

Section~7:
Technical Specifications

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Section-7: Technical Specifications

PREAMBLE

1.0 The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents.

1.1 Site Information General

1.1.1 The site is situated at village Bhauri, near IISER Campus, Bhopal. The natural ground condition of the site has good bearing capacity with hard rocky strata.

1.1.2 The area in which the works are located is in plain terrain, the approximate longitude and latitude of the region (Bhopal) being 77° 16" East and 23° 17" North.

1.1.3 Climatic Conditions

1.1.3.1 The temperature in this region is as under:

- i) During summer months, the average maximum temperature is 42°C.
- ii) During winter months, the average minimum temperature is 18°C.

1.1.3.2 The average annual rainfall in the area is of the order of 800mm.

1.1.4 Seismic Zone

The works are located in Seismic Zone-II as defined in IS: 1893(Part I) - 2002

2 GENERAL REQUIREMENTS

The Technical Specifications in accordance with which the entire work described hereinafter shall be constructed and completed by the Contractor shall comprise of the following:

Part-I

Additional conditions, additional specifications and important notes

“A” ADDITIONAL CONDITIONS

1. The work shall be carried out in accordance with the architectural drawings and structural drawings to be issued by the Dean (P & D), the structural and architectural drawings shall at all times be properly correlated before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and architectural drawings relating to the relevant item, former shall prevail unless otherwise given in writing by the Dean (P & D).
2. The Contractor shall, at his own expense, provide all materials, required for the works. Unless otherwise specified, the materials used on the work shall bear “Standard Mark “of the ‘Bureau of Indian Standards’. It shall be the responsibility of the contractor to ascertain the sources from where the materials having ‘Standard Mark’ are available. The materials, in general, shall conform to the requirements of MATERIALS of The CPWD Specifications.
3. The contractor shall maintain safe custody of materials brought to the site. For Cement and Steel and other materials as prescribed, the quantities brought at site shall be entered in the respective material at site accounts and shall be treated as issued for maintenance of daily consumption. The Cement and Reinforcement Steel shall be procured as per conditions laid down hereunder.

4. Some restrictions may be imposed by the security staff etc. on the working and / or movement of labour, materials etc. and the contractor shall be bound to follow all such restrictions/ instructions and nothing extra shall be payable on this account.
5. Labour will not be permitted to stay in the building under construction.
6. The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable and nothing extra shall be payable on this account. The work shall be carried out without infringing on any of the local Municipal Bye-Laws.
7. Any damage done by the contractor to any existing work during the course of execution of work tendered for shall be made good by him at his own cost.
8. The rate for every item of work to be done under this contract shall be for all heights, depths, lengths and widths of the structure (except where specially mentioned in the item) and nothing extra will be paid on this account.
9. The contractor shall take all precautions to avoid all accidents by exhibiting necessary caution boards such as day and night boards, speed limit boards and flags, red lights and providing barriers etc. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of work. Nothing extra shall be paid on this account.
10. The contractor will work in close liaison, during the works, with other contractors of water supply, sanitary, drainage arrangements, electrical installation and any other works and adjust his work plan accordingly.
11. Other agencies doing work of electrification, external services, other building works, horticulture works etc for this project will also simultaneously execute the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, opening etc for laying/buying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc as may be required for the electric and sanitary works etc. and nothing extra over the agreement rates shall be paid for the same.
12. The contractor shall keep the site clear thoroughly of rubbish, useless scaffolding and materials etc. from time to time as well as before the actual date of completion of the work as per directions of the Dean (P & D).
13. The contractor shall make his own arrangement for obtaining electric / water connections, if required and make necessary payment directly to the department concerned.
14. Materials brought at site of work shall not be used in the work before getting satisfactory test results. For details relevant provisions in C.P.W.D. Specifications for Works 2009 Vol. I to II shall be referred to.
15. The contractor shall maintain in perfect condition all works executed till the completion of entire work allotted to him.

Dean (P & D)
Institute Works Department
SPA Bhopal

“B” ADDITIONAL SPECIFICATIONS

1. GENERAL

The entire work shall in general conform to the C.P.W.D. Specifications for works **2014 Vol. I to Vol. II** with correction slips issued up to date and description in the Schedule of quantities, additional conditions, particulars, specifications latest relevant Bureau of Indian Standard codes and the drawings. All the above quoted documents shall be considered complementary to each other. However, in case of conflict among the various provisions, the following order of precedence shall be followed.

