordered by the Chairperson any drain of a building which may immediately communicate with any sewer, shall be provided a suitable and efficient disconnecting trap at a point below the lowest inlet to such drain as distant as may be practicable from such building, and as near as may be practicable to the point at which such drain may be connected with the sewer.

(2) Every such trap shall be provided with proper means of access for the purpose of cleansing.

67. **Floor traps.**--- A floor trap approved by the Chairperson shall be provided for the waste water from shower baths and waste water from floor on Indian type kitchen (I.e. where no sink is used). The floor trap shall be covered by a suitable grating. In the case of the ground floor such waste water shall discharge into a stoneware gully trap by means of a 75 mm. C.I. pipe and every down take or waste water pipe shall be disconnected from the gully trap by means of a disconnection channel discharging into gully trap.

68. **Ventilation for floor traps.**--- If the floor trap on upper floor is directly connected to a waste water pipe, the waste pipe shall be continued upwards, without any diminution of its diameter and (except where unavoidable) without any bend or angle, to such a height and in such a position as to afford, by means of the open end of such waste pipe, a safe outlet for foul air, the position of and covering to the open end being such as to comply with the conditions set out in the bye-laws relating to ventilation.

69. **Floor surrounding the floor trap.**--- Where any floor trap is provided the floor surrounding the floor trap shall be formed of hard, smooth and impervious material, having a fall towards the floor traps.

70. **No sink waste shall discharge into a floor trap.**--- Sinks shall be separately trapped as near to the fittings as possible and shall discharge externally and be connected to the down take waste pipes or gully traps.

STORM WATER DRAINAGE

71. **Provision of separate storm water drainage.---** Except in such areas in which the combined system of drainage prevails all rain water shall be diverted into the storm water drains and away from any opening connecting with any municipal sewer and further such kerb or other appliances as may be necessary shall be provided and maintained to restrict all rain water to storm water drains. The latter shall discharge at a point approved by the Chairperson.

72. **Design of storm water drains.---** Where storm water drains are necessary for the discharge of rain water to a municipal storm water drain, such drains, shall be designed for dealing with such intensity of rainfall as may be prescribed by the Chairperson. Each separate plot shall have a separate drain connection made to a covered or open municipal drain. Such connection to a covered drain shall be made through a pipe equipped with a grating at the commencement and laid at a gradient not less than that of the connecting drain. There shall be no siphons in the storm water drains serving the plot.

SUB-SOIL WATER DRAINAGE

73. **Sub-soil water drains.---** The sub-soil of the site of every new building shall be effectually drained by means of suitable earthenware field pipes, properly laid to a suitable outfall, whenever the dampness of the site renders such a precaution necessary.

74. **Provision of traps in sub-soil drains.---** No field pipe shall be laid in such a manner or in such a position as to communicate directly with any sewer or with any drain constructed or adapted to be used for conveying sewage except where absolutely unavoidable, and in that case, a suitable and efficient trap shall be provided between such sub-soil drain and such sewer.

75. **Ventilating openings to traps in sub-soil drains.---** (1) A ventilating opening to the trap shall be provided at a point in the line of the sub-soil drain as near as may be practicable to the trap, and communicating directly with the open air.

(2) The ventilating opening shall be provided with a suitable grating as described in bye-law 52.

76. **Sub-soil drain between trap and sewer.---** The sub-soil drain between the trap and the sewer shall be constructed in the manner described by the bye-law in that behalf of the sewer.

WATER CLOSETS

77. **Provision of privies and water closets.---** No person shall build a privy or water closet in such a position or manner as:

(a) to be directly over or directly under any room or part of building other than under the privy water closet or passage or a bathing place, bath-room or terrace. Provided that the Chairperson may dispense with the requirements if he is satisfied that the flooring beneath such privy or water closet is sufficiently impervious by reason of its material composition or thickness;

(b) to be within a distance of 6.0 metre from any well or from any spring, tank or stream the water whereof is or is likely to be, used (whether in natural or manufactured state) for human consumption or domestic purposes or otherwise render the water of any well, spring, tank or steam liable to pollution.

78. **Location of receptacle for filth basin, urinals, water borne latrines, and water closets and slop sinks.---** Every receptacle adopted to be used for receiving any solid or liquid filth shall be located within a water closet or water borne latrine.

79. **Entrance to water closet.---** (1) No water closet shall be constructed so that it is approached directly from any room used for the manufacture, preparation or storage of food for human consumption or used as a factory workshop or work place.

(2) Every water closet or water borne latrine which cannot be flushed by the individual user shall be constructed in such manner that it can be entered only from the open air.

80. Mode of constructing water closet and water borne latrine.-- (1) Every water closet shall have a minimum floor area of 1.20 square metre and a minimum width of 1.05 metre. The compartments of every water borne multiple or public latrine including compartments intended for through latrines shall measure at least 90 cm. x 105 cm.

(2) If any side of a water closet or water borne latrine abuts on a room used for the manufacture, preparation, or storage of food for human consumption, or used as a factory, workshop or work place, the water closet or latrine shall be divided by a solid wall or partition of brick of masonry, extending the entire height from the floor to the ceiling.

