


SECTION-I	PRESS NOTICE	
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**POSTGRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH,  
CHANDIGARH.  
DEPARTMENT OF HOSPITAL ENGINEERING & PLANNING  
CIVIL-I DIVISION  
Phone No. 0172-2755860.**

**NOTICE INVITING e-TENDER**

The Hospital Engineer (Civil-I), PGIMER Chandigarh invites on behalf of the Director PGIMER, Chandigarh **online Percentage rate bids** from the enlisted contractors of appropriate class of CPWD/Department of Posts/BSNL/Railways/M.E.S./Chandigarh Administration/ CHB/MC Chandigarh/State PWD's/HUDA /PUDA/ State Electricity Boards & Corporations dealing in **Civil works or Composite works** on Two bid system (Eligibility & Financial Bid) for the following works:-

**NIT No.:** PGI/Engg./Civil-I/2026/157, **Name of Work:** **Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh, Estimated Cost:** Rs.7.52 Lakh, **Earnest Money:** Rs.15,040/-, **Period of Completion:** 12 Month, **Last date and time of submission of bid:** 06.05.2026 upto 4.00 P.M., **Last date & time for submission of Original EMD or EMD exemption certificate for MSE/MSME:** 07.05.2026 upto 4.00 P.M, **Date and time of opening of Eligibility bid:** 08.05.2026 at 3.00 P.M.

The Original EMD or EMD exemption certificate for MSE/MSME as scanned & uploaded shall be deposited physically by all the intending bidders in the office of H.E. (Civil-I) as per above schedule failing which the bid shall be treated as invalid.

The MSME firms registered in NSIC under PP policy are exempted from payment of EMD for goods and services only.

The tender forms and other details can be obtained from the website: [www.eprocure.gov.in/eprocure/app](http://www.eprocure.gov.in/eprocure/app), and official website of the PGIMER [www.pgimer.edu.in](http://www.pgimer.edu.in). **Press notice is also available on [www.eprocure.gov.in](http://www.eprocure.gov.in). The Contractors are requested to get their firm registered on the website [www.eprocure.gov.in/eprocure/app](http://www.eprocure.gov.in/eprocure/app) for participating in e-tendering process.**


**For any technical information Contact (0172-2755860).**

**Hospital Engineer (Civil-I)  
PGIMER, Chandigarh**

<b>SECTION-II</b>	<b>CHECK LIST</b>	
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**CHECK LIST FOR CONTRACTORS FOR SUBMISSION OF TENDERS ONLINE:**

1. THE FIRM MUST UPLOAD THE NECESSARY DOCUMENTS AS MENTIONED IN LIST OF DOCUMENTS TO BE SCANNED AND UPLOADED WITHIN THE PERIOD OF BID SUBMISSION AT PAGE 9 OF BID DOCUMENTS.
2. IF ANY DISCREPANCY IS NOTICED BETWEEN UPLOADED EMD AT THE TIME OF SUBMISSION OF BID AND ORIGINAL EMD OR EMD EXEMPTION CERTIFICATE FOR MSE/MSME SUBMITTED PHYSICALLY BY THE BIDDERS IN THE OFFICE OF THE BID OPENING AUTHORITY, THE BID SUBMITTED SHALL BECOME INVALID.
3. TENDER TO BE WITNESSED AT SPECIFIED PAGE OF TENDERED DOCUMENTS AT THE TIME OF DRAWING AGREEMENT WITH THE SUCCESSFUL BIDDER.
4. THE TENDER / TENDERS CONTAINING CONDITIONS CONTRARY TO THOSE SPECIFIED IN THIS DOCUMENT SHALL BE SUMMARILY REJECTED.
5. THE INTENDING BIDDER SHALL QUOTE HIS PERCENTAGE RATE IN FIGURE ONLY. THE RATES IN WORDS, AMOUNT AND THE TOTAL IS GENERATED AUTOMATICALLY. THEREFORE, THE RATE QUOTED BY THE BIDDER IN FIGURES IS TO BE TAKEN AS CORRECT.
6. THE CONTRACTOR(S) SHALL QUOTE THE PERCENTAGE RATE RATES KEEPING IN MIND, GENERAL CONDITIONS OF CONTRACT FOR CPWD WORKS 2023 ALONGWITH AMENDMENT UPLOADED ON THE WEBSITE OF PGIMER, SPECIAL CONDITIONS OF CONTRACT ETC.
7. IT MAY BE NOTED THAT IN THE PRESENT CONTRACT CLAUSE 10B (ii) & CLAUSE 10CA, 10C & 10CC IS NOT APPLICABLE.
8. ONCE THE BID UPLOADED BY THE BIDDER IS WITHDRAWN, HE WILL NOT BE ALLOWED TO RESUBMIT HIS BID, HOWEVER, HE CAN EDIT HIS BID ANY NUMBER OF TIMES BUT BEFORE LAST DATE & TIME OF SUBMISSION OF BID.

<b><u>SECTION-III</u></b>	<b><u>Form- 6 FOR e TENDERING</u></b>	
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1. Percentage rate bids are invited on behalf of the Director, PGIMER, Chandigarh from the enlisted contractors of appropriate class of CPWD / Department of Posts / BSNL / Railways / MES. / Chandigarh Administration / CHB / MC Chandigarh / State PWD's / HUDA / PUDA / State Electricity Boards & Corporations dealing in **Civil works or Composite works** for the work of **Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh.**

The enlistment of the contractors should be valid on the last date of submission of bids.

In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

- 1.1 The work is estimated to cost: **Rs.7.52 Lakh**. This estimate, however, is given merely as a rough guide.
- 1.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.

For composite bid, besides indicating the combined estimated cost put to bid, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

- 1.2 Intending bidders is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-

a) Three similar works each are costing not less than **Rs.3.00 Lakh**, or **Two similar works each costing not less than Rs.4.50 Lakh**, or **one similar work costing not less than Rs.6.00 Lakh** in last 7 years ending last day of month previous to the one in which tenders are invited. (**Similar work shall mean Civil work**). The completion certificate should be certified by an officer not below the rank of Executive Engineer /Project Manager/ General Manager of a firm/Owner for whom the work is executed. (If private works are shown in support of eligibility, certified copy of the tax deducted at source certificate (TDS) shall be submitted along with the experience certificate and the TDS amount shall tally with the actual amount of work done).

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of applications for bids.

- 1.2.1 Should have Valid Certificate of Registration for GSTIN.

- 1.2.2 **To become eligible, the bidders shall have to furnish an affidavit on non judicial stamp paper duly attested by Public Notary/Executive Magistrate as under:-**

- I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in PGI in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit /Performance Guarantee.
- I/We have not been blacklisted / debarred in any Govt. Deptt's/ Boards/ Corporations/ Autonomous bodies in any State/ Central Government Departments etc. as on the date of submission of the bid in this present tender.
- That the deponent hereby undertakes that he/ she/ directors(s)/ Partners (s) of the Proprietary / Firm / Company/ Agency have never been convicted of any criminal offence.
- That I /We also undertake that the particulars given by me are true and correct to the best of my knowledge and belief and nothing has been concealed thereof. I/We am/ are aware that in case of any discrepancy/ false statement if found, it will lead to rejection of my bid/ tender and the PGIMER will debar / blacklist the Proprietorship / Firm / Company/ Limited company /Agency.

**(Scanned copy to be uploaded at the time of submission of bid). Affidavit Prior to the Date of Publication of this e-tender shall not be considered.**

- 1.2.3 It is presumed that all the bidders who have submitted the bid have gone through the entire bid documents include integrity pact and all the terms and conditions are acceptable to them.
2. Agreement shall be drawn with the successful bidders on CPWD General Conditions of Contract 2023 for maintenance work which is available with the concerned Hospital Engineer and official website of the Institute <http://pgimer.edu.in>. and the bidders shall quote his rates as per various terms and conditions of the said form subject to the exclusions / modifications attached at Page-22-24 along with amendments uploaded on the official website of the Institute which will form part of the agreement.
  3. The time allowed for carrying out the work will be **12 Month** from the date of start as defined in Schedule-F or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
  4. (i) The site for the work is available in phased manner.  
(ii) The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of the work.
  5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website [www.eprocure.gov.in/eprocure/app](http://www.eprocure.gov.in/eprocure/app) and official website of the PGIMER [www.pgimer.edu.in](http://www.pgimer.edu.in) free of cost.
  6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
  7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
  8. When bids are invited in two stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
  9. Earnest Money in the form of Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of Postgraduate Institute of Medical Education And Research, Chandigarh) shall be scanned and uploaded to the e-Tendering website within the period of bid submission.  
A part of earnest money Rs.15,040/- is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs.20 Lakh, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any scheduled bank having validity for six months or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.  
**The original EMD or EMD exemption certificate for MSE/MSME as scanned & uploaded shall be deposited physically by all the intending bidders in the office of H.E. (Civil-I) before opening of Eligibility cum Technical bid failing which the bid shall be treated as invalid.**
- Copy of Enlistment Order and certificate of work experience and other documents as specified in the press notice shall be scanned and uploaded to the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority.
- Online bid documents submitted by intending bidders shall be opened only of those bidders who have registered himself with M/s NIC Limited and other documents scanned and uploaded are found in order.
- The bid of the MSME firms registered in NSIC under PP policy are exempted from payment of EMD for goods & services only submitted shall be opened on 08.05.2026at 3.00 P.M
10. The bid submitted shall become invalid if:
    - (i) The bidder is found ineligible.
    - (ii) The bidder does not upload all the documents as stipulated in the bid document.

- (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.
- (iv) The intending bidder does not deposit original EMD or EMD exemption certificate for MSE/MSME physically as scanned & uploaded 07.05.2026 upto 4.00 P.M.,.
- (v) If a tendered quotes 'Nil' Charges against each item in item rate tender or does not quote any percentage above/ below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

**11.** The contractor whose bid is accepted, will be required to furnish

- a) **Performance guarantee of 5% (Five Percent) of the tendered value or estimated cost put to the tender (ECPT) (whichever is higher)** within the period specified in Schedule F. This guarantee shall be in the form of Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The Earnest Money deposited along with bid shall be returned after receiving the aforesaid performance guarantee.
- b) **Where the tendered amount is less than eighty percent (80%) of the Estimate Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.**

The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the contractor, if any engaged by the sub-contractor for the said work and Programme Chart (Time and Progress) within the Period specified in Schedule F.

**12.** The description of the work is as follows:

**Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh.**

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidders implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

- 13.** The competent authority on behalf of the Director PGIMER does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
- 14.** Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
- 15.** The competent authority on behalf of the Director PGIMER reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
- 16.** The contractor shall not be permitted to bid for works in the Institute's Engineering Department (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Hospital Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Institute's Engineering Department. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
- 17.** No Engineer or other officers employed in Engineering or Administrative duties in Engineering Department of the Institute is allowed to work as a contractor for a period of one year after his retirement from Institute's service without the previous permission of the competent authority in writing. This contract is liable to be

cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the competent authority as aforesaid before submission of the tender or engagement in the contractor's service.

18. The bid for the works shall remain open for acceptance for a period of 75 days from the date of opening of eligibility bids. If any bidders withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the Institute shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidders shall not be allowed to participate in the rebidding process of the work.
19. This Notice inviting bid shall form a part of the contract document. The successful bidder/ contractor, on an acceptance of his bid by the Accepting Authority, shall within 15 days from the stipulated date of start of the work sign the contract consisting of:
- a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings etc., if any, forming the tender as issued at the time of invitation of bid and acceptance thereof together with any correspondence leading thereto.
  - b) Standard Form 7/8 or other Standard Form as applicable.