- i) Provision in nomenclature of item in schedule of quantities, including drawings if any mentioned there in
- ii) Additional Conditions.
- iii) Particulars specifications
- iv) CPWD Specifications.
- v) Latest relevant B.I.S. codes.
- vi) Drawings of the work not specifically mentioned in the nomenclature of the item and
- vii) The decision of the Dean (P & D) given in writing based on sound engineering practice and local usage shall be final and binding on the contractor.

The work shall be executed and measured as per Metric Dimensions given in the schedule of quantities etc. (F.P.S. units wherever indicated are for guidance only).

- 1.1.1. Should there be any difference between the specifications mentioned above and the specifications given in the schedule of quantities, the later shall prevail.
- 1.1.2. If the specifications for any item are not available in the CPWD Specifications cited above, relevant BIS Specifications should be followed.
- 1.1.3. In case BIS Specifications are also not available, the decision of Dean (P & D) given in writing based on acceptable sound engineering practice and local usage shall be final and binding on the contractor.
- 1.2. The work will be carried out in accordance with the architectural drawings and structural drawings to be issued by the Dean (P & D). The structural and architectural drawings shall have to be properly correlated before executing the work.
 - 1.2.1. In case of any difference noticed between Architectural and Structural drawings, the contractor shall obtain final decision in writing of the Dean (P & D).
 - 1.2.2. In case of any discrepancy in the item given in the schedule of quantities appended with the tender and architectural drawings relating to the relevant item, former shall prevail unless otherwise given in writing by the Dean (P & D)
- 1.3. For items where so desired, samples shall be prepared before starting the particular items of work for prior approval of the Dean (P & D) and nothing extra shall be payable on this account.
- 1.4. Materials brought at site of work shall not be used in the work before getting satisfactory **Mandatory test** results. For details, relevant provisions in the CPWD specification shall be referred to.
 - 1.4.1. Wherever it is desired to procure factory-made materials, such factory-made materials shall be procured from reputed and approved manufacturers or through their authorized dealers. The contractor shall obtain the approval from the Dean (P & D) of such firms prior to procurement of such factory-made materials. The Dean (P & D) may, at any stage, inspect such factories/ manufacturing units. The contractor shall have no claim if the factory made materials brought to the site are rejected by the Dean (P & D) in part or in full due to bad workmanship/ quality etc. even after the inspection of the manufacturing units.
 - 1.4.2. The manufactured materials brought at site of work shall, in general, conform to the relevant specifications. The source for supply of the manufactured materials shall be approved by the Dean (P & D). The contractor shall have no claim if the manufactured materials brought to the site are rejected by the Dean (P & D) in part or in full due to bad workmanship/ quality etc.
 - 1.4.3. The preference amongst the various alternative materials available shall be as follows: -

- (a) The materials shall be as per the Brand specified to be used in the work.
 - (b) If the Brand specified material is not available then the material shall be ISI marked.
 - (c) If ISI marked item is not available then it should be from ISO certified Company.
 - (d) If the ISI marked or ISO certified items are not available then the best available items in the market to be procured.
- 1.4.4. Equivalent for the various materials and the materials of approved make shall be got approved from the Dean (P & D) of work in writing before using them on the work.

2. The following modifications to the above specifications shall, however, apply

2.1. Earth Work

- 2.1.1. During excavation and trenching work etc., the contractors shall ensure compliance to the guidelines in such matters laid down by the local body / bodies to ensure that there is minimum hazard to the operating personnel's and users, minimum inconvenience to the users, minimized damage to the underground plant/services of other utilities in a coordinated way, in the interest of public convenience and overall safety.
- 2.1.2. Any trenching and digging for laying sewer lines/ water lines/ cables etc. shall be commenced by the contractor only when all men, machinery's and materials have been arranged and closing of the trench(s) thereafter shall be ensured within the least possible time.
- 2.1.3. Surplus excavated earth which is beyond the requirement of the SPA Bhopal shall have to be disposed of by the contractor at his own cost beyond the municipal limits or at places identified by the local bodies or as directed by the Dean (P & D) after obtaining written permission of the Dean (P & D) and no payment will be made by the Department for such disposal of this surplus excavated earth.
- 2.1.4. The contractor shall, at his own expense and without extra charges, make provision for all shoring, pumping, dredging or bailing out water, if necessary, irrespective of the source of water. The foundation trenches shall be kept free from water while all the works below Ground Level are in progress, without any extra payment.