(3) Every Indian type water closet or water-borne latrine shall be provided with a floor of hard, smooth, impervious material, having fall of 12 mm. to the foot towards the pan for purposes of washing down. All water closets or latrines shall be provided with proper doors and fastenings.

(4) The floor of all water closets or water latrines on the ground floor shall be raised at least 150 mm. above the ground outside.

81. Windows in water closets.--- (1) In one of the walls of every water closet which abuts on a street or a yard or open space a window shall be constructed of not less than 1.00 square metre and shall open directly into the external air.

(2) Opening on to external air does not include opening on to a verandhah unless the verandah is unenclosed and not used for habitation.

82. Ventilation of water closets.---

Every water closet shall be provided with adequate means of constant ventilation by an opening built in an external wall of such water closet, or by an air shaft or by some other effectual method or appliance. Such means of constant ventilation shall be of an area of not less than 0.50 square meter.

83. Flushing cistern in water closets.---

(1) Every water closet shall be furnished with a closed cistern of adequate capacity, not less than 12.5 litres and, unless sanction by the Chairperson, not more than 15 litres for the purpose of flushing, which shall be separate and distinct from any cistern used for drinking purposes, and shall be so constructed, fitted and placed as to admit of the supply of water for use in such water closet, so that there shall not be any direct connection between any service pipe upon the premises and any part of the apparatus of such water closet other than such flushing cistern.

(2) Except in the case of a "Low Level" flushing cistern a head of at least 1.50 metre measured from the bottom of the cistern to the point of discharge of the flush pipe shall be provided.

(3) Every such cistern shall be provided with a suitable ball cock and stop cock fixed in the supply pipe, and, unless the Chairperson shall otherwise direct, with an over flow pipe, discharging into the open air in some conspicuous position, but not over the inlet into any drain or storm water channel.

84. Flushing cistern to be mosquito proof.---

All flushing cisterns shall be of a mosquito-proof pattern.

85. Tank for water closets.---

(1) Every water closet or latrine shall be provided with a closed reserve tank of:

(a) 300 litres capacity per seat for the first five seat;

(b) 200 litres per seat for all seats between 6 and 20 ; and

(c) 150 litres per seat for all seats over 20

(2) Every such tank must be made of galvanized iron of not less thickness than 14 Birmingham Wire Gauge, or other material approved by the Chairperson.

(3) No connections other than for flushing water closets or latrines are to be taken from such reserve tanks.

86. Flush Pipe.---

The pipe connecting the flushing cistern with the pan, basin, trough or other receptacle with which the water closet or latrine may be provided, shall be of lead and so constructed and fixed that such pipe and the union shall not in any part have an internal diameter of less than 32mm and shall be fixed as vertically as possible. The flush pipes shall be connected to flushing cisterns by means of brass unions and plumbers wiped joints and to water closet pans with red lead boiled oil and cement, provided that the Chairperson may permit galvanized iron pipes instead of lead pipes where he thinks proper.

87. Apparatus of water closet.---

The water closet shall be furnished with a suitable apparatus for the effectual application of water to any pan, basin, trough or other receptacle with which such apparatus may be connected and used, and for the effectual flushing and cleansing of such pan, basin, trough or other receptacle, and for the prompt and effectual removal therefrom and from the trap connected therewith of any solid or liquid filth which may from time to time be deposited therein.

88. **Water closet, pan, trough or other receptacle.---**

The water closet shall be furnished with a pan, basin, trough or other receptacle of smooth vitreous glazed non-absorbent material and of such shape, of such capacity and of such mode of construction as to receive and contain a sufficient quantity of water and to allow all filth, which may from time to time be deposited in such, pan, basin, trough or other receptacle to be flushed out clean without allowing any lodgement of filth in any part thereof.

89. **Syphon Trap.---**

Immediately beneath or in connection with such pan, basin, trough or other suitable receptacle, shall be constructed an efficient siphon trap,, so that it shall at all times, maintain a sufficient water seal between such pan, basin or other suitable receptacle and any drain or soil pipe in connection therewith. A D-trap or any trap of such a kind as to be not self-cleansing shall not be constructed or fixed in or in connection with the water closet apparatus.

90. **Connection between soil pipe and water closet.---**

(1) The bend between the branch of the cast iron soil pipe and water closet pan shall be either of lead or cast iron. In the case of the former the bends and pipes shall be 100mm in diameter and shall weigh not less than 10.90 Kg. per metre. The thickness of the metal should be approximately 3mm and shall be equal to 3.17 Kg. sheet lead. The connection of the lead bend shall be effectively made by a brass ferrule soldered with a wiped joint to the lead pipe and the joint between the porcelain trap and brass ferrule made in cement boiled oil and spun yarn. Cast iron bends shall be in accordance with the British Standard Specification No. 78-1938

(2) The connection between the soil pipe and the water closet trap shall be by means of a pipe fitted with a screw cap external to the wall for cleansing purpose.

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91. Casing not to be fixed.---

No casing of wood or other material shall be fixed round any receptacle, cistern or other apparatus of any water closet.

