

D.D., the 21st July, 1988

CIRCULAR 23/

Sub: Ensuring quality of water supplied for drinking purposes.

Though we depend upon the Municipal Corporation of Delhi for supply of potable drinking water in all the buildings and areas where DDA takes up the development, it is necessary to follow some of the following arrangements to effectively supply the water with adequate pressure:-

1. Sometimes water is collected in underground tank from the Municipal supply and pumped to the various houses or to overhead tank.
2. Sometimes deep tubewells are constructed and underground water collected in sumps or stored alongwith MCD water.

In all the above cases, the engineering department of DDA should take adequate precautions to ensure safe drinking water following the standard specifications. Testing should be done from representative sources in the normal course at least one in three months. In each case the samples should be tested in two places, one of which should be a government recognised laboratory.

The quality of water shall be tested after the sample is prepared as per appropriate IS specifications. In this connection, the following IS specifications should be kept in mind:

1. IS 10500-1983
2. IS 1622-1981
3. IS 3025-1964

It will be the responsibility of the EE to identify all the places where this regular testing is to be done and keep a list of these places in an appropriate register under his control. He should ensure that testing is done as per the above procedures. In rainy season, the testing should be done more often in case water is being drawn from deep tubewells.

SEs should make it a point to keep a close watch on the testing and ensure that the EEs strictly follow the testing procedures in all the tubewells. They should also send the details of such test results to Chief Engineer(D&R) who will keep statistical information of all the tubewell resources with the DDA until they are ultimately transferred to the MCD. Chief

Engineer(D&R) will be the source of this statistical information for any reference any time. This system should be got enforced by all the CEs with immediate effect, if it is not being done already.

SEs will be principally responsible to see that they maintain a register of all the tubewell sources to watch the test results.

The following preliminary precautions shall be ensured in all cases:

1. The underground tanks shall be regularly cleaned and provided with chlorination arrangements. The cleaning operations shall be properly recorded in a register and also displayed on the tank itself where the next date for cleaning shall be displayed.
2. There shall be no dumping grounds or dust bins within 100 ft. of the tubewell source nor there shall be any stagnant drain nearby. The AEs incharge of the tubewell will be principally responsible to ensure this.
3. The underground tanks shall be provided with proper protective fencing and this area shall be used for no washing or cleaning purposes.

In case the water gives unsatisfactory result, action shall be taken to discontinue the source, get the tubewell disinfected and reconnected after testing the water satisfactorily.

V. S. Murti
20/7-63
(V.S.Murti)
Engineer Member

Copy to:-

1. All SEs for strict compliance.
2. All CEs for monitoring the effective control.
3. CE(D&R) to keep a statistical information of all the tubewells, the quality of water in these areas etc.

Circular NO:232

Subject: Ensuring quality of water supplied for drinking purposes.

Reference is invited to this office circular No. 231 issued vide NO:EM.1(10)83 dt. 21.7.88 in which certain guide-lines were indicated about testing to be done from the representative sources and at some frequency.

In the present conditions, various infrastructure works in Delhi are still very much incomplete and it will be a long way before the total infrastructure is developed to ensure hygiene, health and sanitation. There are places where the storm water & water supply lines are located close together and sometimes crossing each other. This, unsatisfactory arrangement, may be due to inadequate space for aligning the services. There are places where the sewer lines, even though they are at depth are located horizontally near the water supply line; even if the water supply lines are above and sewer lines are below, there are times when sewers get surcharged and man holes over flow. The public at large are not very responsive to proper up-keep of their own environments and they allow stagnation of water near the water sources.

Considering all the above aspects, it is necessary to fix the frequency of testing so that any incidents of contamination can be dealt with promptly.

It is therefore necessary for the Engineers to see that sources of water samples are very disbursed and representative. In this connection reference shall be made to the guidelines indicated in the IS 3025-1964 specifically about the sampling and frequency of samples. The point of sampling shall be chosen with extreme care so that a representative sample of water is obtained and the conditions prevailing on the ground, even the atmosphere the users and deficiency of the system; all should decide the point of sampling. As far as frequency of testing is concerned, it should be more at places of greater contamination and less at places of lesser contamination and greater control. At any place, the frequency of sampling shall be atleast once in 2 months reduced to fortnightly or monthly depending upon the scope of contamination. EEs should decide this issue taking into consideration the total environment.

All precautions, necessary, for lifting the samples, testing the samples recording & interpretation of results and subsequent action should be monitored by the EEs through proper documentation/action

K. S. S.
24/7.58
Engineer Member
D.D.A.

Copy to:-

1. All Chief Engineers.
2. All S.Es for strict compliance.
3. All EEs for monitoring the effective control.

DELHI DEVELOPMENT AUTHORITY

EMK(10) 83/10274

Dt., the 29th July, 1988

CIRCULAR NO. 233

Alignment of water supply lines.