2.2. Reinforced Cement Concrete Work & Plain Cement Concrete- General

2.2.1. Stone Aggregate.

Stone aggregate to be used in the work shall be of hard broken stone to be obtained from source approved by Dean (P & D) and shall conform to the relevant provisions in the CPWD Specifications.

2.2.2. Fine Sand / Course Sand:

Fine sand / Coarse sand to be used in the work shall be obtained from sources approved by Dean (P & D) and shall conform to the relevant provisions in the CPWD Specifications.

Where only one variety of sand is available, the sand will be sieved for use in finishing work to achieve the required particle size distribution as per CPWD Specifications in order to obtain smooth surface and nothing extra shall be paid to the contractor on this account.

2.2.3. Water: It shall conform to requirements laid down in IS: 456-2000 and CPWD Specification

2.3. R. C. C. work (Design Mix Concrete): Wherever the RCC work is specified to be done with Design Mix Concrete, the particular specifications, as applicable, shall apply.

2.5. Non-destructive Testing for Concrete/R.C.C Work:

The Dean (P & D) shall, at his discretion, get the non-destructive testing (Such as Ultrasonic Pulse Velocity Test etc.) done and the Contractor shall make all necessary arrangements for getting such tests done and make good the same after the test, for which nothing extra shall be paid. The results of such tests shall be binding on the Contractor. In case of non-conformity of the test to the standards, the contractor shall be liable to re-do the concrete work at his cost

including the cost of test, subject however, to the acceptability of the work as laid down in the mandatory test defined in the relevant CPWD specifications.

2.6. Cement slurry,

if any, added over base surface (or) for continuation of concreting for better bond is deemed to have been in built in the items (Unless otherwise explicitly stated) and nothing extra shall be payable (or) extra cement considered in consumption on this account.

2.7. Centering and Shuttering For R.C.C Work:

The concrete surface shall be free from honeycombing, offsets, superfluous mortar, cement slurry and foreign matter. The formwork shall be assembled in such a way as to facilitate removal of their parts in proper sequence without any damage to the exposed cement concrete surfaces and corners etc. The contractor shall keep skilled staff for special care and supervision to check the formwork and concreting so that every member is made true to its size, shape, level and alignment so that it does not result in any deformation, snag, buldges etc. The contractor shall also take suitable precautionary measure to prevent breaking and chipping of corners and edges of completed work until the building is handed over. The size of shuttering plates for slabs shall not be less than 0.6m x 0.9m in general. However, contractor has to provide tape or wooden fillets or rubber gaskets to seal the joint properly to get smooth surface. Further shuttering shall be of such quality that there are no undulations and surfaces will be fairly even and no extra thick ceiling plaster shall be permitted to make the surface even. Any honey-combed or poorly formed concrete shall be repaired with polymer concrete of any suitable design by the Contractor at his own cost, in accordance with the specifications laid down in hand book of Repairs and Rehabilitation of RCC Buildings by CPWD.

2.8. BRICK WORK:

Bricks used in the work shall be M.K.S. to be obtained from kilns approved by Dean (P & D). In all other respects they shall conform to the provisions in CPWD specifications.

2.9. STONE WORK:

Stone used for stone masonry work shall be hard granite/ basalt/ quartz stone/sand stone to be obtained from quarries approved by Dean (P & D) and shall conform to the relevant provision in the CPWD specifications.

2.10. All above materials like stone aggregates, coarse sand, fine sand, Bricks, Surkhi, Stone etc conforming to the CPWD specifications to be brought from the sources approved by Dean (P & D). In case, at any stage during execution of work, the material from the approved source being not available or otherwise, and, is required to be arranged from other sources conforming to relevant CPWD specifications and duly approved of Dean (P & D), involving extra lead etc. nothing extra shall be paid on this account.

2.13 STEEL WORK:

All steel doors, steels windows, steel ventilators, wire gauge, steel glazing, steel grill shall be factory made and obtained from suppliers approved by the Dean (P & D).