92. Walls of latrines and water closet.---

The walls of every Indian type water closet or latrine upto a height of not less than 0.90 metre above the platform shall be constructed of well burnt-bricks, plastered with cement mortar 1 : 3 (1 cement : 3 sand) or of other hard smooth impervious material and all corners rounded.

93. Bucket flush latrines, (2nd class sewer connections).---

(1) Bucket flush latrines are in every way similar to water flush closets except that no flushing apparatus or water storage tank is necessary, every user flushing the pan with a bucket of water after use.

(2) The Chairperson may sanction the use of bucket flush water closets in any area, provided that such water closets shall be sanctioned only for houses which are not already provided with a filtered water connections.

(3) All bucket flush water closets must comply with these by-laws in every respect with the exception of by-laws 83, 84,85 and 86 (flushing cisterns and storage tanks for flushing water.)

94. Trough Latrines.---

Every trough latrine shall be constructed that the trough is wider at the bottom than at the top and the latrine shall be so arranged that it cannot be entered, otherwise than form the open air and shall be fitted with an automatic flushing cistern of sufficient capacity to flush out and thoroughly cleans through each discharge.

95. Pail chutes night soil dumping depots.---

(1) Every pail chute for the discharge into a sewer of night soil collected from commodes or service privies shall be constructed in accordance with the type-design approved by the Chairperson. Where such chute is combined with a public water flush latrine, access is to be provided through a separate entrance which is to be suitably screened from the public view by a masonry wall not less than 1.80 metre in height.

(2) Every pail chute is to be provided with a storage tank for flushing water, the capacity of the tank to be not less than 250 litres per 15 litres bucket of night soil to be discharged into the sewer.

PRIVIES ON THE INTERMEDIATE WATER CARRIAGE SYSTEM

96. Definition.---

"Privy on the intermediate system" means a latrine, the excrementious matter from which is collected in a suitable receptacle on the ground floor and flushed with water at regular fixed intervals by means of an automatically discharge tank fixed at a height of not less than 1.80 metre. above the receptacle and kept continually supplied with water by means of a separate supply tank.

97. Pan or receptacle.---

Each seat of a privy on the intermediate water carriage system shall be provided with a porcelain or earthen water pan with a sharp slope, or with a midmost flat glass plate with a sharp slope embedded on either side with cement or porcelain tiles.

98. Inspection holes.---

In the case of any such privy having a range of seats, arrangement shall be made to leave inspection holes at every junction of the underground drain with the vertical range of pipes or at least 3.00 metre. distance whichever is less, for the purposes of cleaning. These holes shall be covered with C.I. frames with a hinged lid. The opening over gully traps shall also have covers of the same kind.

99. Flushing Tank.---

The capacity of the flushing tank shall be determined by the length of the drain behind such privy and the number of storeys at premises in which the privies are situated. The distance from the centre of one privy and the centre of the next shall not be less than 0.90 metre. and for every 30 cm. run of the drain 5 litre flush shall be provided and for every storey 5 litre more, irrespective of the number of privies for each storey. For example – if the length of the drain is 3.60 metre and there are three upper storeys, the capacity of the tank will be 75 litres. If the length of the drain is 6.00 metre., and there is only one upper storey with 6 privy seats; the capacity will be 105 litres. All flushing tanks should be regulated to flush twice in one hour. The storage tank should contain 20 times the capacity of all flushing tanks.

100. Pipe Drain.---

The length of the drain for 150mm stoneware pipeline shall not exceed 6.00 metre but if it exceeds this length should be graded from either end of the privy so as to meet near the centre and flushing of the capacity mentioned in bye-law 99 should be provided at either end.

URINALS

101. Syphon Trap.---

(1) In a urinal constructed or adapted to be used for receiving any urine or liquid filth for conveyance to any sewer, an efficient siphon trap shall be constructed or fixed immediately beneath such urinal so as to be capable for maintaining a sufficient water seal between the urinal and any drain or waste pipe in connection therewith.

(2) No trap of the kind known as a bell trap, a dip tap, or D-trap nor any non-self cleansing trap shall be constructed or fixed in or in connection with the urinal.

92/c

102. Ventilation and waste pipe.---

All the requirements of these by-laws which are applicable to the ventilation of a water closet and the construction of a soil pipe shall be complied with as regards the ventilation of the urinal and construction of the waste pipe of the uninal.

103. Materials, form of construction and flushing of a urinal, basin, stall or trough.--- Such urinal shall be provided with:

(a) A basin, stall or trough constructed of glazed stone–ware, glazed earthen-ware, enameled fireclay or other equally suitable material of such shape as will facilitate maintenance in a state of cleanliness.

(b) A suitable flushing cistern so constructed, fitted, placed and supplied that:

(i) It shall be separate and distinct from any cistern used for drinking water.

(ii) The discharging or flushing capacity shall not be less than five litres of water for each connected basin or each width or length not exceeding 0.68 metre of stall or trough respectively.

(iii) It shall be capable of being filled or charged with water within a period not exceeding twenty five minutes or such less period as will permit, while the urinal is in use or available for use, a flushing operation of sufficient frequency to ensure the maintenance of such, basin, stall or trough in a state of cleanliness.