## 20. For Composite Bids


- 20.1.1 The Hospital Engineer in charge of the major component will call bids for the composite work. The cost of bid document will be fixed with respect to the combined estimated cost put to tender for the composite bid.
- 20.1.2 The bid document will include following three components:
- Part A:** - Form 6, Form 7/8 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2023, exclusions / modifications attached at Page-22-24 alongwith amendments uploaded on the official website of the Institute.
- Part B:** - General / specific conditions, specifications and schedule of quantities applicable to major component of the work.
- Part C:** - Schedule A to F for minor components of the work (Hospital Engineer in charge of the major component shall also be competent authority under Clause 2 and Clause 5 as mentioned in Schedule A to F for major component), general / specific conditions, specifications and schedule of quantities applicable to minor components of the work.
- 20.1.3 The bidders must associate himself, with agencies of the appropriate class eligible to bid for each of the minor component individually **as per eligibility criteria specified at clause 1.3 page 3 of DNIT.**
- 20.1.4 The eligible bidders shall quote percentage rates for all items of major component as well as for all items of minor components of work.
- 20.1.5 After acceptance of the bid by competent authority, the Hospital Engineer in charge of major component of the work shall issue letter of award on behalf of the Director, PGIMER. After the work is awarded, the main contractor will have to enter into one agreement with Hospital Engineer in charge of major component and has also to sign two or more copies of agreement depending upon number of Hospital Engineer in charge of minor components. One such signed set of agreement shall be handed over to Hospital Engineer in charge of minor component. Hospital Engineer of major component will operate part A and part B of the agreement. Hospital Engineer in charge of minor component(s) shall operate part C alongwith part A of the agreement.
- 20.1.6 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.
- 20.1.7 Security Deposit (PBG) will be worked out separately for each component corresponding to the estimated cost of the respective component of works.
- 20.1.8 The main contractor has to associate agency(s) for minor component conforming to eligibility criteria as defined in the tender documents and has to submit detail of such agency(s) to Engineer- in-charge of minor component within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of minor component.
- 20.1.9 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of minor component. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency

executing such items of work and this shall be binding on the contractor.

- 20.1.10 The main contractor has to enter into agreement with the contractor(s) associated by him for execution of minor component. Copy of such agreement shall be submitted to Hospital Engineer in charge of minor component as well as to Hospital Engineer in charge of major component. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.
- 20.1.11 Running payment for the major component shall be made by Hospital Engineer of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer- Incharge of the discipline of minor component directly to the main contractor.
- 20.1.12 (a) The composite work shall be treated as complete when all the components of the work are completed. The completion certificate of the composite work shall be recorded by Engineer-in- charge of major component after the completion certificate of all other components.  
(b) Final bill of whole work shall be finalized and paid by the Hospital Engineer of major component. Engineer in charge of minor component will prepare and pass the final bill for their component of work and pass on the same to the Hospital Engineer of major component for including in the final bill for composite contract.
21. All the payments to the contractor shall be deposited in their bank account through RTGS and the contractor shall submit the detail of his bank account & IFSC code after award of work.
22. In case, date for opening of Eligibility / Financial bid is declared/happens to be public holiday, the Eligibility / Financial bid will be opened on the next working day.
23. The contractor shall comply to the “solid waste management Byelaws 2018” & “Construction & Demolition Rules 2018”. Any penalty imposed by the competent authority on account of non-compliance of these provisions, if not deposited in time by the contractor would be recovered from the payment due to the contractor.
24. The contractor shall strictly follow the Guidelines for construction sites for COVID-19 outbreak along with Special condition regarding NGT guidelines of the DNIT.
25. The contractor shall submit a documentary evidence in support of GST amount deposited with the concerned authority against the payment to be made by institute.

A.E(P)

Hospital Engineer (Civil-I)  
PGIMER, Chandigarh

<b><u>SECTION-IV</u></b>	<b>INFORMATION AND INSTRUCTIONS FOR BIDDERS</b>	
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**INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING FORMING PART OF BID DOCUMENT**

The Hospital Engineer (Civil-I), PGIMER Chandigarh on behalf of the Director PGIMER Chandigarh invites **online Percentage rate bids** from the enlisted contractors of CPWD / Department of Posts / BSNL / Railways / M.E.S. / Chandigarh Administration / CHB / MC Chandigarh / State PWD's / HUDA / PUDA / State Electricity Boards & Corporations dealing in **Civil works or Composite works** on Two bid system for the following work:-

1.	NIT No.	PGI/Engg./Civil-I/2026/157
2.	Name of work & Location	<b>Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A &amp; B for One year in Sector-12, PGIMER, Chandigarh.</b>
3.	Estimated cost put to bid	<b>Rs.7.52 Lakh</b>
4.	Earnest Money	Rs.15,040/-
5.	Period of Completion	12 Month
6.	Last date & time of submission of bid and other documents as specified in the press notice	06.05.2026 upto 4.00 P.M.,
7.	Last date & time for submission of Original EMD or EMD exemption certificate for MSE/MSME:	07.05.2026 upto 4.00 P.M.,
8.	Date & Time of opening of Eligibility bid	08.05.2026 at 3.00 P.M.,

1. Contractors who fulfill the following requirements shall be eligible to apply. Joint ventures are not accepted.
  - Should have satisfactorily completed the works as mentioned below during the last 7 years ending last day of month previous to the one in which tenders are invited.
    - a) Three similar works each are costing not less than **Rs.3.00 Lakh, or Two similar works each costing not less than Rs.4.50 Lakh, one similar work costing not less than Rs.6.00 Lakh** in last 7 years ending last day of month previous to the one in which tenders are invited. (**Similar work shall mean Civil work**). The completion certificate should be certified by an officer not below the rank of Executive Engineer /Project Manager/ General Manager of a firm/Owner for whom the work is executed. (If private works are shown in support of eligibility, certified copy of the tax deducted at source certificate (TDS) shall be submitted along with the experience certificate and the TDS amount shall tally with the actual amount of work done).

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of applications for bids.
2. The intending bidder must read the terms and conditions of Form-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
3. Information and Instructions for bidders posted on website shall form of bid document.
4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from the website: [www.eprocure.gov.in/eprocure/app](http://www.eprocure.gov.in/eprocure/app) and official website of the PGIMER [www.pgimer.edu.in](http://www.pgimer.edu.in). free of cost.
5. But the bid can only be submitted after uploading the mandatory scanned as specified.
6. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
7. The intending bidder must have valid class-III digital signature to submit the bid.

8. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
9. Contractor can upload documents in the form of **JPG** format and **PDF** format.
10. Contractor must ensure to quote percentage in the schedule of quantity. The column meant for quoting percentage rate in figures appears in pink color and the moment rate is entered, it turns sky blue.
11. The eligibility bid shall be opened first on date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the eligibility bid shall be communicated to them at a later date.
12. The agency shall submit the status of his firm w.r.t. proprietary firm / partnership firm or Limited company as per detail given below:-

If the bidder is a proprietary firm, a self undertaking of the proprietorship shall be uploaded by the bidder.

If the bidder is a firm in partnership, the bid documents shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the later case a certified copy of the power of attorney should be uploaded. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should also be uploaded.

If the bidder is a limited company or a corporation, the bid documents shall be signed by a duly authorized person holding power of attorney for signing the bid documents accompanied by a copy of the power of attorney / Authorization Letter. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.
13. The contractor shall submit a documentary evidence in support of GST amount deposited with the concerned authority against the payment to be made by institute.

**LIST OF DOCUMENTS TO BE SCANNED AND UPLOADED WITHIN THE PERIOD OF BID SUBMISSION:**

- I. Earnest Money Deposit or EMD exemption certificate for MSE/MSME (firms registered in NSIC under PP policy are exempted from payment of EMD) as per detail given in Clause No. 9 at page 4 of the DNIT.
- II. Enlistment Order as per detail given in Clause No. 1 at page 3 of the DNIT.
- III. Certificates of Work Experience as per detail given in Clause No. 1.2(a) at page 3 of the DNIT.
- IV. Affidavit as per as per detail given in Clause No. 1.2.2 at page 3 of the DNIT.
- V. Status of firm as per detail given in Clause No. 12 at page 9 of the DNIT
- VI. Valid Certificate of Registration for GSTIN.

A.E(P)

Hospital Engineer (Civil-I)  
PGIMER, Chandigarh



Further, I/We agree that in case of forfeiture Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in PGI in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the Institute.

Dated: -

Signature of Contractor

Postal Address:

Witness:

Address:

Telephone No.:

Fax No.:

Occupation:

E-Mail.:

### **ACCEPTANCE**


The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Institute for a sum of Rs. \_\_\_\_\_

The letters referred to below shall form part of this contract agreement:

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

Dated \_\_\_\_\_

Hospital Engineer (Civil-I)  
For & on behalf of the Director,  
PGIMER, Chandigarh

<b>SECTION-VI</b>	<b>INTEGRITY PACT</b>	
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To,

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.....,  
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**Sub: NIT No. PGI/Engg/Civil-I/2026/\_\_\_ for the work of Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh.**

Dear Sir,

It is here by declared that PGIMER, CHANDIGARH is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the Institute.

Yours faithfully

Hospital Engineer (Civil-I)

To,

Hospital Engineer (Civil-I),

.....,

.....

Sub: Submission of Tender for the work of **Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh.**

Dear Sir,

I/We acknowledge that PGIMER, CHANDIGARH is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process.

I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT. I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by PGIMER, CHANDIGARH. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

**I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, PGIMER, CHANDIGARH shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/bid.**

Yours faithfully

(Duly authorized signatory of the Bidder)

**To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of Institute.**

**INTEGRITY AGREEMENT**

This Integrity Agreement is made at ..... on this .....day of .....20..... **BETWEEN** Director PGIMER, Chandigarh represented through Hospital Engineer, (Civil-I), PGIMER, Chandigarh (Hereinafter referred as the (Address of Division) '**Principal/Owner**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

**AND**

..... (Name and Address of the Individual/firm/Company) through ..... (Hereinafter referred to as the (Details of duly authorized signatory) "**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns) **Preamble** WHEREAS the Principal / Owner has floated the Tender (NIT No.....) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for ..... (Name of work) hereinafter referred to as the "**Contract**".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

**Article 1: Commitment of the Principal/Owner**

1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Principal/Owner shall Endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

**Article 2: Commitment of the Bidder(s)/Contractor(s)**

1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Institute all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

d) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose (with each tender as per proforma enclosed) any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3) The Bidder(s)/Contractor(s) will not instigate third persons to omit offences outlined above or be an accessory to such offences.

4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Institute interests.

5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

### **Article 3: Consequences of Breach**

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes.

The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.

2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

3) Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of Indian Penal code (IPC)/Prevention of Corruption Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

#### **Article 4: Previous Transgression**

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.

3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

#### **Article 5: Equal Treatment of all Bidders/Contractors/ Subcontractors**

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/ sub-vendors.

2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

#### **Article 6- Duration of the Pact**

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded. If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority of PGIMER, Chandigarh.

#### **Article 7- Other Provisions**

1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Chandigarh.

2) Changes and supplements need to be made in writing. Side agreements have not been made.

