

DELHI DEVELOPMENT AUTHORITY
QUALITY CONTROL CELL

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No.F.73(36)2003/QC/CB/168

Dt. 20/6/06

Circular No. 170

Subject:- Maintaining Material Approval Register At Site.

Approval of materials is one of the Most vital activity of quality assurance in construction projects. In this connection this office has already issued Circular No.154 regarding "Use of ISI Mark Materials in Construction Works," and Circular No.156 regarding "Maintenance of Account of Material Received At Site." However, while inspecting the works in different zones/divisions, it has come to the notice of Q.C. Cell that there is no uniformity of procedure regarding maintenance of "**Material Approval Register**" Moreover, it is observed that all the requisite details are not recorded while approving samples of materials for mass consumption in works. Before the material is approved in large scale it is necessary to approve the sample in the beginning itself and keep record of the same so as to avoid any confusion or dispute.

A set of the approved samples duly authenticated and sealed should be kept at site in the custody of Engineer-in charge for future comparison and physical verification/ references till the completion of work. Proper approval slip of material should be pasted/ marked on such approved samples as shown below.

<u>Sample Approval Slip</u>				
Article/ Item No.	Date of approval			
Manufacturers Name & Brand of Material:-				
Reference to Material Approval Register:-			Page No.:	
Name of work:-				
Agency:-				
Agreement No:-				
Sign. of Contractor	Sign of JE	Sign of AE	Sign of EE	Architect

In order to maintain the uniformity a Proforma has been developed for sample approval register as annexed at Annex.-I.

Where article of different makes and design bearing ISI certification mark are available best available material shall be approved & used in work. No material inferior

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to approved samples shall be allowed to be used. As regards routine/ day to inspection of material brought at site for incorporation in the work, the approval shall be subject to their test results; and record/ account for the same shall be maintained as per proforma circulated vide QC Circular No.156.

It is enjoined upon all the field units to follow the above instructions meticulously.

Encl.:- Annex. I

(Er. A.P.Singh)
Chief Engineer(Q.C.)/DDA

Copy to:-

- 1) O.S.D. to V.C./DDA for information of the later.
- 2) E.M./DDA.
- 3) All CEs/DDA with request to circulate copy to lower formation.
- 4) SE(QC)/EE(QC).

Chief Engineer(Q.C.)/DDA 26/6/06

Sample Approval Register

Article.....

<u>S.No.</u>	<u>Description</u>	<u>Observation/Remarks</u>
1.	Date of Approval with progress/status of work	
2.	Name , Brand name of Material & Grade	
3.	Application/ Use/ref. to Agmt item	
4.	a) Whether material is ISI mark/ISI No. b) Whether BIS mark Manufacturer's name, identification mark, Detail of BIS certification/License with its validity has been checked and documents kept in record	
5.	Whether Purchase voucher has been submitted by agency and kept in record.	
6.	Whether material checked as regards to Appearances, Finishing, Dimension, Weight etc-give details thereof.	
7.	In case of non-ISI material has the factory been visited and required tests performed before acceptance.	

Sign. of JE

Sign. Of AE

Sign. Of EE

Sign. Of Arch.

Sign. Of SE



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NO F 73(36)2003/QC/CB/170

Dated: 23-6-06

CIRCULAR NO...172

During Quality Control inspection in one of the case, the 28th day strength of Cement Concrete Cube for mix.1:2:4 was observed as 80 kg/sq.cm. against the requirement of 210 kg/sq.cm, but the item of work was accepted at reduced rates without carrying out the check tests as specified in clause 5.4.9.2 of CPWD specifications 1977 Vol.1; through SE is empowered to accept the substandard item of work only when he is satisfied that structural safety would not endangered.

To avoid recurrence of such incidents, attention of EE/SEs is drawn towards the relevant clauses of CPWD specifications 2002 which deal with the procedure for inspection of concrete and subsequent non-destructive/destructor tests required to be carried out in case of failure of cube-test results regulates. The same is summerised hereunder:

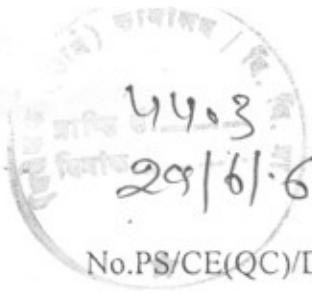
1. **Inspection---** Immediately after stripping the formwork, all concrete shall be carefully inspected and any defective work or small defects either removed or made good before concrete has thoroughly hardened, as laid down in clause 5.4.7.2 of CPWD specifications.
2. In case of doubt regarding the grade of concrete used, either due to poor workmanship or based on results of cube strength tests, in-situ compressive strength test of concrete shall be determined by conducting non destructive tests as laid down in clause 5.8.12.2.4 of CPWD specifications.
3. Unless otherwise specified, the concrete in the members represented by a core test shall be considered acceptable if the average equivalent cube strength of the core is equal at least 85 per cent of the cube strength of the grade of concrete specified for the corresponding age and no individual core has a strength less than 75 per cent.
4. In case the core test results do not satisfy the aforesaid requirements or where such tests have not been done, load test (see Annexure B to clause 5.4.9.2 of CPWD specifications) may be resorted to. Load tests should be carried out as soon as possible after expiry of 28 days from the time of placing of concrete.

It is enjoined upon SEs to please adhere to the above stated provisions of CPWD specifications strictly before accepting the substandard concrete in RCC structures at reduced rates.

(A.P. SINGH)
CHIEF ENGINEER (QC)

Copy to:

AE 11



**DELHI DEVELOPMENT AUTHORITY
QUALITY CONTROL CELL**



No.PS/CE(QC)/DDA/2006//177

Dated: 26th June, 2006.
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Q.C.CIRCULAR NO. 175

Subject: Use of Water for construction purpose.

In Delhi, almost in all construction sites the tube well water is used. During the QC Inspections the following observations have been made on water used for construction.

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- i) The physical and chemical properties of ground water not got tested along with soil investigation and no stipulation is made in the agreement for arranging the good quality of water by contractor, even when we are aware of poor quality of ground water.
 - ii) The water samples are not collected carefully and at specified frequency for testing.
 - iii) In cases where the water was declared fit by field units, the samples collected by Q.C.Cell showed higher acidity or alkalinity. When the issue was raised the field units replied that the relevant bore-well had been abandoned and water from other bore-well was used in construction. When the samples were collected from the new bore-well, the same also failed to meet the requirement, raising the doubt in reliability of test results of samples collected by field units.

Such casual approach at the level of field units defeats the very purpose of quality control which may ultimately lead to reduced life-span of the structures. To avoid such situation the attention of all the concerned is invited to the following provision in specifications and codes:

- 1) The physical and chemical properties of ground water shall be got tested along with soil investigation and if the water is not found conforming to the requirement of IS: 456:2000, the tender document shall clearly specify that the contractor has to arrange good quality of water for construction indicating the source (Clause 3.1.1.1 of CPWD Specification 2002 refers).
- 2) Water from each source shall be tested before commencement of the work and thereafter once in every three month till the completion of the work. In case of ground water, testing shall also be done for different points of drawdown. Water for each source shall be got tested during the dry season before monsoon and again after monsoon. (Clause 3.1.1.4 of CPWD specification 2002 refers).
- 3) The sample of water taken for testing shall represent the water proposed to be used for concreting, due account being paid for

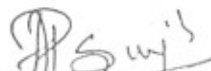
- 4) Highly alkaline water may retard the setting time of cement and may induce aggregate-alkali reaction if the aggregates are reactive. In case of doubt regarding the development of strength, the suitability of water for making concrete shall be ascertained by the compressive strength and initial setting time tests specified in Clause 5.4.1.2. and 5.4.1.3 of IS 456-2000. In case alkalinity is very high, the suitability of aggregate shall be determined by Aggregate – alkali reaction test as per IS: 2386 Part VIII.
- 5) The water shall be stored in clean tank with covered top so as not to allow any contamination. Labor should not be allowed to take bath or wash utensils near the tank thereby contaminating the water. Tank shall be cleaned regularly and no algae or fungi growth shall be allowed.
- 6) Water found satisfactory for mixing is also suitable for curing concrete. However, water used for curing should not produce any objectionable stain or unsightly deposit on the concrete surface. The presence of toxic acid or iron compound is objectionable (clause 5.4.4 of IS : 456-2000 refers).

All the concerned are advised to pay due attention on aforesaid points for strict compliance.

(A.P.Singh)
Chief Engineer(QC)

Copy to:

1. OSD to VC/DDA, for information of the latter.
- ✓ 2. EM/DDA for information and necessary action.
3. All CEs/DDA with the request to circulate copies among their SEs/EEs.
4. All EEs(QC)/DDA.


Chief Engineer,
26/6/06