(iv) It shall be fitted with a suitable automatic discharging apparatus connected to the urinal basin, stall or trough by an adequate flush pipe or pipes of lead, copper or other equally suitable material having a minimum internal diameter of 12mm and fitted with a suitable spreader of spurge pipe so as effectively to distribute the water over the internal surface of every basin, stall or trough.

Provided always that there shall not be any direct connection between any water service pipe upon the premises and any part of a urinal basin, stall or trough.

104. Floor area and finishing.---

When a room is used only as a urinal it shall have a minimum floor area of 1.11 square metre and a minimum width of 1.05 metre. The floor and walls of any room in which a urinal is fixed shall be constructed of an impervious and non-absorbent material to a height of 0.90 metre.

105. Position of Urinal.---

(a) No urinal shall be constructed so that it is approached directly from any room used for the purpose for human habitation or used for the manufacture, preparation or storage of food for human consumption or used as a factory, workshop or work place except through a properly ventilated passage of 0.60 metre width.

(b) The floor of all urinals on the ground floor shall be raised at least 0.15 metre above ground outside.

DRY SYSTEM SERVICE LATRINES AND URINALS

106. Floor area.---

Every service latrine shall have a minimum floor area of 2.00 square meter with a minimum width of 1.05 metre.

107. Ventilation of service latrines and service urinals.---

(i) In one of the walls of every such latrine and urinal which abuts on a street or a yard or open space, a window of such dimension shall be so constructed that an area of not less than 0.40 square metre shall open directly into the external air.

(ii) Some means of constant ventilation shall be provided in the external wall. Such constant ventilation may be in the form of a roof vent or a jali ventilator of an area of not less than 0.14 Square metre to be placed at a level not more than 0.30 metre below the ceiling. The permanent opening can be combined with the window in which case it can be included in the 0.40 Square metre area.

108. Distance of service latrines from public roads and water supplies.---

No service latrine or service urinal shall be built within 1.50 metre of any public road, nor within 3.00 metre of any source of water supply, other than a well in which case the distance shall be not less than 25.00 metre.

109. Receptacle and flap door for service latrines.---

Every service latrine shall be so constructed that all excreta falls directly into a removable receptacle of metal, glazed pottery or other non-absorbent material which shall fit closely below the seat and such receptacle shall be removable through a flat door in the outer wall of the latrine, which flap door when closed shall obscure the receptacle from view.

110. Platform in service latrines.---

The platform of every service latrine upon which the receptacle rest shall be of masonry plastered with cement mortar 1: 3 (1 cement : 3 sand) with a slope of 125 mm to the metre towards the back of the latrine.

111. Material of walls and seat of service latrines and urinals.---

(1) In every service urinal, the walls to a height 0.90 metre above the floor and in every service latrine both the seat and the wall to a height of 0.90 metre above the floor, shall be of metal or masonry, provided that in the case of a latrine of European type, the seat may be of wood.

(2) The walls of every service latrine or of service urinal, if of masonry, shall be plastered with cement mortar 1:3 (1 cement : 3 sand) or covered with an impervious material to a height of at least 0.90 metre above the floor level.

112. Floor of service latrine and service urinals.---

The floor and seat of every service latrine or service urinal shall be of stoneware or of masonry concrete plastered with cement mortar 1:3 (1 cement : 3 sand) or of impervious tiles jointed with cement, and shall be in every part at a height of at least 0.15 metre above the level of the surface of the ground adjoining the service latrine or service urinal and shall slope to the drain in such a way that liquids will flow off quickly.

113. Seats of service latrines and of service urinals.---

Every service latrine or service urinal shall be so constructed that when the outer door thereof is open, the seats shall not be visible from a road or other public place.

114. Drains in service latrines and service urinals.---

(1) Every service latrine and service urinal shall be provided with a drain which shall be constructed of glazed pipes or other impervious material and shall connect the floor of the latrine or urinal with a municipal sewer, or if in the opinion of the Chairperson this is not practicable, with a properly designed soakage pit.

(2) The distance of any soakage pit should not be less than 7.60 metre from any source of water supply other than a well in which case the distance shall be not less than 24.00 metre.

115. Service latrines and service urinals access for cleaning.---

For the purpose of cleansing, access shall be provided to all service latrines and service urinals from a public road and such access shall in no case be less than 0.75 metre wide and in no case shall access be through a building.

ASHPITS

116. Floor of ashpits.---

The floor of every ashpit, or receptacle for refuse shall be flagged or paved with hard tiles or other non-absorbent material, and the floor shall be, so constructed that it shall be in every part thereof not less than 0.23 metre above the level of the surface of the ground adjoining the ashpit or receptacle for refuse, and so that the ashpit or receptacle for refuse shall have a fall towards the washout drain of not less than 125mm to the metre.

117. Drainage of ashpits

No ashpits or receptacle for refuse shall be connected directly with the drains.

CESSPOOL

(Drainage of premises not within 30 metre of a municipal drain or some place legally set apart for the discharge of drainage).

