

SPECIAL CONDITIONS/SPECIFICATIONS FOR NS ITEMS

NS-3:-Reinforced Cement Concrete M-25

1. The Scope of work is providing cast in situ reinforced concrete in raft foundation, RCC Columns & bracings and bottom & Top Dome of over head tank.
2. Detailed drawings for RCC O.H Tank may be seen in the Division office North Western Railway, Bikaner during office working hours. Besides these drawings, the railway may come up with some different drawings in future and the contractor will have to carry out the work as per such drawings.
3. All materials required for cast in situ RCC like cement, sand, aggregate, water etc. will be arranged by the contractor as the rate are for finished product including cost of material complete. Only steel & cement for reinforcement will be paid under relevant item.
4. Concrete shall be as per mix design only. Concrete to be used in reinforced cement concrete shall be of M-25 or superior grade. Any reference as to the lower grade of concrete in any of the RDSO/Railway's drawings shall be considered to be referring to M-25 grade only. All the concrete shall be designed by any one of the approved methods given in IS-10262-1962 and IS-456-2000. The contractor shall get the mix design approved before starting the work. The concrete shall be weigh batched only. Test results of trial cubes as per mix design shall be made and got tested. The result of these tests should be produced at the time of submission of mix design.
 - i. Moisture content of the aggregate should be checked daily and allowance for its bulking and water content should be made in the mix proportions.
 - ii. 40mm/60mm needle vibrator shall be used for compaction.
 - iii. Form work shall be designed for vibration.
5. All the material required for cast in situ RCC shall be inspected by railway officials in order to ensure quality of raw materials and quality control in concreting. All arrangements for casting and curing will be done in presence of Engineer in-charge.
6. **Specification of materials:-** Material confirming to various IS/Railway standards shall only be used in work. After getting the approval for the same in writing from Engineer in-charge.
7. **Design Mix Specification-Concrete:**
 - (i) M-25 grade controlled concrete for RCC shall be used.
 - (ii) With a view to get quality concrete, various tests on cement ingredients viz. Fine and course aggressive, water and cement and admixtures and also samples of concrete to be used in the work shall be carried out as specified in various codes, maintained in classes either in field laboratory or laboratory approved by the Engineer in-charge at the cost of contractor. As a result of these tests, any changes warranted to ensure quality concrete as decided by Engineer in-charge shall be completed at no extra cost.
 - (iii) All controlled concrete mix shall be properly designed with available materials from a reputed laboratory approved by the Railway and submitted to railway before doing the work for approval. No extra payment will be made on this account.

- (iv) The mix shall be designed by any one of the approved methods given in IS-10262-1982 and IS-456-1979. The contractor shall get the mix design approved before starting the work. The concrete shall be weigh batched only. Test results of trial cubes as per mix design shall be made and got tested. The results of these should be produced at the time of mix design approval.
- (v) Moisture content of the aggregates should be checked daily and allowance for this water content should be made in the mix proportion. Vibrating and compaction shall be done with 40/60mm. Needle vibrator.
- (vi) Formwork shall be designed for vibration; exposed surface of concrete shall be kept continuously in damp or wet condition by covering with a layer of sack, canvas for at least 14 days from the date of placing of concrete.

8. RCC Quality Control Work.

The contractor will be required to exercise effective quality control over production, placement and curing of concrete at site. The contractor will ensure proper specifications as laid down in IS-456-1978. No extra payment for this quality control shall be admissible.

- (i) Samples from fresh concrete shall be taken as per IS-1192 (1959). The method of sampling and analysis of concrete and cubes shall be made, cured and tested in accordance with IS-516 (1959). In presence of the Engineers representative. No extra payment for carrying out such test will be made to the contractor.
- (ii) The test cubes of 15cm x 15cm x 15cm size will have to be prepared by the contractor. The number of cubes from any batch of concrete shall be as per IS-456 (1978).
- (iii) The contractor will maintain quality control charts at site of work, based on the test result, which should be made available to the inspecting officers on demand.
- (iv) Aggregate, sand and water to be used for RCC should conform to relevant ISI standard. Testing shall be made at contractor's cost to ensure quality.
- (v) No concreting will be allowed till reinforcement and shuttering work are properly checked and okayed in writing by the Engineer's representative.
- (vi) All concreting to be done for work shall be mechanically mixed by use of concrete mixture and properly compacted by use of vibrator.
- (vii) Contractor shall ensure one stretch concreting during one shift of concreting. Any rest/pauses such as for meals etc. should be adjusted accordingly with the consent of the Engineer representative.