3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

**Article 8- LEGAL AND PRIOR RIGHTS**

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....  
(For and on behalf of Principal/Owner)

.....  
(For and on behalf of Bidder/Contractor)


**WITNESSES:**

1. ....  
(signature, name and address)

2. ....  
(signature, name and address)

Place:

Dated :

<b>SECTION-VII</b>	<b>PROFORMA OF SCHEDULE A TO F (For Civil)</b>	
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**SCHEDULE 'A'**

Schedule of quantities of Civil works attached at Page No.67 of DNIT

**SCHEDULE 'D'**

Extra schedule for specific requirements / documents for the work, if any:	<b><u>As mentioned in tender documents</u></b>
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**SCHEDULE 'E'**

Reference to General Conditions of contract.	CPWD General Condition of Contract 2023 for Maintenance Works uploaded on the website of the Institute.
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Name of Work: **Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh.**

Estimated cost of work: **Rs.7.52 Lakh**

Earnest Money : **Rs.15,040/- Or EMD Exemption Certificate for MSE/MSME.**

Performance Guarantee :	a) <b>5% of the tendered value or estimated cost put to the tender (ECPT) (whichever is higher)</b>
	b) <b>Where the tendered amount is less than eighty percent (80%) of the Estimate Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.</b>

Security Deposit : **2.5% of the tendered value**

**SCHEDULE 'F'****GENERAL RULES & DIRECTIONS**

	<b>Officer inviting tender</b>	<b>H.E. (Civil-I)</b>
	Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3:	<b>See below</b>
	<b>Definitions:</b>	
<b>2 (v)</b>	<b>Engineer- in- charge</b>	Hospital Engineer (Civil-I) PGIMER, Chandigarh.
<b>2 (viii)</b>	<b>Accepting Authority</b>	<b>HE(Civil-I), PGIMER, Chandigarh</b>
<b>2 (x)</b>	<b>Percentage on cost of material and labour to cover all overheads and profits</b>	15%
<b>2 (xi)</b>	<b>Standard Schedule of Rates</b>	DSR 2023 & Market rates.
<b>2 (xii)</b>	<b>Department</b>	Hospital Engineering & Planning P.G.I.M.E.R., CHANDIGARH



<b>Clause 7</b>	<b>Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment</b>	<b>Rs.7.52 Lakh</b>
<b>Clause 7A</b>	<b>Whether Clause 7A shall be Applicable</b>	<b>Applicable</b>
<b>Clause 10A</b>	List of equipments to be provided by the contractor at site lab. 1.....2..... 3.....4..... 5.....6.....	NOT APPLICABLE
<b>10B(ii)</b>	Whether Clause 10 B (ii) shall be applicable	<b>Not Applicable</b>
<b>Clause 10C</b>	Component of labour expressed as percent of value of work =	<b>Not Applicable</b>
<b>Clause 10CC</b>	Schedule of component of other Materials, Labour etc. for price escalation.	<b>Not Applicable</b>

<b>Clause 11</b>	<b>Specifications be followed for execution of work.</b>	i) NIT Specifications. ii) Latest CPWD Specifications with amendments. iii) Bureau of Indian Standards wherever no such specifications exists in S.No. i) & ii).
<b>Clauses 12</b>	Authority to decide deviation upto 1.5 times of tendered amount	<b>Superintending Hospital Engineer, PGI, Chandigarh.</b>
	Type of work	<b>Maintenance works including works of upgradation, aesthetic, special repair, addition/alteration.</b>
<b>12.2 &amp; 12.3</b>	Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work.	No Limit
<b>Clause 16</b>	<b>Competent authority for deciding reduced rates.</b>	<b>Superintending Hospital Engineer, PGI, Chandigarh.</b>
<b>Clause 18</b>	<b>List of mandatory machinery, tools &amp; plants to be deployed by the contractor at site:-</b>	<b>NOT APPLICABLE</b>

<b>Clause 19 – Labour Laws to be complied by the Contractor</b>	<ul style="list-style-type: none"> <li>• The contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971. The contractor shall also obtain a valid licence under the said Act before the commencement of the work, and continue to have a valid licence until its completion.</li> <li>• The contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.</li> <li>• The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment &amp; Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.</li> <li>• Any failure to fulfill these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.</li> </ul>
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<b>Clause 19C</b>	Authority to decide penalty for each default – H.E (Civil-I)
<b>Clause 19D</b>	Authority to decide penalty for each default - H.E (Civil-I)
<b>Clause 19G</b>	Authority to decide penalty for each default - H.E (Civil-I)
<b>Clause 19K</b>	Authority to decide penalty for each default - H.E (Civil-I)


<b>Clause 25</b>		
(i)	Conciliator	Director, PGI, Chandigarh.
(ii)	Arbitrator Appointing Authority	Director, PGI, Chandigarh.
(iii)	Place of Arbitration	Chandigarh.

<b>Clause 32</b>		Requirement of Technical Representative(s) and recovery Rate					
S.No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words
1.	Graduate Engineer OR Diploma Holder	Civil	(Project Manager cum Planning/ Quality/ Site/ billing Engineer)	2 Years  5 Years	01	Rs. 15,000/- Per Month	Rs. Fifteen Thousand only Per Month
Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers							
Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.							

<b>Clause 38</b>		
(i) (a)	Schedule/statement for determining theoretical quantity of cement & bitumen	<b>Delhi Schedule of Rates 2023</b>
(ii)	Variations permissible on theoretical quantities:	
(a)	Cement	
	For works with estimated cost put to tender not more than Rs. 25 lakh.	<b>3% plus/minus.</b>
	For works with estimated cost put to tender more than Rs.25 lakh.	<b>2% plus/minus.</b>
(b)	Bitumen for all works	<b>2.5 % Plus only and NIL on minus side.</b>
(c)	Steel reinforcement and structural steel sections for each diameter, section and category	<b>2% Plus/minus</b>
(d)	All other materials	<b>NIL</b>

A.E.(P)


H.E (Civil-I)

<b>SECTION-VIII</b>	<b>EXCLUSIONS / MODIFICATIONS IN CPWD GENERAL CONDITIONS OF CONTRACT 2023 (MAINTENANCE WORKS)</b>	
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Clause No. & Page No. of CPWD GCC 2023	Exclusions / Modifications	
	<b><u>CONDITIONS OF CONTRACT</u></b>	
i)	<b>Clause 2 (iv), Page 9</b>	The word <b>President</b> / President of India and his successors wherever appears shall be read as the Director, PGIMER and his successors.
ii)	<b>Clause 2 (v), Page 9</b>	The word <b>Government or Government of India</b> wherever appears shall be read as PGIMER, Chandigarh.
iii)	<b>Clause 2 (vi), Page 9</b>	The Engineer-in-charge means the Hospital Engineer (Civil-I) who shall supervise and be Incharge of the work and who shall sign the contract on behalf of the Director, PGIMER as mentioned in Schedule 'F' hereunder.
iv)	<b>Clause 2 (x) (b), Page 10</b>	The following provisions are also added in this clause: Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender documents or the standard Schedule of Rates of the government mentioned in Schedule 'F' hereunder, with the amendments thereto issued previous day of the last date of submission of the tender.
v)	<b>Clause 2 (xi), Page 10</b>	<b>Department</b> shall means Director, PGIMER or any Division of PGIMER which invites tenders on behalf of Institute as specified in the Schedule 'F'.
vi)	<b>Clause 2 (xvi), Page 10</b>	The following provisions are also added in this clause: Extra items are those items which are not available in the contract. a. Non Schedule Extra Items are those items which are not available in the Standard Schedule of Rates specified in Schedule F. b. Schedule Extra Items are those items which are not available in the Standard Schedule of Rates specified in Schedule F.
vii)	<b>Clause 2 (xvii), Page 10</b>	The following provision are also added in this clause: The Completion Cost : Completion cost amount of work done, amount of extra items (s) and deviation (s) and escalation amount admissible as per agreement etc.
viii)	<b>Clause 2 (xvii), Page 10</b>	The following provision are also added in this clause: <b>Maintenance work</b> : Maintenance work (s) are those work (s) which includes Upgradation, aesthetic improvement, special repair, addition / alteration, annual repair, comprehensive maintenance work etc.
	<b><u>CLAUSES OF CONTRACT</u></b>	
ix)	<b>Clause 9, Page 24</b>	The following provisions under this clause are not applicable:- If the final bill is submitted by the contractor within the period specified above and payment of final bills is made by the deptt. after prescribed time limit, a simple interest @ 5 % per annum shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis, provided the final bill submitted by the contractor is found to be in order.
x)	<b>Clause 12, Page 34</b>	The following provisions are also added in this clause:- The completion cost shall, in no case exceed 1.5 times the contract amount. Contractor will devise a system to keep a watch on quantum of work taken up vis-à-

		<p>vis balance items required to complete defined scope of work and will give the alerts to Engineer-in-Charge before taking up extra item(s), deviation(s) so- that completion cost does not exceed above limit, work executed beyond above limit will never be recorded nor be paid.</p> <p>Engineer-in-Charge will verify and confirm the alerts before assigning deviation(s) and / or extra items(s) to the contractor. If additional work(s) is required to complete defined scope of work beyond above limit then Engineer-in-Charge may take up such work(s) separately. The contractor will not have any claim(s) whatsoever on this account.</p>
xi)	<b>Clause 12.1, Page 34</b>	<p>The following provisions are also added in this clause:</p> <p>The time for completion of the works shall, in the event of any deviation(s) and extra item(s) resulting in additional cost over the contract amount will be extended, as requested by the contractor, as follows:</p> <p>(i) In the proportion to the additional cost of work, bears to the original contract amount plus.</p> <p>(ii) 25% of the time calculated in (i) above.</p>
xii)	<b>Clause 12.2, Page 34-35</b>	<p>The following provisions are deleted in this clause:</p> <p>Extra items are those which are not available in the contract. For percentage rate tenders, the extra item(s) which are available in the standard schedule of rates specified in Schedule F, shall be paid as per the said schedule rate Plus cost index (considered in the estimated cost put to tender plus/minus percentage above/ below quoted on estimated cost put to tender).</p> <p>For item rate tenders, the extra item(s) which are available in the standard schedule of rates specified in Schedule shall be paid as per the said schedule plus cost index considered in the estimated cost put to tender) plus/minus percentage above/ below worked out on the basis of overall contract amount and estimated cost of the work put to tender.</p>
xiii)	<b>Clause 12.2, Page 35</b>	<p>The following provisions are also added in this clause:</p> <p>(a) Non Schedule Extra Item(s) - The contractor, shall within fifteen days of the receipt of order to execute extra item(s) or occurrence of the item(s), submit analysis of rate of extra item(s) based on the rate(s) of material(s) available in basic rate of Standard Schedule of Rate mentioned in schedule F and rate(s) of the material(s) based on tax paid bills which are not available in standard Schedule of Rate mentioned in schedule F. For this purpose, the basic rate of material(s) available in Schedule of Rate(s) mentioned in Schedule F will be enhanced or reduced by the applicable cost index, as the case may be.</p> <p>The rate(s) of the material(s) which are not available in Standard Schedule of Rates, mentioned in Schedule F, shall be based on, tax paid bill(s) for the material(s) as defined in manufacturer's specification.</p> <p>Material rate(s) from Standard Schedules of Rate(s) shall be given priority in the analysis of rate(s). The rate of extra item will be:</p> <p>i. Analyzed rate(s) as above multiplied by (Contract amount divided by estimated cost put to tender), if tendered amount is below the estimated amount put to tender.</p> <p>ii. Analyzed rate, if the Contract amount is above the estimated amount put to tender.</p> <p>Failing which the rate(s) approved later by the Engineer-in-Charge shall be final and binding.</p> <p>Where the contractor submits analysis of rate(s) of extra item(s) in the manner prescribed above, the Engineer-in Charge shall, within 60 days of the receipt of the</p>

