

Technical Specification

1.PIPES

- (a) All pipes shall conform to relevant specification indicated in the schedule of quantity and shall be ISI marked as per BIS- 3589-981 latest with up to date amendments. The length of pipe should be 5.5 to 7.5 mtrs.
- (b) Laying of pipe shall be governed by BIS 5822 latest (Code of practice for laying of welded steel pipes for water supply.)
- (c) All pipes line shall be tested in suitable sections after laying and as per clause 6.4.4 at page- 111 of manual on water supply and treatment. The procedure for test shall be in accordance with the clause 10.2 of BIS- 5822 latest. Final payment shall be released only after the satisfactory hydraulic test of the pipe line.

2.BENDS

- (a) Bends of MSERW/API pipes shall be fabricated from the parent tube to be used in respective sections, ends shall have three or more gussets with a bending radius of 5 times pipe dia to keep the frictional losses a minimum and should be factory made.
- (b) The circumferential butt welding, wherever required for the fabrication of bends and other specials shall be accomplished with three weld layers using 3mm and 4mm dia electrodes, after leveling the pipe ends.
- (c) All cut ends of the pipes shall be leveled properly prior to welding operations.

3.WELDING:

- (a) The electrodes to be used for welding shall conform to BIS- 814 latest and shall be over cords type of Advani oerlkon make.
- (b) Slip on flanges shall be welded on to the pipes with size of the leg of fillet weld equal to $1.4 \times "t"$ where "t" is the thickness of pipes.
- (c) Seal welding shall be provided to all flanges with atleast two passes, using 3mm electrodes.

4. FLANGES: Flanges shall conform- to BIS- 6392 latest with upto date amendments of Table as indicated in the schedule of quantity. The flange faces and contact surface finish shall strictly conform to the provisions of this code. The flanges shall be marked with class rating as per clause-11 of BIS- 6392 (latest with upto date amendments).

5. GASKETS:

Compressed Asbestous fibre (CAF) minimum 3mm thick shall conform to BIS- 2712 Hindustan Ferodo make ISI marked or synthetic rubber gasket conforming to BIS- 638- 1979 both latest with upto date amendments suitable for required working pressure/cm2.

6. BOLTS:

Bolts of carbon steel shall conform to BIS- 1364 latest with upto date amendments.

7. MISCELLANEOUS:

Before the pipe is lowered into the trenches, it should be ensured that even bedding is provided for pipe line. The pipes shall be lowered progressively with the help of necessary tools as per site conditions and according to the directions of the Engineer-in-Charge. Care shall be taken to ensure that the longitudinal seam on the consecutive pipe are staggered by least 30 degree and should keep in the upper one third of the pipe.

The anchor blocks shall be constructed as per drawings/ design approved by Engineer-in-Charge.

GENERAL CONDITIONS

1. The alignment shown in the DNIT is subject to change as per site condition and most suitable and technically feasible alignment as per directions of Engineer-in-Charge shall be followed at site and nothing extra shall be paid beyond the approved rates.
2. All machinery/ equipment required for laying of pipes shall be arranged by contractor/firm.
3. The firm has to give its working schedule within the total time limit of contract for various components before start of work and get the same approved from Engineer-in-charge.
4. The measurement for providing, laying and jointing of pipes laid shall be made only after the same is tested as per technical specification No. 1©. The back filling shall be allowed only after the said testing.
5. L-section/ Plans of the pipe line can be seen in the office of Executive Engineer, I&PH Division No.1 Una on any working day.
6. The firm shall made all the arrangements for working in night hours (if required) at his own cost and nothing extra shall be paid on this account.

7. Any damage caused to metalled/ unmetalled road, streets, paths and to any other structure outside the alignment of pipe line during the execution of work by firm will be restored on its original condition by the firm at its own cost.
8. The rates of all the items shall be inclusive of the carriage of all the materials within all leads and lifts to the site of work.
9. The work shall be executed as per relevant BIS- code with latest amendments, Punjab PWD specification/ recommendation of manual of water supply and treatment and to the entire satisfaction/ direction of Engineer-in-Charge.
10. The pipes shall be inspected by the inspecting officer appointed by the Engineer-in-charge before dispatch of same from the manufacturers works.
11. Number and location of air valves and scour tees is tentative and is subject to change as per site requirements. Actual location shall be decided by Engineer-in-charge and payment shall be made as per actual number provided at site.
12. Location and details of bends shown in the plan is tentative and bends of appropriate size and degree as per site conditions and technical specifications appended in DNIT shall be provided at site as per directions of Engineer-in-charge.
13. The contractor should have the experience of having executed similar works.
14. No conditional and telegraphically tender will be accepted.
15. All permits and licenses if required shall be arranged by the contractor himself at own cost. The department will however extend assistance in procuring the same . No claims of what so ever nature will be entertained due to any delay or failure in arranging these permits and license.
16. Any material left on site of work after a month after the date of completion of the work shall become the property of IPH Department and no payment shall be made to the contractor for that material.
17. The Govt. material shall be issued to the contractor at the place of delivery as mentioned at page of the tender/documents and all the cost of carriage from the place of issue of the work including all other incidental charges such as loading and unloading etc. shall be born by the contractor.

18. The consumption account of the material issue by the department will be maintained properly by the contractor and shall be presented for scrutiny whenever demanded by the departmental officers. The contractor will however remain responsible for the safe custody of material.
19. The contractor is not at liberty to remove from site of work any material issued by the department before completion of the work without the written permission of the Engineer-in-Charge.
20. The royalty, toll tax and other local taxes, if any, except income tax shall be paid by the contractor direct to the respective department in accordance with their rules and regulations enforced from time to time without intervention of the IPH Department.
21. Security deposit will be released after six months from the date of completion of work.
22. 2% sale tax, 2.25% income tax and 10% security will be deducted from the each bill of the contractor.
23. 3rd party inspection will have to be carried out by the contractor in respect of MSERW pipe own cost from the 3rd party i.e. RITES, BUREAU VARITES, DET NORSAKE, VARITES, QSS and SGS.
24. Test certificate from the original manufacturer will be supplied by the contractor along with supply of MSERW pipes.
25. The contractor shall supply a copy of indent to the Engineer-in-Charge indicating complete specification of the material, order placed on the principle manufacturer of their authorized dealer immediately after placing the order.
26. 10% payment shall be with held on account of testing against each running bill.

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