

CHAPTER - V

5. DUTIES OF FIELD STAFF IN RELATION TO QUALITY OF WORKS

ASSISTANT EXECUTIVE ENGINEER / ASSISTANT ENGINEER CONSTRUCTION	ASSISTANT EXECUTIVE ENGINEER/ ASSISTANT ENGINEER QUALITY CONTROL
<p>1. Shall see that the markout of the area to be tackled is properly given, shuttering, centering, reinforcement are done as per drawings and technical specifications, <i>see test</i> to record the Pre levels/foundation levels, and to markout for canal excavation is perfectly given as per drawings. Prelevels, classification levels and final levels of canal shall be taken as per specification and got verified by Quality Control Assistant Engineer/Assistant Executive Engineer.</p> <p>2. Shall see that the construction equipment like mixers, vibrators, rollers, pumping arrangements for curing/watering are arranged before starting of any work.</p> <p>3. Shall see that sufficient quantities of input materials as per agreement specifications are made available at site of work and to arrange testing equipment, men and material required for conducting field tests on input materials or for sending samples of input materials to central lab.</p> <p>4. Shall write O.K. Cards after area is ready to start the work and to inform the Asst. Executive Engineer/Assistant Engineer Quality Control and Deputy Executive Engineer construction and take permission to start the work on O.K. Card.</p>	<p>1. Shall check the markout foundation /prelevels and centering/shuttering reinforcement arrangements and inform the Assistant Executive Engineer/Assistant Engineer construction to rectify the defects if any. Shall certify the markout of canal excavation as per drawings. Prelevels, classification levels and final levels of canal shall be checked.</p> <p>2. Shall check the adequacy of the construction equipment and curing/watering arrangements.</p> <p>3. Shall conduct the field tests on input materials, and record the results and to inform the Assistant Executive Engineer/Assistant Engineer construction to rectify the defects if any. To send the samples of input materials to central lab as and when required. To conduct core tests and other field tests as per I.S.I. incase of Embankment works.</p> <p>4. Shall check and write the O.K. card and record the deviations, defects if any or otherwise to record the final OK and to inform the Deputy Executive Engineer/Executive Engineer quality control and to permit to start the work.</p>
<p>5. Shall supervise and ensure that correct quantities of input materials as per mix design communicated by the central laboratory or fed into the mixers/batching plants etc., and shall ensure adequate mixing time.</p> <p>6. Shall ensure proper vibration, rolling etc., during course of day today work and to provide men and material required for extracting samples of finished product for quality control staff.</p> <p>7. Shall ensure proper curing of samples extracted till the curing time is over and to make arrangements to send the samples to central lab.</p> <p>8. Shall ensure timely green cutting of concrete with proper air - water gun : nicking & chipping (wherever so warranted) so as to prepare the surface for next concrete lift for effective bend at the lift/construction joints.</p>	<p>5. Shall make constant checks of the feeding of input materials mixing time and suggest the quantity of water depending on the moisture content of sand as and when required.</p> <p>6. Shall conduct slump test, record temperature of concrete, core tests, proctor of concrete, and proctor density etc., and to extract field samples of finished product to be sent to central laboratory later.</p> <p>7. Shall assist the Assistant Engineer / Assistant Executive Engineer/ Construction in Proper handling/ transport of samples to central lab.</p> <p>8. Shall check and see that the preparation of the surface is adequately done for starting the next lift.</p>

9. Shall ensure proper curing/watering and allow removal of centering only after the time limit prescribed in the specifications and to see that the surfaces are finished to the plumb/straight lines etc. after removal of shuttering.
10. Shall maintain (1) mark-out register (2) OK Card files (3) Load Register.
9. Shall check the adequacy of curing/watering and see that the final surfaces are finished neatly plumb/straight lines etc.
10. Shall maintain registers of field tests conducted.

The A.E.s/A.Es working at Owk tunnel both in construction and Q.C. shall pay special attention on Marking / checking the center line after every heading blasting & mucking.

1. Marking / checking the center line after every heading blasting & mucking.
2. Monitoring oxygen and carbon Monoxide levels in the tunnel as well as visibility.
3. Checking the alignment of concrete placement Gantry.
4. Monitoring Safety measures.