It is necessary to ensure that the water supply lines are properly aligned technically and ~~operationally~~. One of the objectives is to see that repairs can be carried out to water supply lines as and when necessary without disturbing any permanent infrastructure like water bound macadam road or concrete pavement of the above infrastructural facilities at any time. Where the water supply lines cross the road, instructions are already available to indicate that the pipeline shall be taken along a culvert or through a pipe which can independently support the road structure above. Water supply line at both ends must have collars or flanges which can be dismantled to repair that portion of line under the road as and when necessary.

As regards the layout of the water supply lines within the buildings and near storm water drains and sewers, utmost care shall be taken to see that ferule connections, valve chamber, scour valves or valves are not located near the place where contaminated water/coming out of overflowing man hole. Invariably the water line shall be kept distinctly away and higher than the sewers.

It is also necessary to ensure that no water supply line flows along a storm water drain or along a sewer line. Even normal damages to the storm water drains or sewers should not cause any disturbance or contamination of the water supply line.

Under no circumstances, water lines be allowed to cross man holes or storm water drains where water crosses parallel to the drain or at perpendicular. These instructions must be noted right up to the level of JEs in charge of planning, design and construction in DDA.

V.S. Murti
29/7/88
(V.S. Murti)
Engineer Member

Copy to:-

All CEs X
All SEs X Two copies each.
All EEs X

Delhi Development Authority

NO: EM.1(10)83/ /C & 34

Dt: 10.8.88

Circular NO: 234

Sub: Award of pendent-lite interest by the Arbitrators.


Arbitrators are awarding pendent-lite interest in most cases. In "E.E. Irrigation Galimala & others V/s Abhaduta Jena" (Judgements today 1987(4)SC(8)) the Hon&ble Supreme Court has held that arbitrators are not competent to award pendent-lite interest. A copy of judgement is enclosed. It has been accordingly decided, ^{in consultation with CLA} that we should file objections to all the awards in which pendent-lite interest has been awarded.

All EEs are advised to take this plea during the arbitration proceedings and also contest the awards pertaining to pendent-lite interest in consultation with the .L.A. Wherever awards have already been delivered pendent-lite interest, may be contested when the same is sought to be made rule of the court.

Encl: Copy of judgement.

Copy to :

All CEs/SEs/EEs.


Director (Works)
D.D.A. 11/8

Delhi Development Authority

Circular NO: 235

Sub : Anti-Malaria Precautions.

Following Malaria Preventive Measures, should be taken by the field staff immediately.

Construction Sites :

- (i) Stagnant Water is breeding place for mosquitoes, as such, it should be ensured that stagnant water is not allowed to stay in the abandoned water tanks/haudis constructed at site for mixing of mortars and storage of water.
- (ii) Stagnant Water should also not be allowed to stay in the excavated trenches as well as around the labour camps.
- (iii) Proper arrangement should be made for draining away, ~~the~~ sullage water so as to keep the labour camps free from mosquitoes.
- (iv) Effective arrangements should be ensured for conservancy and sanitation in the labour camps.

2. Desilting of open drains :

All open drains be got desilted regularly and no choking of drains should be allowed.

3. Oxidation Ponds :

Oxidation Ponds should be sprayed with anti-larvic chemical periodically and there should not be any over-flow of sewage out of Oxidation Ponds.

No. EM5(86)72/Vol.V/ 10942

Copy to :

1. All Chief Engineers.
 2. All Suptdg. Engineers.
 3. All Ex. Engineers.
- for information & necessary action.

[Signature]
Director (Works)

D.D.A.

Dt.

16.8.88

[Signature]
Director (Works)

D.D.A.

Delhi Development Authority

NO:EM.1(10)03/12505

Dated: 12.6.88

C I R C U L A R NO: 236

Recently I discussed the electrical works specifications with all the SEs(Elect) and this has been standardised. Since the items that we use in all the buildings are more or less similar, the description of the item in the tender documents and estimates and the relevant specifications should be identical in all the works whether they fall under S.E.(Elect.)1,2 or 3. The additional conditions and specifications attached with the agreement are only ^{to} supplement. They should not be added in a routine manner to standard specifications of CPWD. The additional conditions should therefore, be of minimum number and with purpose. There should be no possibility of any confusion, misunderstanding or doubtful meaning in the additional conditions or specifications.

V.S. Murti
12.6.88
(V.S. Murti)
Engineer Member
D.D.A.

Copy to:-

1. All S.Es(Elect.)DDA.
2. All C.Es, D.D.A.

DELHI DEVELOPMENT AUTHORITY
(ENGINEER MEMBER'S OFFICE)

NO: E.1.1 (10)/82/DEA/13337

Dt : 28.9.88

CIRCULAR NO: 237

sub : GUIDELINES TO BE STRICTLY FOLLOWED BY THE
FIELD STAFF IN CONNECTION WITH FOUNDATION
WORK.