2.13.1 In the case of composite steel windows the rates shall include the cost of coupling mullion and transom etc. Where windows with inside open able shutters are fixed along-with windows with shutters open able outside, such inside open able windows shall be fitted with suitable friction hinges and open able outside with box type hinges, lever handles or otherwise as approved by the Dean (P & D) of the work. For such windows, cement concrete blocks of size 15cm x 10cm x 10 cm shall be provided nothing extra shall be paid on this account.

2.13.2 In the case of steel windows and doors, steel glazing, wire gauge steel ventilators, rolling shutters, grills etc. an approved quality-priming coat of zinc chromates shall be applied over and above shop coat of primer. Nothing extra shall be payable for providing shop-coat primer.

Dean (P & D)
Institute Works Department
SPA BHOPAL

Part-II

Additional conditions and specifications for steel & cement

GENERAL

The quoted rates for various items in the tender shall be inclusive of all the additional conditions and particular specifications and for adherence to all these conditions and specifications, no extra payment shall be made to the contractor. Any infringement and/or breach of these specification and condition(s) etc. shall render the contractor liable to action(s) under various clauses of the contract and such action stipulated in conditions therein.

“A” ADDITIONAL CONDITIONS

- i. The Contractor shall maintain safe custody of materials brought to the site. The Contractor shall also employ necessary watch and ward establishment for the work and other purposes as required at his own cost.
- ii. For Cement and Steel and other materials, as prescribed, the quantities brought at site shall be entered in the respective material at site accounts and shall be treated as issued for maintenance of daily consumption.
- iii. The procurement of Cement and Reinforcement Steel, and, their issue and consumption shall be governed as per conditions laid down hereunder.

1. Cement

- 1.1. The contractor shall procure 43 grade (Conforming to IS:1489)Portland Pozzolana Cement, as required in the work, from reputed manufactures of cement, having a production-capacity of one million tonnes per annum or more, such as A.C.C. L&T, Vikram, Shri Cement, Gujrat Ambuja Cement and Cement Corporation of India etc. as approved by Ministry of Industry. Government of India, and holding license to use ISI certification mark for their product whose name shall be got approved from Engineer-in-Charge. Supply of cement shall be taken in 50 kg bags bearing manufacture's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Dean (P & D) and got tested in accordance with provisions of the relevant BIS codes. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Dean (P & D) to do so.
1. 2. The Cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Dean (P & D)
- 1.3. The cement godown of the capacity to store about 2000 bags of cement or as decided by the Dean (P & D) shall be constructed by the contractor at site of work for which no extra payment shall be made. Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Dean (P & D) or his authorized representative and the key of other lock shall remain with the contractor. The contractor shall facilitate the inspection of the cement godown by the Dean (P & D) at any time.

1.4 The contractor shall supply free of charge the cement required for testing. The cost of tests shall be borne by the contractor/ Department in the manner indicated below:

- (i) By the contractor, if the results show that the cement does not conform to relevant BIS codes.
- (ii) By the Department, if the results show that the cement conforms to relevant BIS codes.

2. Steel:

2.1 The contractor shall procure steel reinforcement bars conforming to relevant BIS codes from main producers as approved by the Ministry of Steel or from secondary producers and re-rollers having BIS License to produce CTD bars as specified in schedule –F subject to following stipulations:

- (i) If it is provided in the agreement that steel is to be procured from primary producers and procurement of steel from secondary producers is allowed then a deduction based on the difference in market rate of steel from primary producers and secondary producers shall be made in the running/final bills.
- (ii) However, if the stipulation is for procurement of steel from secondary producers then if the contractor uses steel from primary producers the same shall be allowed but nothing extra shall be payable on this account.
- (iii) The contractor shall have to obtain and furnish test certificates to the Dean (P & D). The contractor shall have to obtain and furnish test certificates to the Dean (P & D) in respect of all supplies of steel brought by him to the site of work. Samples shall also be taken and got tested by the Dean (P & D) as per the provisions in this regard in the relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of work within; a weeks' time from written order from the Dean (P & D) to do so.