		<p>analysis of rate, after giving consideration to the analysis of rates and other documents submitted by the contractor. Determine the rate(s) of extra item(s). The contractor shall be paid in accordance with the rate(s) so determined.</p> <p>However provisional rate(s) on the basis of invoice will be allowed by the Engineer-in-Charge. Invoice shall be accepted only for material(s) not available in the Standard Schedule of Rates mentioned in Schedule F. The contractor while submitting the tax paid bill of purchased material(s) shall ensure that rate(s) of the materials are reasonable and lowest available in the market. If Engineer-in Charge feels rates in tax paid bill(s) submitted by contractor are not reasonable then he can modify the rate(s) after giving a notice to the contractor. Engineer-in-Charge is the final authority to decide applicable rate(s) of material(s).</p> <p>b) Scheduled Extra Items</p> <p>i. For percentage rate tender, the extra item(s) shall be paid as Per the Standard Schedule of Rates, mentioned in Schedule F, enhanced or reduced by the applicable cost index and further enhanced or reduced by percentage above/ below quoted by the contractor on estimated cost put to tender.</p> <p>ii. For item rate tender, the extra item(s) shall be paid as per the said schedule rate enhanced or reduced by the applicable cost index and multiplied by (Contract amount divided by estimated cost put to tender).</p> <p>The rate(s) of extra item(s) so determined by the Engineer-in-Charge shall be final and binding on the contractor.</p>
xiv)	<b>Clause 12.5, Page 35</b>	<p>The following provisions are also added in this clause:  <b>Cost index</b> : Latest available Cost index at the time of beginning of execution of extra item(s) shall be used in sub-clauses 12.2 (a) and 12.2 (b) for calculation of rates of extra item (s)</p>
xv)	<b>Clause 12.6, Page 35</b>	<p>The following provisions are also added in this clause:  <b>Labour rates</b>: Labour rates will be based on latest available circulars issued by Central Govt. or State Govt. whichever are higher as well as applicable for the work.</p>
xvi)	<b>Clause 30, Page 53</b>	<p>The following provisions are also added in this clause:</p> <p>i) The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in- Charge, unsatisfactory. In such case, water charges @ 1.5 % shall be recovered on gross amount of the work done.</p> <p>The contractor shall take water connection from source of Municipal Corporation, Chandigarh / Chandigarh Administration at his own cost. He will pay the bills raised by concerned department regularly. However, PGIMER will help the contractor to take connection from concerned authority. If, the contractor fails to deposit the water bill, the Engineer Incharge will have the authority to deduct the such amount from contractor's bills and deposit the same to concerned department.</p> <p>ii) The contractor shall make his own arrangements for power supply including laying of cables, switchgears and energy meter for the required load upto the main source of U.T. electricity department / Institute's source of supply (If U.T. electricity is not available) at his own cost for the proper execution of the work and will pay the charges for the electric power consumed.</p>

<b>SECTION-IX</b>	<b>ADDITIONAL TERMS AND CONDITIONS OF CONTRACT</b>	
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1. The tenderer must sign the Integrity pact Annexed in section-VI at page 13 of the DNIT failing which the tender shall not be considered.
2. PGIMER reserves the right to accept/reject any or all tenders without assigning any reason thereof.
3. All the disputes concerning this tender in any way are subject to Chandigarh Jurisdiction only.
4. **Tenderers to study entire tender document carefully**
  - a) Submission of a tender by a tenderer implies that he has read all the stipulations contained in this booklet and all other contract documents and has acquainted himself of the nature, site conditions scope and specifications of the works to be executed and of conditions and rates at which stores will be issued to him by the PGIMER. The contractor shall also be deemed to have acquainted himself with local conditions and other factors which have a bearing on the execution of the works.
  - b) No claim will be entertained on account of ignorance of site conditions.

**5. CONTRACTOR SHALL SUBMIT FABRICATION DRAWING FOR OBTAINING APPROVAL**

The contractor shall submit fabrication drawing in triplicate for obtaining preliminary approval of the Engineer-in-Charge for all design drawings structural steel elements, **electrical panels and Air-Conditioning ducts wherever required**. One copy of this drawings duly corrected and signed wherever necessary by Institute will be returned to the contractor for preparing and resubmitting drawings after incorporating the said corrections again in triplicate for final approval. Along with the completion and approval of fabrication drawing, the contractor shall also submit the materials list, for checking and approval to the institute. No drawing shall be approved finally without material list. Once the drawing is finally approved, no request for any alternative section will be entertained. The contractor shall also submit **3 copies** of design calculations for the designs of joints **if required** all joints shall be designed for full strength of members, unless otherwise specified. Approval of fabrication drawings however will not absolve the contractor of his responsibility for the safety and correctness of the fabrication.

**6. SALE OF TENDERS TO CONTRACTORS WITH A BLEMISHED RECORD**

If the Engineer In-charge receives adverse report against any working contractor of the Institute, either from the department in which he is enlisted or from any other Department or Hospital Engineers of the Institute, he may stop issue of tenders to that contractor on the basis of such a report.

On the receipt of a case of adverse performance/ Misbehavior/ Threatening of site staff or any other such reasons, the Director PGIMER shall issue show cause to such contractors and after considering their reply, He shall have full powers to debar such contractor for a period as decided by him. Such debarred contractor shall be ineligible to take up any work in the Institute during the period of debarring.

A copy of such orders shall be posted on PGIMER website so that every field unit of the Institute becomes aware and does not issue tender to such debarred contractors.

If the NIT approving authority not lower than the rank of Superintending Hospital Engineer is satisfied that it is in the interest of the Institute to allow a contractor who has been debarred for reason of inactivity, to participate in the tendering process for getting competitive tenders, he may do so.

**7. WORK AND WORKMANSHIP**

To determine the acceptable standard or workmanship, the Engineer-in-Charge may order the contractor to execute certain portions of works and service such as walls, flooring, joinery, finishes, roads and the like under the close supervision of the Engineer-in-Charge. On approval, these items shall be labeled as guiding samples and works executed to conform to these samples.

**8. WORK IN TWO SHIFT:**

To speed-up the work, the institute may direct the agency to work in **Two shifts** and the tenderer will have to make adequate arrangements for carrying out work in Two shifts for which nothing extra shall be payable


**9. GATE PASSES**

All tools and plants, surplus/dismantled/ rejected/ materials to be taken away by the contractor from the work site should have a valid gate pass (4 copies) issued by the competent authority of the Institute. One copy of the gate pass shall be delivered to the security staff, one copy at the Exit gate, the third copy shall be retained by the contractor and fourth copy shall be retained by the officer issuing the gate pass.

10. All other information such as documents and drawing supplied by the tenderer will also be in the English language only. Drawing and designs shall be dimensioned according to the metric system of measurements.
11. Tenders who do not full fill all or any of the conditions laid down in this notice, or contain conditions not covered and/or not contemplated by the General Conditions of contract and /or expressly prohibited therein or stipulated addition/alternative conditions shall be liable to be rejected.
12. The institute reserves the right to revise or amend the tender documents prior to the date notified for opening of the tenders and also the right to postpone the date of presentation and opening of tenders without assigning any reason, whatsoever.
13. Each tenderer shall upload only one tender; either by him or as partners in a joint venture. A tenderer who uploads more than one tender will be disqualified.
14. Unless otherwise stated, the contract shall be for the whole work as described in the “Schedule of items of Works” and the drawings. The contractor shall be bound to complete the whole work as described in the schedule of items of works and the drawings, including additional items, if any, as per drawings and instructions. The issuance of certificate of completion as issued by the Engineer-in-Charge shall be mandatory and will be conclusive proof of completion of work.
15. Interpretations, corrections and changes to the Tenders Documents shall be made by Addendum, if required.
16. The quantities taken in the tender can be executed at anywhere in the Institute as per requirements and directions of Engineer Incharge and Contractors shall be bound to execute the same without claiming anything extra.
17. The Contractor shall strictly comply with the provision of EPF/ESI acts and shall furnish PF/ESI codes. It would however, be mandatory on the part of the contractor to provide proof of having deposited PF and ESI contribution as per law provides together with PF account number of employees in whose account the amount has been deposited (As an affidavit duly attested by Ist class Magistrate) on completion of work. Security shall be released after receipt of the above.

A.E. (P)

Hospital Engineer (Civil-I)  
PGI, Chandigarh

<b>SECTION-X</b>	<b>SPECIAL CONDITIONS &amp; GENERAL SPECIFICATIONS (CIVIL WORK)</b>	
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### SPECIAL CONDITIONS

#### 1.0 General

- 1.1 Except for the items, for which Particular Specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the "CPWD Specifications" (Refer Para 1.7.5 of schedule F and as per instructions of Engineer-in-Charge. Wherever CPWD Specifications are silent, the latest IS Codes / Specifications shall be followed and the rates should be all inclusive.
- 1.2 Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards upto last date of receipt of tenders. **The Contractor shall keep at his own cost all such publications including relevant Indian Standard applicable to the work at site.**
- 1.3 The work shall be executed and measured as per metric dimensions given in the Schedule of Quantities, drawings etc. (FPS units wherever indicated are for guidelines only).
- 1.4 The work should be planned in a systematic manner so that chase cuttings in the walls, ceilings and floors is minimized. Wherever absolutely essential, the chase shall be cut using chase cutting machines. Chases will not be allowed to be cut using hammer / chisel. The electrical boxes should be fixed in walls simultaneously while raising the brick work. The contractor shall ensure proper co-ordination of various disciplines viz. sanitary & water supply, horticulture & electrical etc.
- 1.5 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested before covering.
- 1.6 Samples including brand / quality of materials and fittings to be used in the work shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work.
- 1.7 Equipment like concrete pump excavators/Transit mixer etc. shall be allowed to be moved away from the site when, in written opinion of Engineer-in-Charge, the same are no longer required at site of work.
- 1.8 The contractor, his agents / representative, workman etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.
- 1.9 Contractor(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters at site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained.
- 1.10 The tenderer shall see the approaches to the site. In case any approach from main road is required at site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost.
- 1.11 Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.
- 1.12 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to work due to negligence on his part. No hindrances shall be caused to traffic, during the execution of the work.
- 1.13 The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc are to be constructed.
- 1.14 The contractor shall provide at his own cost suitable weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.

- 1.15 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.
- 1.16 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to byelaws and municipal body / corporation where CPWD Specifications are not applicable. The contractor should get the materials (fixtures/fittings) tested by the Municipal Body / Corporation authorities wherever required at his own cost.
- 1.17 The work shall be carried out in accordance with the Architectural drawings and Structural drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work, nomenclature of items, specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The figures & the written dimensions of the drawing shall supercede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim, whatsoever shall be entertained on this account.
- 1.18 The Architectural drawings other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fittings involved unless and otherwise specifically mentioned.
- 1.19 The contractor should submit the shop drawing of staging and shuttering for approval of Engineer-in-Charge before actually commencing the execution of work under the item. Nothing extra shall be payable on this account.
- 1.20 Other agencies may also simultaneously execute and install the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings, trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be available as specified elsewhere in the contract) and the contractor shall fix the same at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.
- 1.21 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
- 1.22 All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.
- 1.23 The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and approval of the same before use in the work.
- 1.24 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting/shifting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.

In case the existing services are to be shifted permanently, then before dismantling the existing services, alternate/diversion of service lines has to be laid by the contractor so that there is no interruption in use of existing services. The contractor has to plan the alternate suitable route for diversion/shifting of service lines and get the same approved from the Engineer-in-Charge before starting shifting of services. Nothing extra shall be paid except the payment of dismantling and laying of new service lines as per conditions of contract.
- 1.25 The contractor shall be responsible for the watch and ward / guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the department. No extra payment shall be made on this account.
- 1.26 The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock key system.
- 1.27 For construction works which are likely to generate malba / rubbish to the tune of more than a tempo / truck load, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at his own cost to the notified specified dumping ground and under no circumstances these shall be stacked / dumped even temporarily, outside the construction premises.
- 1.28 The excavated surplus earth shall be disposed off by the contractor as directions of Engineer Incharge.

