

कार्यालय अधीक्षण अभियंता
गुणवत्ता आश्वासन इकाई, लो.नि.वि. रा.रा.क्षे.दिल्ली
8वां तल, लोक निर्माण विभाग मुख्यालय,
इंद्रप्रस्थ एस्टेट, नई दिल्ली-110002
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O/o THE SUPERINTENDING ENGINEER
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Office Memorandum-4

Sub:- Advisory regarding Quality Aspects on PWD, GNCTD works.

Quality Assurance Unit under E-in-C, PWD, GNCTD conducts regular inspection of works with the aim to guide the field units for improving and assuring the quality of works. Based on the experience gathered through inspections of various works, the following observations/suggestions are brought to notice of all concerned.

1. Make of cement, Batch No. of cement and grade, quantity & type of cement is neither mentioned in MAS register nor in Cement Register.

Suggestion: All are requested to ensure the same to follow the laid down guidelines in CPWD Work Manual/SOPs as most of the complaints received in this regard are of genuine Invoices & Bill of procurement. It is also requested that concerned EEs may please ensure genuineness of invoices/bills of cement procurement and manufacturer's report may also be taken from contractor for each lot.

2. Test Register, Inspection Register, Hindrance Register, Site Order Book etc. are not being reviewed by EE & SE as per provision of CPWD works Manual/SOPs.

Suggestion: All EEs /SEs are requested to comply the CPWD Manual provisions. This will not only comply the laid down procedure but will also help in pointing out the deficiencies in the records timely which can't be corrected later on.

3. Test Register are not being maintained properly as samples of different material sent for testing in outside laboratories are neither being recorded in the test registers at the time of sending samples nor after receiving the test results.

Suggestion: All field staff are requested to maintain the test registers for all test conducted in outside laboratories in a proper manner. Also the copy of test results may be kept in work file.

4. Lot wise weight of materials like steel section, aluminum section, TMT bars and CP fittings etc. are not being recorded in Test Register/Register for site. It has been observed during inspections of various works that payment of steel reinforcement bar and CP fittings have been made based on standard weight whereas actual weight found

was less than the standard weight. Also the make of material was not found as per NIT.

Suggestion: Lot wise weight of samples for bulk supply/procured material, like Steel section, Aluminum section, TMT bars, should be recorded in test register and payment to contractor should be made based on the actual weight of sample if found within permissible limit as per IS code /CPWD specifications but in no case, the payment should be made based on standard weight of particular section if not found upto mark having standard weight. Also the make used in the work should be strictly as per the list of preferred makes attached with the NIT. No change in the make of any material shall be allowed without the approval of NIT approving authority.

5. Approval of Design-Mix of RMC by the competent authority was neither made available nor reference of the delivery tickets for RMC brought at site found mentioned in the register of work. The name of RMC plant was also not mentioned in the record in many works.

Suggestion: As per NIT and general practice, design Mix for all concrete mixes of different grades has to be got done from the Govt. Institutes as specified in NIT. However, it has been found that old Design-Mix of different grades are being allowed at site by the Engineer-in-Charge and that too without approval by the NIT approving authority or the authority decided in the NIT. As per IS Code 456, maximum one year old Design-Mix report can be allowed to be adopted for RCC/CC work if the source of material and make of cement being allowed is same as specified in old Design-Mix report subject to necessary recovery on account of cost of Design-Mix. If the brand of cement being used at RMC plant and sources of material like sand, aggregate, etc. are not same, old Design-Mix report may not be allowed at all.

6. Certificate of page numbers in Computerized Measurement Books are not mentioned while recording the certificate by Executive Engineer and CMB pages are not machine numbered.

Suggestion: All computerized Measurement Book should be machine numbered and should be issued as per procedure laid down in CPWD Works Manual. No checking of entries in CMB should be made without proper CMB number and having all pages machine numbered. It has also been found that measurement of those items which were executed on latter date, were found recorded in CMB without following the sequence of date wise activities executed at site. This deficiency proved that the measurement of all the items are done by the contractor in one go without following the sequence of activities executed in different dates. Also our field staff failed to point out such deficiencies and test checked the measurement recorded by the contractor which is a serious matter.

7. The running as well as final bills for the works are submitted by Assistant Engineers to the Executive Engineers, without dated signature of Assistant Engineer.

Suggestion : All running bills/final bills should be submitted to division office either by the letter having proper dispatch number or bill should be duly signed with date by all JE and AE and acknowledgement of same may be taken from division office so as to avoid missing of CMB/bill. This will also help to identify the concerned official /staff with whom it is pending.