* Deduction item made on account of use of steel from secondary producers instead of primary producers shall not be treated as sub-standard work

2.2 The steel reinforcement shall be brought to the site in quantity of lots as approved by the Dean (P & D).

2.3 The steel reinforcements shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different sizes (diameters) and lengths shall be stored separately to facilitate easy counting and checking.

2.4 For steel procured from main producers, for checking nominal mass, tensile strength, bend test, etc. specimen of sufficient length shall be cut from each diameter of the bar at random at frequency not less than that specified below. In case of works costing more than 2 Crores and when the steel is procured from other than main producers, additional tests such as, retest, re-bend test, elongation test, proof stress may also be conducted

S.N.	Size (Diameter) of bar	For consignment	
		Below 100 tonnes	Over 100 tonnes
1	Under to 10mm dia	One sample for each 25 tonnes or part thereof	One sample for each 40 Tonnes or part thereof
2	10mm to 16mm dia	One sample for each 35 tonnes or part thereof	One sample for each 45 Tonnes or part thereof.
3	Over 16mm dia	One sample for each 45 tonnes or part thereof.	One sample for each 50 Tonnes or part thereof.

- 2.5 The contractor shall supply free of charge the steel bars required for testing. The cost of tests shall be borne by the contractor/ Department in the manner indicated below:
- 2.5.1 By the contractor, if the results show that the steel does not conform to relevant BIS codes.
- 2.5.2 By the Department, if the results show that the steel conforms to relevant BIS codes.
- 2.6 Coefficient of weight i.e. the weight per unit length of the steel procured by the contractor shall be ascertained at site before using it and certified by the Dean (P & D) In case weight per unit length is beyond the rolling margin as laid down in the BIS: 1786, the steel will be rejected and shall be removed from the site of work within; a weeks' time from written order from the Engineer-in-Charge to do so. In case weight per unit length is more than the standard coefficient of weight for the diameter, but is within the rolling margin, then the payment shall be made as per the standard weight per unit length, and, where the weight per unit length is lesser than the standard coefficient of weight for the diameter, but is within the rolling margin, the payment shall be restricted with respect to the actual weight per unit length of the diameter.
- 2.7 The standard sectional weights referred to in standard table under Para 5.3.3., page 75 of the revised CPWD Specifications 2002 for Cement Mortar, Cement Concrete and RCC works, are to be considered for conversion of length of various sizes of Steel Reinforcement bars into weight and are reproduced below for ready reference.

SIZE (mm)	WEIGHT (Kg/M)	SIZE (mm)	WEIGHT (Kg/M)
6	0.222	20	2.470
8	0.395	22	2.980
10	0.617	25	3.850
12	0.888	28	4.830
16	1.580	32	6.310
18	2.000	36	7.990

- 2.8 The actual issue and consumption of steel and Cement on the work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein.
- 2.9 Steel and Cement brought to site and remaining unused shall not be removed from site without the written permission of the Engineer-In-Charge.
- 2.10 Cement used in Ready Mix Concrete shall be evaluated based on the certification by the incharge of the RMC Plant in accordance with design approved by the Dean (P & D)
- 2.11 No payment shall be made to the contractor for any damage caused during the execution of work because of cause(s) not covered under Clause 43 of the Contract. The damage to work will be made good by the contractor at his own cost, and no claim on this account shall be entertained.
- 2.12 Some restrictions may be imposed by the security staff etc. on the working and/ or movement of labour, materials etc. and the contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on this account.
- 2.13 The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable and nothing extra shall be payable on this account. The work shall be carried out without infringing on any of the local Municipal Bye-Laws.

- 2.14 The contractors shall given a performance test of the entire installations as per standard specifications before the work is finally accepted and nothing extra what so ever shall be payable to the contractor for the tests.
- 2.15 The rate for every item of work to be done under this contract shall be for all heights, depths, lengths and widths of the structure (except where specially mentioned in the item) and nothing extra will be paid on this account.
- 2.16 The contractor shall take all precautions to avoid all accidents by exhibiting necessary caution boards such as day and night boards, speed limit boards and flags, red lights and providing barriers etc. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of work. Nothing extra shall be paid on this account.
- 2.17 The contractor will work in close liaison, during the works, with other contractors of water supply, sanitary, drainage arrangements, electrical installation and any other works and adjust his work plan accordingly.