118. **Open drains to be provided for buildings not within 30 metre of municipal drain.---**

(1) As far as practicable buildings of this description, shall be drained by open drains in accordance with the rules laid down for such drains.

(2) The house-drain if open, shall discharge by means of a 150mm stoneware gully trap into the cesspool.

(3) All cesspool shall be closely covered and fitted with a cast iron airtight frame and cover.

119. **Discharge of Sullage from washing places.---**

If possible, the sullage from all washing places shall be discharged among vegetation or used for gardening purposes but if this is impossible then the sullage shall discharge into a cesspool having a capacity of at least 1.42 cubic metre.

120. **Capacity of cesspool how calculated.---**

The capacity of a cesspool shall be calculated from below the bottom of the inlet drain.

121. **Ventilation of cesspools.---**

(1) Every cesspool shall be ventilated by a cast-iron or galvanized iron pipe not less than 75 mm. in diameter equivalent sectional area.

(2) The vent pipe shall be protected at the top by a wire dome and shall be:

(a) carried at least 4.60 metre higher than any sky-light or window situated within a distance of 12.20 metre thereform.

(b) carried at least 1.50 metre higher than the eave of the roof, if affixed to a wall supporting the eave; and

(c) erected or affixed so as to cause the least practicable nuisance or inconvenience to the inhabitants of the neighbourhood.

122. Cesspool for latrines to be separated

There should be a cesspool for the latrines separate from that for the washing places and it shall have a capacity of at least 0.085 cubic metre per seat or slot, with a minimum of 0.71 cubic metre.

123. Location of cesspool

Every cesspool must be placed in a position convenient for the access of municipal carts.

124. Construction of cesspools

Every cesspool shall be constructed of brick work in cement laid on cement concrete land internally plastered with a 25mm coat of mix of cement and sand (1 to 1). The walls shall be brought up to 0.15 metre above the surface of the ground, and the cover mentioned in bye-law 32 shall be placed upon them.

HORSE STABLES – PUBLIC OR PRIVATE

125. Floors of horse stables

The floor of every horse stable shall be paved over the whole area with suitably dressed stone or other suitable material laid on a 150mm bed of good lime or cement concrete. The paving shall be slopped at an inclination of at least 1 in 48 towards the channel hereinafter described.

126. Channels for horse stables

(1) A half round channel 300mm wide of suitably dressed blue stone or other suitable material shall be constructed which shall meet the paving and shall be at right angles of the stable.

(2) The channel shall have a longitudinal slope of at least in 25mm in 100 to one point or more as may be selected and at each of such points a 150mmx150mm stoneware gully trap fitted with a horizontal and vertical cast-iron gratings shall be fixed.

127. Gully traps for more stables

All the gully traps shall be connected by a 150mm stoneware pipe drain or drains with an inspection chamber built complete with a 150mm intercepting sewer trap constructed on a line of 150mm stone water pipe drain connected with the street sewer.

128. Bye-laws for pipe drains to be complied with

The construction of an inspection chamber, the laying of the pipe drain and connection with the street sewer shall be in accordance with the bye-laws laid down for pipe drains.

CATTLE STABLES

129. Floor for cattle stables

The floor of every cattle stable shall be paved over the whole area with suitable dressed blue stone or other suitable material laid on a 150mm bed of good lime or cement concrete. The paving shall be slopped at an inclination of at least 1 in 48 towards the channel hereinafter described.

130. Channel for cattle stables

Behind every range of stall a half round channel 300mm wide shall be formed with a slope of at least 25mm to every trap hereinafter described.

131. Catchpit for cattle stable

The channel shall discharge into a catchpit through a glazed S.W. gully tap. The catchpit shall be 0.90m x1.20m x1.50m deep.

It shall be covered with a strong cast-iron cover fitted into a rebated frame. The catchpit shall be placed immediately at the point of discharge or lowest point of the channel and connected with the pipe drain within the premises by means of an inspection chamber built completed with a 150mm intercepting sewer trap.

132. Grating to be provided for catchpits

A horizontal and a vertical iron grating with bars not more than 12 mm. apart shall be fixed in the catchpit.

MISCELLANEOUS

133. Bye-laws for pipe drains to be complied with

The laying of the pipe drain, the construction of the inspection chamber, and the connection with street sewer shall be subject to the bye-laws for pipe drains.

134. Prevention of grease entering into the municipal sewer lines.---

Grease enters into the sewer lines from the establishments as defined herein and sticks to internal periphery of the pipe line thereby reducing its effective size and the carrying capacity. Thus, it is mandatory to construct suitable devices to stop grease entering into municipal sewers. The establishments defined for discharging grease are eating houses, restaurants, dhabas, sweet shops, halwais petrol pumps, garage service stations, animal stable, dish washing places etc. Mainly following systems are adopted for this purpose:--

(a) Grease chamber.--- Establishments having less than 100 seating capacity or having annual average production of less than one tonne per day as per the standard guidelines of Delhi Pollution Control Committee are required to construct grease chamber of suitable sizes as per approved norms/drawing after kitchen/service station/garage discharge point but before connecting with municipal sewer line carrying toilet wastes or other type of waste within the premises.