**1.29 BATCH MIX CONCRETE**

- 1.29.1 The contractor shall establish a laboratory at site of batch mix plant to test the coarse aggregate, fine aggregate, water, sand, cement etc. Contractor is also required to depute technical personnel specifically for running of Batch Mix Plant and for quality control of mix produced.
- 1.29.2 All incidental expenditure on security, construction of cement godown, access roads, arrangement of water, electricity etc. to be incurred or anticipated by the agency for arranging, installing and operation of Batch Mix Plant shall be deemed to have been included in his quoted rates and no claim whatsoever will be tenable on this account.
- 1.30 With each Running Bill, the details of test carried out shall be submitted by the contractor **as per proforma of General specifications.**
- 1.31 On completion of work, the contractor shall submit at his own cost four prints of “as built” drawings to the Engineer-in-Charge. These drawings shall have the following information.
- a) Run off of all piping and their diameters including soil, waste pipes and vertical stacks.
  - b) Ground and invert level of all drainage pipes together with locations of all manholes and connections, upto out fall.
  - c) Run off of all water supply lines with diameters, location of control valves, access panels etc.
- In case the contractor fails to supply “as built drawing” aforesaid within 30 days of the date of completion, then the recovery @ Rs.10, 000/- each for such set of drawings shall be made from the contractor’s final bill.
- 1.32 In the item of providing and fixing precast reinforced cement concrete in shelves the cost of cutting chases and making good the same shall be inclusive in the item and nothing extra shall be paid on this account.
- 1.33 In the item of finishing walls with water proofing cement paint, only the plain/flat area shall be measured for payment and nothing extra shall be paid on account of pointed wall surface.
- 2.0 Unless otherwise specified in the schedule of quantities or CPWD specifications, the rates for respective items shall be all inclusive and apply to the following: -
- (i) All lifts & all heights, floors including terrace, leads and depths.
  - (ii) All labour, material, tools and plants and other inputs involved in the execution of the item.
  - (iii) Any of the conditions and specifications mentioned in the tender documents.
  - (iv) Pumping / bailing out surface water / rain water / sub soil water, if necessary for any reason.
  - (v) Providing sunk flooring in bath-rooms, kitchen, etc.
  - (vi) Any legal or financial implications resulting out of disposal of earth, if any.
  - (vii) Payment of Royalty at the prevailing rates, if any, on the boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work direct to revenue authorities.
  - (viii) Performance test of the entire installation(s) before the work is finally accepted.
  - (ix) Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items .
  - (x) All incidental charges for cartage, storage and safe custody of materials brought to site.

**3.0. TESTING OF MATERIAL: -**

- 3.1 Samples of materials required for testing shall be provided free of charge by the contractor. The cost of tests shall be borne by the contractor. All other expenditure required to be incurred for taking samples; conveyance, packing etc. shall be borne by the contractor himself.
- 3.2 However, if any ultrasonic pulse velocity / load testing or special testing is to be done for concrete whose strength is doubtful, the cost of the same shall be borne by the contractor.
- 3.3.1 In case there is any discrepancy in frequency of testing as given in list of mandatory tests and that in individual sub-heads of work as per CPWD Specifications higher of the two frequencies of testing shall be followed and nothing extra shall be payable on this account.

**3.4 FIELD LABORATORY**

The contractor has to establish field laboratory at site including all necessary equipments and skilled manpower for the Field Tests **of General specifications** at his own cost to have proper quality control.

For performing the above tests, the **Field Testing Equipments and Instruments of General specifications** are to be arranged and maintained by the contractor.

- 3.5. The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Engineer-in-Charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately.

3.6 The list of Laboratory/ Field equipment referred above are to be arranged and maintained by the contractor at the site of work. In case the equipment required for any test is not available at site, the department shall get the test conducted from the third party. However in that event, besides providing free materials of sample, the cost of taking of sample, packing, transportation, testing charges etc. shall be borne by the contractor irrespective of the results.

#### **4.0 SECRECY**

4.1 The contractor shall take all steps necessary that all persons employed on any work in connection with the contract have notice that the Indian Official Secrets Act 1923 applies to them & will continue so to apply even after the execution of such works under the contract.

4.2 The contract is confidential and must be strictly confined to the contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers as necessary) and to the purpose of the contract.

4.3 All documents, copies thereof & extracts there from furnished to the contractor shall be returned to the Engineer-in-Charge on the completion of the work / works or the earlier determination of the contract.

#### **5.0 LABOUR AND SECURITY**

5.1 Contractor should provide his plan for labour huts as per his requirement and get it approved from the Engineer-in-Charge. The contractor will be provided space for labour huts etc. inside the campus but the space requirement and location, as assessed by Engineer-in-Charge shall be final and binding.

5.2 Contractor has to follow the security requirement of the campus and obtain necessary entry passes for the labour and vehicles and follow security checks at entry / exit gates, restriction on movement of vehicle, restricted timings of working etc. The Department however shall assist the contractor in obtaining such passes for movement of vehicles and labour. No claim whatsoever shall be entertained on account of delay in entry of vehicles and labour including restrictions in working hours, if there is any.

5.3 The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. The contractor shall, on demand submit list of his agents, employees and work people concerned & shall satisfy as to the bonfides of such people.

5.4 The contractor & his work people shall observe all relevant rules regarding security promulgated in which work is to be carried out by the Controlling Administrative Authority of the Institute (hereinafter referred to as "Engineer Incharge").

5.5 The contractor, his representative, workman shall be allowed to enter through specified gates & timing as laid down by the controlling authority. They shall be issued an identity card or an individual pass in accordance with the standing rules & regulations & they should possess the same while working. The contractor shall be responsible for the conduct & actions of his workman, agents / representatives.

5.6 Normally contractor shall be allowed to carryout work between 7 AM to 6 PM. However, he may also be allowed to carryout the work beyond 6 PM & upto 7 AM if the site conditions / circumstances so demand with prior written permission from the "Engineer Incharge". However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained.

5.7 Normally contractor's material / vehicles etc shall be allowed to move in / go-out between 7 AM to 7 PM only & no movement of material / vehicles out of site of work shall be allowed during night hours unless specific permission is obtained from the "Engineer Incharge".

5.8 In case if a separate entry has been allowed, the contractor has to make all arrangement for making a separate entry gate and barricading of the working area to segregate/separate the same from other areas. All these have to be done by the contractor at his own cost including safeguarding any untoward incident in the restricted area due to separate entry gate and barricading arranged by the contractor. No extra amount on this account shall be payable by the department.

#### **6.0 TRANSPORTATION AND OFFICE INFRASTRUCTURE:**

6.1 In order to complete the work within the scheduled time if the contractor shall be required to do the work in more than one shift and accepted by the department the contractor will provide vehicular facilities to the PGI site staff to reach the site and their residence at his own cost for their services required beyond the normal office hours. In case the contractor fails to provide the facilities Engineer-in-Charge shall be at liberty to make the arrangement themselves and deduct the respective cost from the contractor's bills.

6.2 For Quality Control Measures, Preparation of Bills and Monitoring the Quality, the contractor shall provide (min. one number) Computer having MS-Windows XP, A-3 Coloured Inkjet & A-4 Laserjet Printers, Scanners, UPS etc. with required number of data entry operator in the site office of Engineer-in-Charge.

**7.0 PROGRAM CHART: -**

- 7.1 The Contractor shall prepare an integrated program chart for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the program within the stipulated period or earlier and submit the same for approval of the Engineer-in-Charge within **15 days** of the issue of letter of acceptance for the contract.
- 7.2 The work has to be completed in stages as indicated in the **Milestones under Schedule 'F'** and the program should be prepared in such a manner to achieve these Milestones as indicated therein or earlier.
- 7.3 The program chart should include the following: -
- a) Descriptive note explaining sequence of various activities.
  - b) Network (PERT / CPM / BAR CHART) which will indicate resources in financial terms, manpower and specialized equipment for every important stage.
  - c) Program for procurement of materials by the contractor.
  - d) Program of procurement of machinery / equipments having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.
- 7.4 If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time.
- 7.5 The submission of revised program or approval by the Engineer-in-Charge of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.

Notwithstanding the fact that the contractor will have to pay to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour regulations and the agreement entered upon and/or extra amounts for any other reason.

**8.0 PROGRESS AND MONITORING OF WORK:**

Contractor shall give the Engineer-in-Charge on the 10<sup>th</sup> day of each month, progress report of the work done during the previous month. Such progress report will include the project progress summary, work progress (planned v/s. actual), PERT chart, milestone status, financial progress status, manpower deployment status, important materials consumed, materials at site at the beginning of the month, materials consumed during the month and the balance quantities at the end of month and progress of the work stating the reasons for shortfall, if any including the steps and measures to be taken for making good the shortfall in the succeeding period. Non submission of aforesaid progress report shall make contractor liable for action under breach of contract conditions.

**9.0 SAMPLE OF MATERIALS:-**

- 9.1 All materials and fittings brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-in-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per List **of approved makes of General specifications** for approval of Engineer-in-Charge. For all other items, ISI Marked materials and fittings shall be used with the approval of Engineer-in-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant Specifications or IS codes for the approval of Engineer-in-Charge.
- 9.2 To avoid delay, contractor should submit samples as stated above well in advance so as to give timely orders for procurement. If any material, even though approved by Engineer-in-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.
- 9.3 BIS marked materials except otherwise specified shall also be subjected to quality test besides testing of other materials as per the specifications described for the item/material. Wherever BIS marked materials are brought to the site of work, the contractor shall, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfies the provisions of specifications relevant to the material and / or the work done.

BIS marked items (except cement & steel for which separate provisions have been made in para 10.0 of these special conditions) required on the work shall be got tested, for only important tests, which govern the quality of the product, as decided by the Engineer-in-Charge. The frequency of such tests (except the mandatory test) shall be 5% of the frequency as specified in BIS. For mandatory test, frequency shall be as specified in the CPWD Specifications

- 9.4 For certain items, if frequency of tests is neither mentioned in the CPWD Specifications & BIS, then tests shall be carried out as per decision of Engineer-in-Charge.
- 10.0 **CEMENT & STEEL REINFORCEMENT (IF NOT STIPULATED TO BE SUPPLIED BY THE DEPARTMENT).**
- 10.1 Contractor has to produce manufacturers test certificate for each lot of Cement & Steel Reinforcement procured at site.
- 10.2 **CEMENT:-**
- 10.2.1 The contractor shall procure 43 Grade Portland Pozzolona Cement (Fly Ash based), required in the work from reputed manufacturers of cement as per the approved make in 50 kg. bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot.
- 10.2.2 Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS Codes. The cement for such testing purpose shall be supplied by the contractor free of charge. 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 Engineer-in-Charge to do so. The cost of tests shall be borne by the contractor.
- 10.2.3 PPC shall be brought at site in bulk supply of approximately 30 tonnes or as decided by the Engineer-in-Charge.
- 10.2.3 PPC bags shall be stored in separate godowns. Separate godowns for tested cement and fresh cement (under testing) to be constructed by the contractor at his own cost as per sketches given in C.P.W.D Specifications having weather-proof roofs and walls. The size of the cement godown is indicated in the sketches for guidance. The actual size of godown shall be as per site requirements and nothing extra shall be paid for the same. Each godown shall be provided with a single door with two locks. The keys of one lock shall remain with Engineer-in-Charge of the work and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from godown according to the daily requirement with the knowledge of both parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed proforma and signed daily by the contractor or his authorized agent and Engineer-in-Charge or his authorized representative in token of its correctness. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the contractor or his authorized representative which shall be duly signed by the authorized representative of the Engineer-in-Charge before issue to the work on day to day basis.
- The capacity of each cement go-down shall be 1000 bags of cement or more as decided by the Engineer-in-Charge and shall be constructed by the contractor at site of work and at the site of batching plant for which no extra payment shall be made. The contractor shall be responsible for the watch and ward and safety of the cement go-downs. The contractor shall facilitate the inspection of the cement go-downs by the Engineer-in-Charge at any time.
- 10.2.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in Clause-42 of the contract and shall be governed by the conditions laid therein.
- 10.2.6 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in Clause - 42), the cost of quantity of cement not so used shall be recovered from the contractor as specified in schedule. Decision of the Engineer-in-Charge in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor.
- For non-scheduled items, the decision of the Superintending Engineer regarding theoretical quantity of the cement, which should have been actually used, shall be final and binding on the contractor.
- 10.2.7 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.
- 10.2.8 In case the contractor brings surplus quantity of cement the same shall be removed from the site after completion of work by the contractor at his own cost after approval of the Engineer-in-Charge.
- 10.2.9 Cement, which is not used within 90 days from its date of manufacture, shall be retested at approved laboratory. Until the results of such tests are found satisfactory, it shall not be used on the work.