DEPUTY EXECUTIVE ENGINEER (CONSTRUCTION)	DEPUTY EXECUTIVE ENGINEER (QUALITY CONTROL)
<ol style="list-style-type: none"> 1. Shall exercise proper check over all the activities of Assistant Engineer/Assistant Executive Engineer, Construction. 2. Shall verify the foundation/ pre-levels, check the mark-out, reinforcement/ centering etc., invariably for all works. 3. Shall check feeding of input materials, mixing, placing, vibration rolling etc. 4. To ensure that the cement used at site of work is tested in the central laboratory. 5. Shall write the OK cards after satisfying about the arrangements made for starting of the work and report to the Executive Engineer/ Construction. Executive Engineer/ quality control accordingly. 6. Shall see that samples of finished products are transported to the central laboratory. 7. Shall personally supervise the rectifications pointed out by Executive Engineer Construction/Executive Engineer Quality Control. 8. Should arrange to get the foundations of soil tested incase of weak soil over which heavy Embankments are proposed. 9. He should send disturbed soil samples in various reaches well in advance to central laboratory and get the soil tested for various properties and obtain OMC and MDD values. 10. Shall order temporary suspension of work if any serious defects are noticed and shall intimate immediately to Executive Engineer Construction and Executive Engineer quality Control 	<ol style="list-style-type: none"> 1. Shall exercise proper check over all the activities of Assistant Engineer/Assistant Executive Engineer/ Quality Control. 2. He shall invariably check foundations of all components of works. Final OK is to be recorded before the work is started. Where heavy reinforcement is involved the same also should be checked invariably and final OK is to be recorded. 3. Shall check at random feeding of input materials, mixing, placing, vibration rolling etc. 4. Shall check the test reports of cement, date of manufacture etc., and satisfy before starting of the work. 5. Shall write O.K. cards as and when required and inform the Executive Engineer/Quality Control accordingly. 6. Shall conduct the field tests like slump, temperature of concrete at random. 7. Shall intimate the defects if any to the Executive Engineer Construction and Executive Engineer Quality Control, Check and verify whether rectifications are done as per the norms laid down in the contract specifications. 8. Shall assist the Deputy executive Engineer Construction in conducting these tests. 9. Shall assist the Deputy Executive Engineer Construction in sending the samples to central laboratory. 10. Shall order temporary suspension of work if any serious defects are noticed and shall intimate immediately to Executive Engineer Construction and Executive Engineer Quality Control.

DUTIES OF EXECUTIVE ENGINEER

Executive Engineer (Constn.)Executive Engineer (Q.C.)

1. Shall supervise, check, advise, and instruct the A.E./A.E.E./ D.E.E. Construction regarding discharge of their functions properly.
2. Shall intimate the Executive Engineer quality control regarding signing of agreement for starting of any new work, duly endorsing a copy of work order. Shall supply copies of contract documents, drawings Construction programme etc., to Executive Engineer Quality Control, and Superintending Engineer Designs and Inspection Circle.
3. Shall see that all ingredients of concrete, masonry are got tested before use. Shall see that the soils are tested for various properties like OMC, MDD, etc., before starting of Embankment work.
4. Shall see that all the Machinery/ equipment being used by the contractor is got periodically calibrated
5. Shall see that OK Cards are written and kept at site of work before starting of any work.
6. Shall order the suspension of work if any defects are noticed or reported by quality control staff and resume the work only after rectification of ~~defects~~ in the presence of quality control staff
7. Foundations and reinforcement, shuttering, centering where heavy reinforcement is involved is to be checked by Executive Engineer invariably before starting the work.
8. Shall jointly inspect the site with quality control Executive Engineer in case variation in classification is less than 10% (+/-) and finalise the classification.
9. Shall personally see that ~~the~~ samples are sent to the laboratories like A.P.E.R.L./N.C.C.B. regularly, obtain the results and communicate the same to Executive Engineer quality control.
10. Shall take the help of quality control Ex. Engineer whenever a dispute is referred to Technical Expert.

1. Shall supervise, check, advise and instruct the A.E./A.E./D.E.E. Quality control regarding discharge of their functions properly.
2. Shall maintain copies of approved Designs, reports, contract document, drawings, construction programme, extracts of inspection notes etc., and shall see that his subordinates go through the above documents.
3. Shall remind, ensure and verify whether test results are available or not before starting up of any new work.
4. Shall assist in upkeep and calibration of equipment.
5. Shall inspect and sign on O.K. Cards during field visits.
6. Shall order the suspension of work if any defects are noticed or reported by quality control staff and intimate his counter part to see that defects are rectified. If not rectified the matter is to be reported to the S.E./Quality Control.
7. Foundations and reinforcement, shuttering, centering where heavy reinforcement is involved is to be checked by Executive Engineer invariably before starting the work.
8. Shall jointly inspect the site with Construction Executive Engineer in case variation in classification is less than 10% (+/-) and finalise the classification.
9. Shall pursue and keep track of sending of samples to A.P.E.R.L./N.C.C.B. and to keep record of results received.
10. Shall co-ordinate with the EE/Construction division render assistance in resolving the issues referred to technical expert.