N.S-4 For P & F fabricated Iron and G.I pipe Railing.

1. The welding of steel structure/railing should conform to relevant IS code 800 & 816. The size of welding will be as per approved drawing.
2. The steel members like plates, rounds, square angles etc. used for railing should be manufactured by SAIL, TISCO, Rastriya IISPAT or IISCO only.

3. Primer coat of red Oxide chrome primer confirming to IS-2074 and painting 2 coats with synthetic enamel paint of steel structure will also be done under this item.
4. The rates include cost of nut bolt and welding etc. if required and no extra payment will be made for the same. The size of nuts/weld will be as per approved plan. Item or as directed by the Engineer –Incharge.
5. The contractor will have to adopt required safety measures during erection and painting of steel railing as required for the safety of labour and traveling public.
6. It will be responsibility of contractor to make arrangement for quality check for welding of steel members as at his own cost.
7. For payment purpose only standard weight of section will be taken. However, weight of welding/nut bolts will not be considered.

N.S-5 For P & F Manhole Cover on top of Dome.

1. The welding of steel structure/railing should conform to relevant IS code 800 & 816. The size of welding will be as per approved drawing.
2. The steel members like 3 mm thick M.S plates, rounds ,square angles etc. used for Manhole Cover should be manufactured by SAIL, TISCO, Rastriya IISPAT or IISCO only.
3. Primer coat of red Oxide chrome primer confirming to IS-2074 and painting 2 coats with synthetic enamel paint of steel structure will also be done under this item.
4. The rates include cost of nut bolt and welding etc. if required and no extra payment will be made for the same. The size of nuts/weld will be as per approved plan. Item or as directed by the Engineer –Incharge.
5. The contractor will have to adopt required safety measures during erection and painting of steel railing as required for the safety of labour and traveling public.
6. It will be responsibility of contractor to make arrangement for quality check for welding of steel members as at his own cost.
7. Payment will be made for each Manhole cover. Work has to be carried out as per the description/specifications as given in the Tender Schedule.

N.S-6 For S& F Water Level Indicator

1. Wood gauge beam should be First class Teak Wood confirm I.S-12806.
2. Wood should free from knots and shall be close grained.
3. Gauge beam should be painted with 2 coats of synthetic enamel paint of approved quality and gauge metre should be made with painting as directed by the Engineer In-charge.
4. Pulling wire ropes of suitable size is to be provided.

5. Payment will be made for each Water level Indicator. All work is to be carried out as per direction & satisfaction of Engineer In-charge.

N.S-7 For P & F Lightening Conductor.

Work has to be carried out as per the specifications given in the Tender Schedule.

N.S-8 For P & F Internal Top Ventilators.

Work has to be carried out as per the specifications given in the Tender Schedule.

N.S-9 For Plaster 8 mm thick in C.M 1:2

1. Projecting burrs of mortar due to the gaps at joints in shuttering shall be removed and surface shall be scrubbed clean with wire brushes.
2. Cement Mortar (1cement: 2 coarse sand) with water proofing compound conforming to IS 2645 @ 3% by weight to be added.
3. The plaster shall be finished to a true and plumb surface and proper degree of smoothness as required.
4. Curing shall be started as soon as the plaster has hardened sufficiently and not to be damaged when watered. Plaster shall be kept wet for a period of at least 7 days.
5. Rate shall include the cost of all labour and materials involved in all operation described above.

NS-10 to NS-16:-Supply , Installation and commissioning & Annual Subscription intelligent:-

Work has to be carried out as per the specifications given in the Tender Schedule.

NS-17:-Annual Subscription intelligent:-

Work has to be carried out as per the specifications given in the Tender Schedule.

Date-

Place-

Signature of Tenderer/s

Address-