**STEEL REINFORCEMENT: -**

- 10.3.1 The contractor shall procure Thermo Mechanical Treated (TMT) Steel Reinforcement bars of Fe 500D grade from Primary producers such as SAIL or Rashtriya Ispat Nigam Ltd. or Tata Steel.:
- (a) The grade of the steel shall be Fe 500 D as per IS 1786-2008.
- 10.3.2 The contractor shall have to obtain and furnish test certificates to Engineer –in- Charge in respect of all the supplies brought by him to the site of work.
- 10.3.3 Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, as defined under para 10.3.1 (a) above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in Charge to do so: -
- 10.3.4 The steel reinforcement shall be brought in bulk supply of 10 tonnes or more or as decided by the Engineer-in-Charge alongwith manufacturer test certificate for each lot.
- 10.3.5 The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion and nothing extra shall be paid on these accounts. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 10.3.6 Unless OTHERWISE specified elsewhere in the contract document, the testing (nominal mass, tensile strength, bend test, rebend test etc.) shall be done as per frequency of samples not less than as given below :-

SIZE OF BAR	FOR CONSIGNMENT BELOW 100 TONNES	FOR CONSIGNMENT OVER 100 TONNES
Under 10 mm dia	One sample for each 25 tonnes or part thereof.	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia	One sample for each 35 tonnes or part thereof.	One sample for each 45 tonnes or part thereof
Over 16 mm dia	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

- 10.3.7 The contractor shall supply free of charge the steel required for testing including transportation to testing laboratories. The cost of tests shall be borne by the contractor.
- 10.3.8 The Actual issue and consumption of steel on work shall be regulated and proper account 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. In case the consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.
- 10.3.9 Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.
- 10.3.10 The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.
- 10.3.11 Reinforcement including authorized spacer bars and lappages shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.
- 10.3.12 The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications will be considered for conversion of length of various sizes of M.S. Bars, T or Steel Bars and T.M.T. bars into Standard Weight.
- 10.3.13 Records of actual Sectional weights shall also be kept dia-wise and lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight. However for the stipulated issue of steel reinforcement up to and including 10mm diameter bars, the actual weight of steel issued shall be modified to take

into account the variation between the actual and the standard coefficients and the contractors' accounts will be debited by the cost of modified quantity.

10.3.14 a) If the Derived Weight as in sub-para (10.3.13) above is less than the Standard Weight as in Sub-para (10.3.12) above then the Derived Actual Weight shall be taken for payment provided, it is within the tolerances specified in IS 1786-2008, otherwise whole lot will be rejected.

b) If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in sub-para (10.3.12) above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the Standard Weight.

**12.0 SAMPLE QUARTER/ ROOM: -**

The contractor shall construct a sample quarter/ room complete in all respects including all Civil and Electrical details/ fixtures, as contained in "Table of Mile Stone(s)" in **Schedule-F of DNIT**, but not later than 120 days. The sample quarter/ room shall be inspected and approved by the Engineer-in-Charge. Slight changes with regard to the fixtures/ fittings/ details/ dimensions etc. may occur as per the actual requirement or in order to enhance the functionality of the product or the unit. Thus, the procurement for all the internal fittings/fixtures/ fabricated material and other material etc. shall be done by the contractor only after the approval of the sample quarter/room.

**13.0 Defect liability:**

13.1 The contractor's liability during the defect liability period from the final date of completion as per clause 17 shall be limited to rectification of defects including replacement as follows which in the opinion of Engineer-in-Charge are not man made.

S. No.	Description	Defect Liability
(i)	Anti termite treatment.	(a) Termites found if any till guarantee period to be rectified through post ATT.
(ii)	Concrete	(a) Rectification of structural / superficial / non-structural cracks. (b) Rectification of dampness / seepage in roof slab / junctions & sunken portion. (c) Rectification of cracks in beam, shade, column.
(iii)	Brick work	(a) Rectification of cracks in panel wall / portion. (b) Cracks / settlement of dwarf walls. (c) Rectification of efflorescence.
(iv)	Joinery	(a) Replacement of warped joinery. (b) Cracks in panels, rails / styles etc.
(v)	Builders Hardware	(a) Repairs / Replacement of loosened / pre-mature failure of fittings. (b) Tightening / Replacement of sag in mosquito proofing.
(vi)	Steel & Iron work	(a) Rectification / Replacement of defective part of rolling shutter. (b) Redoing of defective portion in fabrication / welding including painting. (c) Steel windows, grills, gates etc. – defects to be rectified.
(vii)	Roof treatment	(a) Rectification of leakage / seepage of roof slab including covering at junction till guarantee period.
(viii)	Plastering	(a) Rectification of structural / superficial cracks if any. (b) Rectification of protruding / peeling off plaster if any. (c) Rectification of efflorescence
(ix)	Flooring	(a) Rectification of sinking portion of plinth protection including saucer drain. (b) Settlement of foundation & floors.
(x)	Plumbing / Sanitary fittings	(a) Making good of leakage through soil / waste pipe joints. (b) Replacement of looking mirror if found wavy. (c) Rectification of leakage of over head tanks. (d) Leakage / seepage of sunken floor, Blockage of taps / pipes, non-functioning of cistern.
(xi)	Finishes	(a) Making good of defective / dissimilar patches of painting to match with remaining surfaces.
(xii)	Internal Water Supply	(a) Repairs / Replacement of defective taps / fittings. (b) Repair to leakage of GI water pipe lines including joints. (c) Removal of Blockage of GI pipe lines.
(xiii)	Roads	Repair of sinking portion of road & potholes, if any
(xiv)	Sewage	(a) Rectification of slope / system if found defective during use. (b) Rectification of major blockage in Sewer lines. (c) Cracks & settlement of sewage lines.
(xv)	Drains	(a) Repair to Drains. (b) Settlement of Drains
(xvi)	External Water Supply	(a) Repairs to installations & fittings.
(xvii)	General	(a) All manufacturing defects of structures / fixtures / fittings / equipments other than listed above.

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**GENERAL SPECIFICATIONS FOR CIVIL & P.H. WORKS**
**1.0 EARTH WORK:-****1.1 Anti Termite Treatment: -**

- 1.2.1 The work shall be executed by specialized agency to be approved by the Engineer in Charge.
- 1.2.2 The Chemical shall strictly conform to Specifications & shall be as per BIS covered by ISI marking. Chemical has to be of approved quality out of preferred make. 100% material has to be procured of approved make before start of work. The chemical shall be used only after due testing & if found conforming to the Specifications. Proper account has to be kept for day to day use of Chemical.
- 1.2.3 Ten years Guarantee bond in prescribed Performa attached of **General specifications** shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of anti termite treatment shall rest with the building contractor. **Ten per cent of the cost of anti termite work shall be retained as Security Deposit and the amount so deducted would be released after ten years from the date of completion of the entire work under the agreement, if the performance of the treatment/work done is found satisfactory.** If any defect/shortcoming is noticed during the guarantee period, the contractor shall rectify it within 15 days of receipt of intimation of such defects/shortcomings. In the event of failure to attend to the complaint within the specified period, the same will be got done from another agency at the risk and cost of contractor.

**2.0 R.C.C. WORK:-****2.1 Design Mix Concrete**

- 2.1.1 The RCC work shall be done with Design Mix Concrete. Wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. The Design Mix Concrete will be designated based on the principles given in IS: 456, 10262 & SP 23. The Conditions & Specifications stated herein shall have precedence over all conditions & specifications stated in relevant I.S. Codes / C.P.W.D. Specifications. The concrete mix shall be designed for the specified target mean compressive strength in order to ensure that work test result do not fall below the acceptance criteria specified for the concrete mix. The Contractor shall design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting the requirements specified.

(a) The contractor has to submit design mix without use of admixtures.

(b) Admixture may be added (by maintaining the minimum cement content as given under para- 2.1.3) in case of specific technical requirement so as to meet the workability / slump requirement or for any other reason but nothing extra is to be paid to contractor on account of adding admixtures.

- 2.1.2 The sources of coarse aggregate, fine aggregate, water, admixture & cement to be used in concrete work shall be identified by the contractor & he will satisfy himself regarding their conforming to the relevant specifications & their availability before getting the same approved from the Engineer-In-Charge.

- |                                    |   |
|------------------------------------|---|
| (a) <b>Coarse Aggregate: -</b>     | As per CPWD Specifications  |
| (b) <b>Fine Aggregate: -</b>       | As per CPWD Specifications  |
| (c) <b>Water: -</b>                | It shall conform to requirements laid down in IS: 456-2000 / Para 3.1.1 of CPWD Specifications  |
| (d) <b>Cement:-</b>                | PPC of grade 43 shall be used for design mix concrete and shall conform to IS-1489 (Part I). However, if the contractor uses higher grade of cement nothing extra shall be paid.  |
| (e) <b>Admixture/Plasticizer:-</b> | The admixture shall conform to IS: 9103. Whenever required, the admixture of approved quality & approved make only shall be used to attain the required workability. Nothing extra on account of use of Admixture / Plasticizer shall be payable. |

2.1.3 **Grade of Concrete:** - The compressive strength of various grades of concrete with various parameters shall be as follows: -

GRADE DESIGNATION	COMPRESSIVE STRENGTH ON 15 Cm. CUBES min. 7 DAYS (N/mm <sup>2</sup> )	SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH AT 28 DAYS (N/mm <sup>2</sup> )	MINIMUM CEMENT CONTENT (Kg. Per Cub. Mtr.)	MAXIMUM WATER CEMENT RATIO	SLUMP
(i) M-20	As per Design	20	360	0.50	25-75
(ii) M-25	As per Design	25	380	0.50	25-75
(iii) M-30	As per Design	30	400	0.45	25-75
(iv) M-35	As per Design	35	420	0.45	25-75

**NOTE:-**

- i) In the designation of a Concrete mix letter M refers to the mix and the number of the specified characteristic compressive strength of 15 cm - Cube at 28 days expressed in N/mm<sup>2</sup>.
- ii) It is specifically highlighted that in addition to the above requirements, the maximum cement content for any grade shall be limited to 530 kg. / cubic metre.
- iii) The minimum / maximum cement content for design mix concrete shall be maintained as per the quantity mentioned above. In cases where the quantity of cement required is higher than the minimum specified above to achieve desired strength based on an approved mix design, nothing extra shall become payable to the contractor.

2.1.4 The Contractor shall engage one of the following approved laboratories / test house for designing the concrete mix in accordance with relevant IS Code and to conduct laboratory tests to ensure the target strength & workability criteria for a given grade of concrete: -

- i) Technical Teacher Training Institute, Sector 26, Chandigarh.
- ii) Punjab Engineering College, Chandigarh.
- iii) NIT, Jalandhar. (Formerly known as REC, Jalandhar.)
- iv) IIT, New Delhi.
- v) Chandigarh Engineering College, Sector 26, Chandigarh.

The various ingredients for mix design / laboratory tests shall be sent to the lab / test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the department.

In the event if all the **above** laboratories are unable to carry out the requisite design / testing, the contractor may have it done from any other laboratory with prior approval of the **Superintending Hospital Engineer**.

2.1.5 The contractor shall submit the report on design mix from any of above approved laboratories for approval of Engineer in Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the design mix is approved. In case of White Portland Cement and the likely use of admixtures in concrete with ordinary Portland/White Portland Cement, the contractor shall design and test the concrete mix by using trial mixes with white cement and / or admixtures also, for which nothing extra shall be payable.

2.1.6 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, the contractor as per the directions of the Engineer-in-charge shall submit a revised laboratory mix design report conducted at laboratory established at site.

2.1.7 All cost of mix designing and testing, connected therewith, including charges payable to the laboratory shall be borne by the Contractor including redesigning of the concrete mix whenever required & as directed by Engineer-In-Charge.

2.1.8 The mix design for a specified grade of concrete shall be done for a target mean compressive strength  $T_{ck} = F_{ck} + 1.65s$

Where  $F_{ck}$  = Characteristic compressive strength at 28 days.  
 $s$  = Standard deviation which depends on degree of quality control.