(b) Effluent treatment Plant.—Establishment having annual average production of one tonne per day or above and having seating capacity of 100 or more persons are required to construct effluent Treatment Plant of suitable size as per approved norms/drawings.

The Chairperson has powers to issue notice and/ or seal the establishments which either have not constructed suitable grease chamber/effluent treatment plant for prevention of grease entering into municipal sewer line or even fail to keep them periodically cleaned/maintained:

Provided that before sealing the establishment, the Chairperson shall give a reasonable opportunity of showing cause against the action proposed to be taken.

135. Application by owners and occupiers to drain into municipal drains.--- (1) Subject to the provisions of the New Delhi Municipal Council Act, 1994(44 of 1994) and these bye-laws, the owner or occupier of any premises having a private drain, or the owner of any private drain within New Delhi may apply to the Chairperson to have his drain made to communicate with the municipal drains and thereby to discharge foul water and surface water from those premises or that private drain:

Provided that nothing in this sub-by-law shall entitle any person--

(a) to discharge directly or indirectly into any municipal drain--

(i) any trade effluent from any trade premises except in accordance with law made in this behalf; or

(ii) any liquid of other matter the discharge of which into municipal drains is prohibited by or under the New Delhi Municipal Council Act, 1994 or any other law; or

(b) Where separate municipal drains are provided for foul water and for surface water to discharge directly or indirectly---

(i) foul water into a drain provided for surface water; or

(ii) except with the permission of the Chairperson, surface water into a drain provided for foul water; or

(c) to have his drains made to communicate directly with a storm water overflow drain.

(2) any person desirous of availing himself of the provisions of these bye-laws shall give to the Chairperson notice of his proposals, and at any time within one month after receipt thereof, the Chairperson may by notice to him refuse to permit the communication to be made, if it appears to him, that the mode of construction or condition of the drain is such that the making of the communication would be prejudicial to the drainage system, and for the purpose of examining the mode of construction and condition of the drain he may, if necessary, require it to be laid open for inspection.

(3) The Chairperson may, if he thinks fit, construct such parts of the work necessary for having a private drain made to communicate with a municipal drain, as is in or under a public street and in such a case, the expenses incurred by the Chairperson shall be paid by the owner or occupier of the premises, or as the case may be, the owner of the private drain and shall be recoverable from the owner or occupier as an arrear of tax under the New Delhi Municipal Council Act, 1994 (44 of 1994).

136. Power of owner of premises to place pipes and drains through land belonging to other persons.--- The period of notice of showing cause, refereed to in the proviso to section 186 of the New Delhi Municipal Council Act, 1994 to be given to the owner of the immovable property, as to why the order should not be made shall be 30 clear days from the date of receipt of the notice by the owner.

PENALTIES

137. Penalties

Whoever contravenes any provision of these bye-laws or fails to comply with any order or direction lawfully given to him or any requisition lawfully made upon him under any of the said bye-laws, shall be punishable in accordance with the provisions of section 390 of the New Delhi Municipal Council Act 1994 (44 of 1994).

By Order and in the Name of the Lt. Governor
of the National Capital Territory of Delhi,
A. V. PREM NATH, Jt. Secy. (UD)

4051 DG/12—15

New Delhi Municipal Council
(Civil Engineering Department)
FORM 'A'
(To be submitted in duplicate)
Application for drainage of premises
(See Bye-law 5)

To,

The Chairperson
New Delhi Municipal Council
New Delhi.

Sir,

I/We the undersigned hereby apply for permission to drain the premises known as.....Street.....House Tax assessment No.....

The sanitary arrangement and drains of the said premises are shown in the accompanying plans and sections in triplicate and are described in the appended details (submitted in triplicate) and the premises are open to inspection by the officers of the Council.

I/We undertake to carry out the work in accordance with the provisions of the New Delhi Municipal Council Bye-laws and to pay to the Council the cost of the connection to the municipal sewer at the rate given in the Council's schedule of fees.

Signature of the application and full name
Address

Name of Plumber carrying out the work and his licence No.....
Date:

103/c

New Delhi Municipal Council
(Civil Engineering Department)
FORM 'B'
(To be submitted in triplicate)
Annexure to Form 'A'
Detailed description of Work and Specification of Material
(See Bye-law 9)

Note:- Only new or altered work to be described in the following particulars:

1. Separation of rain-water and foul-water.
2. Rain-water drains, curbs and points of discharge.
3. Rain-water gutters, pipes or spout where discharging.
4. Open-foul water drains, materials, sizes, curbs and other means, places, verandahs, latrines and fitting discharging into such drains.
5. Slit-catcher and grating, size and position.
6. Drains.
   (a) Main sewage drains.
   (b) Branch drains
   (c) Materials.
   (d) Method of jointing.
7. Bedding of pipes:
   (a) Method of bedding.
   (b) Thickness and width of beds of concrete.
   (c) Thickness of concrete round pipes.
8. Protection of drain laid under wall.
9. Traps, description of Interceptor:
   Lavatory waste pipes.
   Bath waste pipes.
   Sink.
   Gully traps.
   Water-closet traps.
   Grease traps.
   Slope sink.
   Urinal.
   Others.
10. Manholes and inspection chambers:
    Thickness of walls.
    Description of bricks.
    Description of renderings.