8. Extra item statement, Substituted item statement & Deviation item statement sanctioned by Assistant Engineer are found attached with the bills without dispatch number of the statement and also reference of sanction is not mentioned in the abstract of cost for the bills.

Suggestion: All EIS/DIS approved by any officer should be endorsed with proper dispatch number. Also reference of all approvals /pending of approvals should be clearly mentioned in each running /final bill so that Engineer-in-Charge may take action accordingly before passing the bills.

9. Mandatory test proforma for executed quantity in the bill, not found attached with the bills, Mandatory test profarma is essential to ensure whether the required number of tests conducted or not?

Suggestion: All field staff i/c JE, AE & EE have to ensure that mandatory test statement for each item of work is attached with each bill so as to know the number of test conducted w.r.t. number of test required.

10. Status of EOT is not reflected in the final bills, while passing the final bills for the works.

Suggestion: As per latest guidelines, no EOT can be granted by the Engineer-in-Charge without getting rescheduled mile stones based on the hindrance occurred by that date. Penalty leviable if any, should be levied simultaneously without waiting for final extension of time.

11. Cross references of quantity brought forward and carried over are not found mentioned in the abstract of cost for the bills.

12. The copy of Memorandum of Understanding between the contractor and supplier of RMC for RCC/CC not found in records.

13. The work of water proofing treatment is a specialized work as per CPWD Works Manual, hence, should be got executed through specialized agencies only. Also the guarantee bond prescribed for guarantee of water proofing work not found obtained from contractors.

Suggestion: All such works should be executed through specialized agencies who have executed similar nature of work of appropriate amount satisfactorily in recent past. Engineer-in-Charge has to ensure approval of specialized agencies based on their experience certificate issued by competent authority.

14. For small works whose estimated cost is below 15 lakhs, normal measurement books (Red) can be used. However, it is observed that the Computerized Measurement Books are being used even for small works resulting in misuse of CMB by contractor as Nos. of undue measurements found recorded in CMB's and paid by the department.

Suggestion : It is suggested that only normal MBs (Red) may be allowed to be used for works with estimated cost less than 15 Lakhs and provision for red MB may be kept as per clause 6 of GCC in schedule A to F of tender documents. Major deficiencies have been noticed in smaller works regarding undue measurements which were overlooked by the field staff while making payment of contractor's bills.

15. In Cement Register, the items for which cement is issued are not mentioned in the Cement Register to check theoretical quantity of cement required as well as actual issue as per cement register.

16. Invoice of materials like Cement, Steel etc. along with manufacturer's test certificate are not obtained.

17. Pre-measurements for the dismantling works are not found recorded and the dismantled material is not accounted for in MAS/Dismantled Account Register.

18. While recording the measurements, the specific locations/RD of road work not mentioned in measurement books.

19. In case, there is a delay on the part of the contractor due to slow progress, necessary letters may be written to the contractor from time to time and negative hindrances be recorded in hindrance register on account of delay on the part of the contractor. This will help the department while granting EOT with or without levy of compensation. It will also help in defending the various claims attributed to delay.

20. Relevant shuttering items not adopted while recording the measurements for shuttering of CC/RCC.

Suggestion: While recording the measurements for shuttering items, CPWD specification for different DSR items be followed to avoid undue payment to the contractor.

21. Hollow sound is being noticed in the tile/stone flooring as laying of mortar & cement slurry under tiles/stone is not done as per specification. The flooring/tile work are being carried out through unskilled workers.

22. In Aluminium frame work, butt joints are being provided instead of mitered joints as per required specification. The defects noticed in various items of work are due to poor workmanship as well as skilled labour.

Suggestion: Aluminium work is an important item of work for door, windows and, Aluminium partitions, hence this work should be executed through specialized /skilled workman.

23. The item of P/F MS sheet door with frame is in Sqm with specified frame of Angle Iron and diagonal brauss etc. along with gusset plates at junctions & corners. It is observed that the specification given in the item itself is not followed resulting to undue benefit to the contractor.

The above observations and suggestions are being issued as advisory which may vary from site to site. Hence, all field formations are requested to follow these advisory for ensuring good workmanship as well as quality of work.

This issues with the approval of E-in-C, PWD.

21/11/2020

(Mohan Lal)

SE, QAU, PWD

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SE (QAU)

CC: through website/email to

E-in-C, Pr.CE(M), Pr.CE(P), All CE's, PWD