The standard deviation for different grades of concrete shall be as follows: -

GRADE OF CONCRETE	STANDARD DEVIATION
M-20	4.0
M-25	4.0
M-30	5.0
M-35	5.0

#### 2.1.9 TRIAL BATCHES

- (a) The designed mix proportions shall be checked for target mean compressive strength by means of trial batches.
- (b) Minimum three sets of separate preliminary tests shall be carried out for each trial batch of concrete mix. Each test shall comprise of six specimens and only one test-set of six specimens shall be made on any particular day.
- (c) The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out workability tests.
- (d) The workability of trial mix No.1 shall be measured and mix shall be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the workability.
- (e) With the modified Water Content, the mix proportions shall be recalculated by keeping with water cement ratio unchanged. The mix proportion, as modified, shall form the Trial Mix No.2 and tested for the specified strength and workability.
- (f) In addition, trial mix No.3 and 4 shall be designed by keeping water contents same as that determined for trial mix 2 but varying the water cement ratio by  $\pm 10$  percent of the specified value and tested for their design characteristics.
- (g) Out of the six specimen of each set, three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days, while the design mix shall be approved only on the basis of test strength at 28 days.

#### 2.1.10 APPROVAL OF DESIGN MIX

The design mix shall be considered satisfactory and approved if at least three preliminary test-sets individually satisfy the following strength and workability criteria:

- (a) The average strength of each test-set is not less than the specified target mean compressive strength (Tck).
- (b) The strength of any specimen cube is not less than 0.85 Tck.
- (c) The concrete mix is of required degree of workability and acceptable concrete finish.

#### 2.2 BATCHING & MIXING:-

- (a) All design mix concrete shall be done using fully automatic batching plant conforming to IS: 4925 of minimum 10 cum per hour capacity. The automatic batching plant shall be charged by devices when actuated by a single starter switch, will automatically start the weighing operation of each material (i.e. stone aggregate, sand, cement, water, admixture etc.) and stop automatically when designated weight of each material has been reached and also it should have rated capacity ( in terms of concrete in a single batch). It shall have control panel for operation of the batching plant complete with printing facility.
- (b) In case of non-availability of batched concrete, Ready Mix Concrete (RMC) may be used. Transit mixtures shall transport the concrete to site. All the precautions shall be taken during the transportation and handling of concrete to achieve the desired strength, durability, etc. as envisaged in the Mix Design. Contractor has to get the approval from Engineer-In-Charge regarding source of RMC by giving the details of such plants indicating name of owner / company, its location, technical establishment, past experience and text of Memorandum of Understanding (proposed to be entered between purchaser and supplier). The Engineer-in-Charge, after satisfying himself about quality / capability of the company shall give approval in writing (subject to drawing of MOU). The MOU shall be drawn with RMC plant owner / company and submitted to Engineer-in-Charge within a week of such approval. The contractor will not be allowed to purchase RMC without completion of above formalities for use in the project. Notwithstanding the approval granted by Engineer-in-Charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, production, transportation and placement etc. The Engineer-in-Charge will reserve the right to deploy his supervisor at plant site to inspect at any such stage and reject the material / concrete etc if he is not satisfied about quality of material / product.

- (c) All measuring equipment shall be maintained in a clean and serviceable condition and their accuracy shall be checked at least once a month.
- (d) Only single sized good quality stone aggregate shall be brought to site of work from the approved source. The grading of the stone aggregate shall be controlled by blending the aggregate of different sizes in the required proportions at site of work  
The aggregate of different sizes shall be stock-piled separately, preferably a day before use.  
The grading of coarse and fine aggregates shall be checked as frequently as possible and as directed by the Engineer-In-Charge to ensure that the specified grading and quality of aggregate is maintained.
- (e) It is important to maintain the Water Cement Ratio constant at its specified or approved value by making adjustment for the moisture contents of both fine and coarse aggregates.  
The moisture contents in the aggregate shall be determined as frequently as possible in keeping with the weather conditions and as per the provisions of IS: 2386 (Part-III).

### 2.3 **OTHER OPERATIONS: -**

All other operations in concreting work like mixing, slump, laying, placing of concrete, compaction, curing etc. not mentioned in this particular specifications for Design Mix of Concrete shall be as per CPWD Specifications.

### 2.4 **SAMPLING:-**

- (a) Samples from fresh concrete shall be taken as per IS 1199-1959 and the test cubes shall be made, cured and tested in accordance with IS: 516-1959.
- (b) Each test sample shall comprise of six test cubes (specimen), three of which shall be tested at 7 days and remaining for tests at 28 days.
- (c) **FREQUENCY OF SAMPLING: -**
  - (i) A random sampling procedure shall be adopted to ensure that the sampling is spread over the entire period of concreting and cover all mixing units. The concrete work shall be notionally divided into lots as under for the purpose of sampling conditions.
    - Footings, rafts etc.
    - Columns and walls at all levels.
    - Beams at all levels.
    - Slabs at all levels.
  - (ii) At least one test sample shall be taken for each lot of concrete work.
  - (iii) Each grade of concrete shall form different lot for testing.
  - (iv) The minimum frequency of sampling of concrete of each grade shall be in accordance with CPWD specification 2009, Vol I with upto date correction slips.
  - (v) The concrete work shall be assessed on day to day basis & samples shall be taken as specified.
  - (vi) Work strength test shall be conducted in accordance with IS: 516 on random sampling.

#### 2.4.1 **TEST RESULTS OF SAMPLES: -**

The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than  $\pm 15\%$  percent of the average. If variation is more, the test results shall be treated as invalid. 90% of the total tests shall be done at the laboratory established at site by the contractor and remaining 10% in any other laboratory as directed by the Engineer-in-Charge.

#### 2.4.2 **STANDARD OF ACCEPTANCE: -**

- i) In case the test results of all the samples are above the characteristic compressive strength, the concrete shall be accepted.
- ii) In case the test result of one or more samples fails to meet the requirement (i) above, it shall be accepted if it meets the requirement as laid down in CPWD Specification.
- vi) Concrete of each grade shall be assessed separately.
- vii) Concrete is liable to be rejected, if it is porous or honeycombed or its placing has been interrupted without providing a proper construction joint or the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been met.

### 2.5 **MEASUREMENT –**

- (i) As per CPWD Specifications.
- (ii) In respect of all projected slabs at all levels including cantilever, canopy, the payment for the RCC work shall be made under the item RCC slabs. The payment for shuttering at the edges shall be made under item of centering and shuttering for RCC slabs. Nothing extra shall be paid for the side shuttering at the edge of these projected balconies / projected verandah slabs.

**2.6 TOLERANCES** - As per CPWD Specifications.**2.7 RATES:** -

- (i) The quoted rate includes the cost of materials, labour and T&P, including mixing, placing, transportation involved in all the operations described above except for the cost of centering, shuttering & reinforcement which will be paid for separately.
- (ii) In case of rejection of concrete on account of unacceptable compressive strength, governed by para "Standard of Acceptance" as above, the work for which samples have failed shall be redone at the cost of contractor. However, the Engineer-in-charge may order for additional tests (like cutting cores, ultrasonic pulse velocity test, load test on structure or part of structure, etc) to be carried out at the cost of contractor to ascertain if the portion of structure wherein concrete represented by the sample has been used, can be retained on the basis of results of individual or combination of these tests. The Contractor shall take remedial measures necessary to retain the structure as approved by the Engineer-in-charge without any extra cost. However, for payment, the basis of rate payable to contractor shall be governed by the 28 days cube test results and reduced rates shall be regulated in accordance with CPWD Specifications.

**2.8 R C C WORK (ORDINARY)**

- 2.8.1 The work shall be done in accordance with CPWD Specifications.
- 2.8.2 Water Cement ratio for Ordinary RCC work shall not be more than 0.5. Contractor shall use concrete mixture of proper design having arrangement for measuring water for mixing of concrete.

**2.9 FORM WORK**

- 2.9.1 The work shall be done in general as per CPWD Specifications.
- 2.9.2 Only M.S. centring / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor to be approved by the **Engineer-in-Charge**.
- 2.9.3 Nothing extra shall be paid for the centring and shuttering, circular in shape whenever the formwork is having a mean radius exceeding 6m in plan.
- 2.9.4 Nothing extra shall be paid for grid beams and the corresponding slabs having clear span more than 1.20 meters.
- 2.9.5 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centring, shuttering and casting for which nothing extra shall be paid to the Contractor. As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 12 to 20mm or as required, lower than general floors shuttering should be adjusted accordingly. Nothing extra is payable on this account.
- 2.9.6 Steel shuttering as approved by the Engineer-in-Charge shall be used by the contractor. Minimum size of shuttering plates shall be 600mm x 900mm except for the case when closing pieces are required to complete the shuttering panels. Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work. The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound shall be applied on the surface of the shuttering plates in the requisite quantity before assembly of steel reinforcement.

**2.10 REINFORCEMENT:-**

- 2.10.1 The reinforcement shall be done as per CPWD Specifications.
- 2.10.2 The quoted rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.
- 2.10.3 The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. **Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars (Conbextra as manufactured by M/S Fosroc Chemicals India Ltd. or approved equivalent)** of high early strength and same colour as surrounding concrete, Pre-cast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge, quoted rate of RCC items is inclusive of cost of such cover blocks.

**2.11 PRE-CAST RCC WORK**

- 2.11.1 The work shall be done in accordance with CPWD Specifications.
- 2.11.2 Pre-cast reinforced concrete units shall be of grade or mix as specified. Provision shall be made in the mould to accommodate fixing devices such as hooks etc. and forming of notches and holes. Each unit shall be cast in one operation. A sample of the unit shall be got approved from Engineer-in-charge before taking up the work.
- 2.11.3 Pre-cast units shall be clearly marked to indicate the top of member and its location.
- 2.11.4 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.
- 2.11.5 The compaction of the concrete shall be done by vibrating, table or external vibrator, as approved by Engineer-in-charge. The rate quoted for the item shall include the element for framework and mechanical vibration.
- 2.11.6 The quoted rate for item includes cost of all materials, labour, and all operations involved. Cost of M.S. frames, lugs including their welding, lifting hooks is also included.

**3.0 BRICK WORK:-**

- 3.1 The brickwork shall be carried out with good quality well burnt FPS bricks of class designation 75 as per CPWD Specifications.
- 3.2 The quoted rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.
- 3.3 Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.**
- 3.4 M.S. Strip provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.**

**4.0 STONE / MARBLE WORK :-**

- 4.1 General: -The execution of stones work shall be in general as per CPWD Specifications.

**4.2 SAMPLES FOR STONE WORK:-**

Samples of each item of stone work either individually or in combination shall be prepared for approval of Engineer-in-charge before commencement of work.