Description of invert channels.
Depth of chambers.
Size and description of cover and manholes.

11. Ventilation of drain-

(a) Position
Height above nearest ground level

(b) Outlet shaft position of terminal at top.

12. Soil pipe, waste pipe and ventilating pipe connection:

(a) Lead and iron pipes.
(b) Lead pipe of trap with cast iron pipe.
(c) Stone-ware pipe or trap with lead pipe.
(d) Lead soil pipe or trap with stone-ware pipe or trap.
(e) Cast iron pipe with stoneware drain.
(f) Stone-ware trap with cast iron soil pipe.

13. Ventilation of water closet traps in lavatory and other trap and supports.

14. Water closets (Apartment):

(a) At or above ground level:
Approached from.
Floor material.
Floor fall towards door.
Size of window made to open.
Position of same.
Means of constant ventilation.
Position of same.

(b) Water closet apparatus:
Description of pan, basin, etc.
Flushing cistern.
Material of
Gushing pipe.
Internal diameter.
Union with basin.

15. (a) Number and description of sanitary fittings in room and rooms in which they are to be installed.

(b) Capacity and position of water storage tanks.

(c) Size and number of draw off taps and whether taken off storage tanks or direct from main supply.

(d) Details of draw off taps, i.e., whether they are of plain screw down pattern or "waste not". Description of any other sanitary work to be carried out not included under above headings.

16. Depth of sewer below surface of street.

17. Level of invert of house drain at point of junction:-

(a) With sewer.

(b) Level or invert of sewer at point of junction with house drain.

(c) Distance of nearest manhole on sewer from the point at which the drain leaves the premises.

Schedule of Pipes

	Materials	**Diameter**	**Weight**	**Method of joining**
Sub-soil drains				
Main sewage drains				
Branch sewage drains				
Soil pipes				
Ventilating pipes other than soil pipes				
Waste pipes				
Rain-water pipes				
Anti-syphon pipes.				

Date:

Signature

106/C

New Delhi Municipal Council
(Civil Engineering Department)
FORM 'C'
(To be submitted in duplicate)
Notice of covering up of drains, etc.
(See Bye-law 11)

To,

The Chairperson
New Delhi Municipal Council
New Delhi.

Sir,

I/We, the undersigned hereby give you notice of my/our intention to cover up the drainage works on date.....at.....time in the premises known as.....
and request inspection and approval of the same

The work was sanctioned by the Council vide sanction letter No.....dated.....

The sum of Rs.....being inspection fee has been paid vide C.R. No.....dated..... .

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

Signature of person incharge of the drainage of premises

Address

Name of the owner of the house and address

No. Dated 20

Certified that the above works have been inspected and approved.

Chairperson
New Delhi Municipal Council

Dated.....

---

1. This notice must reach the Council's Office (Civil Engineering Department) seven clear days before the work is intended to be covered up.
2. Insert the number or name of the house and street or road.

107/c

New Delhi Municipal Council
(Civil Engineering Department)
FORM 'D'
(To be submitted in duplicate)
Notice of completion of work
(See Bye-law 12)

To,

The Chairperson
New Delhi Municipal Council
New Delhi.

Sir,

I/We the undersigned hereby give you notice that the drainage works in the premises known as.....will be completed entirely and ready for your final inspection on the day.....at.....hours of.....20.....and request inspection and approval of the same.

[This notice must reach Council office seven clear days before the specified date].

The work sanctioned by the Council vide sanction letter No.....dated.....

The sum Rs.....being inspection fee has been paid vide C.R. No.....dated.....

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

Signature of person incharge of the drainage of premises

Address

Name of the owner of the house and address

No. Dated 20

Certified that the above works have been inspected and approved.

Chairperson
New Delhi Municipal Council

Dated.....

FORM – I

[Bye-Law 3 (1)]

NEW DELHI MUNCIPAL COUNCIL

APPLICATION FOR DOMESTIC/COMMERCIAL FILTERED WATER/SEWER CONNECTION IN THE JURISDICTION OF NDMC AREA

[To be submitted (in duplication) to Executive Engineer (W/S), NDMC]

1. Full name of Applicant (in block letters)
2. Full address of premises where water connection is required
3. (a) Present address and telephone number on which applicant is available and correspondence is to be made.

   (b) Whether the applicant is an owner/lessor/occupier.

   (1) Name and address of owner of premises/property

   (2) (i) Particulars of No. of existing filtered water connection in the premises

   (ii) Existing source/ arrangement of water for the applicant.

   (3) Brief description of premises.
4. Quantity of water required for the new connection.
5. Justification with particulars of units/flats/families/number of persons etc. for proposed new filtered water connection.
6. Site plans and sketches, in duplicate, clearly and indelibly made on a durable material and drawn to a scale of not less than 1 cm. to 1 m. showing the building or premises to which a water connection is required and proposed sizes and alignments of pipe lines to be put in. It will also shown position of stop valves, cisterns, flushing cisterns, sinks, taps, hot water boilers and all other fittings to which a supply of water is to e given or from which water is to be taken. It shall also indicate meter position on plumbing works, water lines marked on sketch about existing mainline and proposed connection, requirement of road cutting, length or connection line from main line to meter point.