2.18 Other Taxes and Royalties

- 2.18.1 **Income Tax and surcharges over Income Tax etc.** at the rates fixed by the Ministry of finance, Government of India shall be deducted from all the running and final bills of the contractor. Should there be any increase in rate of Income Tax and surcharge during execution of the contract, the same shall be payable by the contractor.
- 2.18.2 **Works Contract Sales Tax** as prevalent as per statutory orders of State/Central Government and shall be charged on gross value of all the bills and shall be recovered from each bill of the contractor as 'works contract sales tax'. Should there be any increase in rate of Works Contract Sales Tax during execution of the contract, the same shall also be payable by the contractor.
- 2.18.3 **Labour & Building Workers Tax** as prevalent as per statutory orders of State/Central Government and shall be charged on gross value of all the bills and shall be recovered from each bill of the contractor as 'Labour & Building workers tax'. Should there be any increase in rate of Works Contract Sales Tax during execution of the contract, the same shall also be payable by the contractor.
- 2.18.4 **Royalty** shall have to be paid by the contractor on all materials such as stone, bricks, boulders, metal, shingle, bajri, stone aggregate, coarse sand and fine sand etc. or any other materials used for the execution of the work direct to the Revenue Authority of the District/State Govt, concerned. The contractor shall obtain "No Demand" certificate from the District/State Govt authority concerned before the final bill is paid, failing which necessary recovery will be effected at the applicable rates in the final bill.
- 2.18.5 The contractor shall have to bear the cost of non-judicial stamp paper of appropriate value for preparation of contract agreement of the work.

2.19 Secured Advances:

- 2.19.1 Secured advance on bricks, stone, stone aggregate brought at site for use in the work shall be paid only after receipt of satisfactory test results from the laboratory and provisions under rules.
- 2.19.2 Secured advance on steel doors, steel windows, etc. shall be paid only after the Institute Architect has personally verified that the materials brought at site of work, for use in work, conform to the sample approved by him.
- 2.19.3 Secured advance whenever admissible on water supply, sanitary installation materials and fittings shall be allowed only after the Dean (P & D) has verified that materials brought at site have been checked by him personally and are in conformity with the samples approved by him.
- 2.19.4 Secured advance for terrazzo tiles shall be paid only after satisfactory results are received from the laboratory.

Part-III**List of make/brand for various items / products to be in work**

Name of Work: Construction of Ramp and S.S. Railing with 304 grade steel in Students Amenities Block & Assistant Professor Quarters at School of Planning & Architecture Bhopal at Bhourri, Bhopal (M.P.).

S. No.	Material / article	Conforming IS code	Manufacturers / Agencies / brand / make
1	Cement	IS 1489(Part 1) 1991	Portland pozzolana Cement 43 grade (Conforming to IS: 1489) from reputed manufactures of cement such as A.C.C. L&T, JK,Vikram, Shri Cement, Gujrat Ambuja Cement and Cement Corporation of India etc. as approved by Ministry of Industry, Government of India, and holding license to use ISI certification mark for their product whose name shall be got approved from Engineer-in- Charge.
2	Steel Reinforcement	IS 1786:2008	Steel reinforcement bars conforming to relevant BIS codes from main producers as approved by the Ministry of Steel Thermo mechanically treated cold twisted bars Fe-500conforming to IS 1786:2008from approved brands like SAIL, TATA TISCO, RINL,JINDAL etc.
3	Sand	~	River sand, Crusher stone dust(source/crusher for sand/stone dust to be approved by Dean (P & D))
4	Pvc Pipe	IS : 13592	Swastik,supreme,kisan

NOTE:

1. For any other make, prior approval of Dean (P & D) SPA Bhopal is required before execution in work.
2. All mandatory tests and other tests shall be made as per the departmental guidelines applicable and as required by Dean (P & D) SPA Bhopal.
3. Refer CPWD Specification 2014 for CIVIL Works.

Dean (P & D)
Institute Works Department
SPA Bhopal

CERTIFICATE

I/we hereby undertake that I/We/My authorized representative have received the copy of the stated list (along with the tender document) of brand names of various items to be used for the above work and I/We shall quote my rates of various items of schedule accordingly. I hereby also certify that I shall use only the above referred brands in the work and in case any other brand is used then I shall not claim for the payment of that item.

Signature of Contractor
or his authorized representative with Seal