The importance that should be attached to the preliminary stages in the construction of a structure, particularly a residential project needs to be understood by every engineer associated with such a project. Points which may appear to be minor but which need careful attention are mentioned in the following paragraphs:

2. SITE INVESTIGATION :

After a site has been selected for a residential or any building project, a detailed site survey should be conducted by the Executive Engineer of concerned division. The details that should be covered are :-

- i) Contour survey of the area with respect to a physical permanent standard bench mark.
- ii) History of the site indicating any filling done in the past and purpose for which the site was put to use.
- iii) Water courses cutting across the area, and the natural drainage of the area.
- iv) Existence of any wells, ponds, pits, septic tanks, abandoned pipe line.
- v) Existing services like road, power line, water mains, sewer, S.W. drains and the like.
- vi) Information about the land surrounding the site, and nature of structures in the neighbourhood, general surface water drainage etc.

3. SUB-SOIL INVESTIGATION :

- 3.1. Sub soil investigation is necessary to determine the capacity of soil to bear the structure and to determine

work should be entrusted to a firm, only after verifying the antecedents of the firm and its reputation. The field staff at least at the level of AE should be associated with the soil investigation, and in the selection of bore holes (for SPT) and their depths. Bore holes should be located at the corners and some at interior locations depending upon the size of the plot. The depth of bore holes should be around 10M. if the point of refusal is not reached earlier. In addition to the SPT, Dynamic cone Penetration Tests (DCP Tests) should be carried out in sufficient number depending upon the variation in soil characteristic of the area. Some of them can be near the location of bore holes. Plate load tests should also be done at at least in one location to have a fair idea about the soil strength.

3.2. E.E. should ensure that the soil investigation report contains the following information :-

- i) Date of investigation.
- ii) Layout plan to suitable scale (and with next line) showing the location of bore holes, DCP and plate load tests.
- iii) R.L. of bore holes with reference to the standard bench mark.
- iv) Location of water table and its variation during the year.
- v) A schematic diagram showing the cross section of all bore holes indicating type of soil, soil characteristics and parameters and other details. The top of bore holes should be related to the absolute reduced levels. All the details of bore holes should ~~come~~ come in one sheet, suitably numbered on plan as well.
- vi) Chemical analysis of sub-soil and sub-soil water with reference to presence of deleterious materials.
- vii) The recommendations of the soil consultant should cover the following aspects :-
 - a. A study of SBC (Safe Bearing Capacity) and the types of foundations adopted for buildings in the neighbourhood. If this cannot be furnished reasons thereof should be indicated. Full bore hole charts with soil classification to be indicated.
 - b. Probability of the area getting flooded.

- c. SBC recommended for the site under investigation with detailed calculation and the type of foundation suggested with adequate reasons.
- d. Marking of areas, if any which are weak where it would not be advisable to locate a structure.
- e) Photographs of any important ground features.

4. CONSTRUCTION :

Construction of a building strictly in accordance with the architectural drawings and structural drawings is solely the responsibility of the field staff. They should also scrupulously follow the specifications which govern the work. The following points may be borne in mind by the field staff :-

- i) All related drawings and the notes contained therein should be carefully studied before commencing the construction.
- ii) Depth of foundation indicated on drawing is always below the original ground level with adequate grip.
- iii) Where the building is located in a sloping terrain, and where the adjacent footings are at different levels, the horizontal distance between the footings should be more than twice the level difference (refer also IS: 1904).
- iv) Along the length of the wall in a sloping ground, stepping of foundation shall be done in consultation with the Design office.
- v) Similarly, where the ground adjacent to a footing, slopes downward, the sloping surface should not encroach upon a frustum of the bearing material (i.e. earth or rock etc.) under the footing as mentioned in IS: 1904. In case of any difficulty, Design office should be contacted for details.
- vi) Where the sub-soil/sub-soil water contains sulphate beyond the permissible limits, the question of using sulphate

- vii) After the excavation is done to the required width and depth, and before concreting is done, the trench should be inspected by the AE/EE in charge of the work. They should record their clearance in writing in site order book before foundation is laid. For buildings more than 4 floors high, SE should record such certificate.
- viii) If the soil characteristics of foundation are found to be different from those given in the soil report or if there is variation in the soil characteristic within the same building, the design office should be informed. The JE & AE shall be responsible for this.
- ix) If any obstructions such as wells, pipes and the like are encountered during excavation, design office should be informed, and no construction should be carried out in that block till decision is given by Design office.
- x) Lean concrete in foundation in a load bearing structure is a structural member and should be constructed properly.
- xi) Proper care should be taken in constructing the foundation masonry without voids.
- xii) Wherever subsequent earth filling is to be done, it shall be done on either side of the wall simultaneously to the same height and compacted properly.
- xiii) Malba and rubbish should not be used for filling.
- xiv) Plinth protection should invariably be provided around the building. It shall be constructed properly to drain away the water.
- xv) The ground surrounding the buildings should be properly dressed and sloped, so that rain water flows away from the building.
- xvi) Where specification of foundations are prescribed, a construction specification, location of joints and