109/c

7. No objection from owner/lessor (if applicant is not an owner of property) or copy of rent receipt/any other proof of tenancy like electric bill, ration card, etc.

8. Mode of distribution of water in the premises viz. stating position of overhead tank, under ground tank etc.

9. Arrangement of sewerage/water disposal.

10. Particulars for proposed new connection viz. size of connection, etc.

11. In case water connection is required for new building block:-

    (i) Drawing showing arrangement of water and sewer line.

    (ii) Reference of building sanctioned plan.

    (iii) Approved 'C' form, occupation certificate of building.

12. Purpose of using the water (domestic or for office or shops/commercial or labour camp of construction).

13. In case of commercial establishment, shop etc. particulars of business and whether the same has valid licence/registration in the name of the above applicant.

14. Name of the licensed plumber by whom the work is to be executed (not applicable in case of Govt. Department/Organization like CPWD/PWD, etc.)

15. If the applicant is an owner, bonafide proof of ownership of the building i.e. NOC from L&DO, last paid bill from House Tax Department is to be attached.

16. Whether inspection fee has been deposited, if so, attach a copy of the receipt. If not, reasons thereof.

I will abide by the NDMC (Filtered Water Supply) Bye-laws, 2008 as amended from time to time.

1. The applicant must attach a Photostat copy of ration card or bonafide proof of occupancy of the building in which the connection is required.

2. If necessary separate sheet may be attached for furnishing the details of relevant above mentioned items.

3. The applicant, if he is an occupier/lessee, is required to submit an affidavit and Indemnity Bond to be executed on Rs.10/- Non Judicial Stamp Paper alongwith application for water connection as per enclosed proforma (Form II and III)..

List of Encl.:

1. NOC from owner/Rent receipt in case of occupier/lessee.
2. Copy of last paid electric/water bill.
3. Copy of last paid House Tax bill, in case of owner.
4. Copy of completion certificate/completion plan in case of owner.
5. Affidavit and Indemnity Bond in Form II and III.

Name and signature of the applicant

Date:.....

***Plumber signature**

Name and Address

Note:

* The maximum fee chargeable by a licensed plumber for preparation of site Plan (sketch) referred to in item No.6 above and signing of this form will not exceed Rs.250/- or such other amount as the Chairperson may, from time to time, by order, specify.

(Rs.10/- Non-judicial Stamp Paper)
[to be attested by Notary Public]

Form II

[Bye-law 3 (3) and (4)]

AFFIDAVIT

I/We ..... son of Sh. ....., Resident of ..... do hereby solemnly affirm and declared as under:-

1. That I/We am/are owner/lessor/occupier of premises No. ..... for which New/Additional water connection has been required on the basis of the documents submitted.
2. That no unauthorized construction has been made in the premises subsequent to its original construction and there is no violation of Municipal Bye-laws and I/We undertake to indemnify (as per Form III) NDMC for any damages on this account at subsequent stage. Further, in default, NDMC as a licensee may disconnect the water connection on this account.
3. That in case the said water connection is found to be used for purpose other than for which it has been sanctioned, NDMC shall be at liberty to take necessary action as per the provisions of NDMC Act, 1994.
4. The water connection shall not confer any legal right of regularization of my/our premises including its land use. Further, NDMC shall be at liberty to disconnect the water supply without notice.

5. I/We shall regularly pay the bills. In case of failure NDMC may recovery of dues including disconnection of water of my/ours other premises.

6. In case water is to be used after connection water supply for a licensable trade, I/We shall obtain NOC/Licence from the competent authority and also pay water/sewa charges, as applicable.

DEPONENT

VERIFICATION

I/We ..... son of ..... resident of ..... do hereby confirm that the contents of above affidavit are true to the best of my knowledge and belief.

DEPONENT

WITNESSES

1.

2.

FORM III

(Proforma of Indemnity Bond to be executed on Rs.10/- Non-Judicial Stamp Paper)
Notorial stamp worth Rs.3/- to be affixed

INDEMNITY BOND

Whereas, I ..... Son of ..... is the lawful owner/lessor/occupier of ..... New Delhi.

And whereas, the said premises is to be installed with a new water connection whose bills of consumption are to be issued in my name and are to be paid by me.

And whereas, I confirm that no addition/alteration has been made in the building subsequent to its original construction and the covered area is as it is and there is no violation of Municipal bye-laws and in default, the Council may disconnect the said connection without any notice or warning.

And whereas, I am desirous of having new/additional water connection in my name for which I am applying separately.

Now, therefore, I, the above named ..... Undertake to indemnify the New Delhi Municipal Council to reimburse and compensate for any loss/damage or compensation claimed at any time by the owner of the building or by any one else in relation to be sanction of this new water connection.

EXCUTANT
(Signature)

Name in block letters

Witness:

(Name and full address)

1. .....
   .....
   .....
2. .....
   .....
   .....

(To be got attested from Notary Public)

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