**5.0 WOOD WORK:-**

- 5.1 The wood work in general shall be carried out as per CPWD Specifications.
- 5.2 The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.
- 5.3 Glazing for toilets shall be of translucent type.
- 5.4 The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.
- 5.5 Timber shall be of specified species, good quality and well seasoned. It shall have uniform colour, reasonably straight grains and shall be free from knots, cracks, shakes and sapwood. It shall be close grained. The contractor shall deposit the samples of species of timber to be used with the Engineer-in-Charge for testing before commencement of the work.
- 5.6 Wood work shall not be painted, oiled or otherwise treated before it has been approved by the Engineer-in-charge. All portion of timber including architrave abutting against masonry, concrete, stone or embedded in ground shall be painted with approved wood preservative or with boiling coaltar.
- 5.7 The contractor(s) shall produce cash voucher and certificates from approved Kiln Seasoning Plants about the timber used on the work having been kiln seasoned and chemically treated by them, falling which it would not be so accepted as kiln seasoned and/or chemically treated.
- 5.8 Transparent sheet glass conforming to IS: 2835 – 1977 shall be used. Thickness being governed as under unless otherwise specified in the item in wood work/steel work:

Area of Glazing	Thickness
(a) For glazing area up to 0.50 sqm	4.0 mm
(b) For glazing area more than 0.50 sqm	5.5 mm

- 5.9 Factory made panelled / wire gauge door shutters
- 5.10 The work shall be executed through specialized agencies to be approved by the Engineer in Charge.
- 5.11 The shutters should be fabricated in factories & fabrication should conform to CPWD Specifications Para 9.6.6 & IS 1003 Part-I.
- 5.12 The contractor shall propose well in advance to Engineer-in-Charge, the names and address of the factory where from the contractor intends to get the shutters manufactured along with the credential of the firm. The contractor shall place the order for manufacturing of shutters only after obtaining approval of the Engineer in Charge whose decision in this case shall be final & binding. In case the firm is not found suitable he shall propose another factory. The factory may also be inspected by a group of officers before granting approval; shutters shall however be accepted only if these meet the specified test.
- 5.13 Contractor will arrange stage wise inspection of the shutters at factory by the Engineer-in-Charge or his authorized representative. The contractor will have no claim if the shutters brought at site in part or full lot are rejected by the Engineer-in-Charge due to bad workmanship / quality. Such defective shutters will not be measured and paid. The contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by the Engineer-in-Charge.
- 5.14 The shutters should be brought at site without primer / painting.
- 5.15 Inspection of shutters shall be carried out for dimensions & tolerances, size & type general constructions workmanship, finish & glazing at the following frequency:-

Lot Size	Sample size	Permissible number of defectiveness
Upto 25	2	0
26 to 50	5	0
51 to 100	8	0
101 to 150	13	1
151 to 300	20	2
301 to 500	32	3
501 to 1000	50	5
1001 & above	80	7

Criteria for conformity:-

Any sample shutter failing in any one or more of the requirements inspected for as above shall be considered as defective. A lot shall be considered as having satisfied the requirements of the standard if the number of defective shutters in the sample does not exceed the corresponding permissible number of defectiveness given above.

- 5.16 Testing:- The shutters shall be tested for species, seasoning & treatment, defects in the timber, panel material, construction & workmanship in the approved Govt. Laboratory at the following frequency:-

Lot Size	Sample size
Upto 50	2
51 to 100	8
101 to 150	13
301 to 500	32
501 to 1000	50
1001 & above in multiple of 1000	80

If shutters are found defective in any one of the criterion, double the shutter shall be tested & if found permissible, can be accepted. If shutter is found defective in more than one criterion, the whole lot shall be rejected.

## 6.0 **STEEL WORK:-**

- 6.1 The work shall be carried out as per CPWD Specifications.

- 6.2 **Pressed Steel Frame / T Iron Frames:** - The work shall be done as per CPWD Specifications. The frames shall be fabricated in approved workshops. The angle and flat iron frames for cupboard shall also be fabricated from the above approved workshops.
- 6.3 **Steel windows / ventilators:** The work shall be done strictly as per CPWD Specifications. Flash butt-welded steel windows / ventilators only shall be provided and shall be procured from the approved manufacturers. The corners should be welded to form a solid fused welded joint conforming to the requirement given below.
- Weld shall be made all along the place of meeting the member.
  - Weld should be properly grounded.
  - Complete cross section of the corner shall form a solid joint with no cavities, free from cracks, under cutting, overlaps, gross porosity and entrapped slag.

All sub dividing and glazing bars shall be tenoned & riveted into the frames i.e. all centre mullion section F4B and glazing section T2, T6 shall not be directly welded to the frames. For this a slot has to be cut in the frames, the F4B / T2 / T6 section inserted into it & head be hydraulically tenoned & riveted by Tennon Rivetting Machine.

The thickness of projecting type hinges shall not be less than 3.15 mm. For fixing of hinges to outer frame, slot shall be cut, hinges inserted & welded at the back. For non projected type hinges if allowed, the wall thickness shall not be less than 3 mm & total width not less than 40 mm. For fixing, the slot shall be cut in the fixed frames, hinge flap inserted & welded from the back.

The fixing lug shall be as per IS 1038 with adjustable slot & fixed to window frames by screws & nuts. The fixing of unit shall be done as per IS 1081.

- 6.4 **M.S. Sheet Door** – M.S Sheet shall be in one piece i.e. no joint in M.S. Sheet shall be permitted.

## **FLOORING:-**

- 7.1 All work in general shall be carried out as per CPWD Specifications.
- 7.2 Whenever flooring is to be done in patterns of tiles and stones, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such flooring. Nothing extra shall be payable on this account.
- 7.3 Different stones / tiles used in pattern flooring shall be measured separately as defined in the nomenclature of the item and nothing extra for laying pattern flooring shall be paid over and above the quoted rate. No additional wastage, if any, shall be accounted for any extra payment.
- 7.4 Samples of flooring stones (Kota/ Marble/ Granite etc.) shall be deposited well in advance with the Engineer-in-Charge for approval. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.
- 7.5 The Marble/ Kota/ Granite or any other stone shall be fully supported by the details establishing the quarry and its location.
- 7.6 Full width Marble/ Kota/ Granite stone over kitchen platform shall be provided which shall not be less than 900mm long except to adjust for closing pieces. The marble / stone flooring in treads and risers of staircase shall not be less than 1500mm long except to adjust the closing pieces. Nothing extra shall be paid on these accounts

### **Precast Terrazzo Tile Flooring**

The tiles shall be procured from the manufacturer as per List of approved makes **of General specifications.**

The tiles of 250 x 250 x 22 mm size shall be used & sample of tiles shall be got approved from the Engineer-in-Charge.

### **Ceramic Tiles Flooring**

The tiles shall be procured from the approved manufacture of the approved shade & colour.

The tile shall be conforming to IS-13755 & IS-13753 for floor and wall tiles respectively.

Tiles for dado shall be 300mm x 400mm (minimum size) GROUP-III as approved.

Tiles for flooring shall be 300mm x 300mm (minimum size) GROUP-V Tiles as approved.

Test shall be conducted to satisfy the quality of material as per CPWD Specifications

7.9 The quoted rate of items of flooring is inclusive of providing sunken flooring in bathrooms, kitchen etc. and nothing extra on this account is admissible. The proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard, etc. as per the directions of Engineer-in-charge.

**8.0 WATER PROOFING FOR SUNKEN FLOORS:-**

8.1 The work shall be got executed from the specialized agency as approved by the Engineer in Charge.

8.2 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.

8.3 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.

8.4 Before commencement of treatment on any surface, it shall be ensured that the outlet drain pipes / spouts have been fixed and the spout openings have been chased and rounded off properly for easy flow of water.

**8.5 GUARANTEE BOND:-**

Ten years Guarantee bond in prescribed proforma at of **General specifications** shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of water proofing treatment shall rest with the building contractor. **(Ten per cent) of the cost of water-proofing work shall be retained as Security Deposit and the amount so deducted would be released after Ten years from the date of completion of the entire work under the agreement, if the performance of the treatment is found satisfactory.** If any defect is noticed during the guarantee period, the contractor shall rectify it within 15 days of receipt of intimation of defects in the work. If the defects pointed out are not attended to within the specified period, the same will be got done from another agency at the risk and cost of contractor.

**9.0. FINISHING:-**

9.1 The work shall be done in accordance with CPWD Specifications.

9.2 All painting material of approved brand and manufacturer shall be brought to the site of work in the original sealed containers. The material brought to the site of work shall be sufficient for at least 30 days of work. The material shall be kept under the joint custody of contractor and representative of the Engineer-in-charge. The empty containers shall not be removed from the site till the completion of the work without permission of the Engineer-in-charge.

**10.0 SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE:-**

10.1 The contractor shall submit schematic drawing of water supply and sanitary installation showing details of layout, including internal water supply and drainage details, showing the detail of water supply lines including fittings diameter wise and fixtures connecting to soil waste through traps and connection of W.C. to main shaft pipe for drainage including its ventilation system for approval of Engineer-in-Charge.

10.2 For the work of water supply and sanitary installations, the contractor shall engage the approved licensed plumbers and submit the name of proposed plumbing agencies with their credentials for approval of the Engineer-in-Charge.

10.3 The work in general shall be carried out as per CPWD Specifications.

10.4 The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc. wherever required and making good the same for which nothing extra shall be paid.

10.5 The Centrifugally spun cast iron pipe IS: 3989-1984 wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall be paid for on this account.

10.6 The Centrifugally spun cast iron pipe IS: 3989-1984 wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall be paid for on this account.

10.7 The pig lead to be used in the jointing should be as per CPWD specifications.

**10.8 Nothing extra for providing & fixing CP Brass caps /extension pieces wherever required for CP Brass fittings shall be paid beyond the rates payable for corresponding CP Brass fittings**

10.9.1 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a Guarantee Bond as per Proforma of **General specifications**. 10% (ten percent) of the cost of these items would be retained as security deposit and the amount so deducted would be released after two years from the date of completion of the entire work under the agreement, if the performance of the items is found satisfactory. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in full if bank guarantee of equivalent amount is produced and deposited with the department.

## **11.0 SPECIFICATIONS FOR SOLID POLY VINYL CHLORIDE (PVC) DOOR SHUTTERS:-**

### **11.1.0 SCOPE**

11.1.1 This specification lays down requirement regarding types, sizes, material, construction, workmanship, finish, performance evaluation, sampling and testing of solid Poly Vinyl Chloride (PVC) Panelled door shutters for use in residential buildings, non-residential buildings such as offices, schools, hospital, etc.

11.1.2 The specification does not cover large size door shutters for industrial and special buildings such as workshops, garages, godowns etc.

11.1.3 PVC door shutters shall be used in internal locations only.

### **11.2.0 REFERENCES:**

11.2.1 The Indian Standards and other Standards listed in Annexure-I are necessary adjuncts to this standard. The products bearing BIS certification i.e. ISI Mark with code number shall have precedence over those not bearing ISI Mark.

### **11.3.0 TERMINOLOGY**

**11.3.1 For the purpose of this specification, the definitions given below in addition to those given in IS 707-1976 shall apply:**

#### **11.3.1.1**

- (i) **Blistering:** Air or solvent entrapped during moulding.
- (ii) **Colour Blots:** Colour Blots occurring on account of uneven distribution of pigment.
- (iii) **Crazing:** Fine hair cracks on the surface.
- (iv) **Defective Impregnation:** Imperfect impregnation of PVC resin with other additives.
- (v) **Colour Fading:** Fading of colour on exposure to sunlight.
- (vi) **Impurities:** Presence of matter other than those specified.
- (vi) **Pin holes:** Pores of size less than 1mm appearing on the surface.
- (vii) **Small Pores:** Pores of size more than 1mm appearing on the surface.
- (viii) **Wrinkling:** A slight ridge or furrow on surface.
- (ix) **Aggregate Defects:** Presence of defects such as pin holes, impurities and traces of mending 5 or more in aggregate for defects at localized place.

### **11.4.0 HANDLING:**

11.4.1 Handling and direction of closing of shutters shall be designated in accordance with IS: 4043:1969.

### **11.5.0 MATERIAL:**

11.5.1 Poly Vinyl Chloride Resin (suspension grade) in the basis raw material of PVC compound PVC resin in mixed with chemicals like calcium searate, hydrocarbon Wax, Titanium dioxide, calcium carbonate Acrylic base etc. Further additives like UV stabilizers, impact modifiers, pigments, epoxy plasticizer, lubricants, acrylic processing aid etc. are also added. The purpose of adding the chemicals and additives is to impart strength, surface finish, colour and resistance to fading by light rays. These chemicals are mixed in the desired proportion and shall be used in the formulation of PVC material and for free and smooth extrusion of PVC cellular sheets.

### **11.6.0 PROCESS:**

11.6.1 **MIXING:** The PVC material so formulated with the addition of chemicals, filters & additives shall be mixed dry powder from in a high speed hot mixer at a temperature of 110° C to 125° C. The heated dry blend is then to be cooled at room temperature. However, the temperature has to be determined keeping in view the climatic conditions and the process requirements.

11.6.2 **EXTRUSION:** The cooled dry blend is off loaded into the hopper of the extruder, and then is fed to the screw & barrel of the extruder, where it is melted and kneaded at varying temperatures upto 205° C by rotating screws. The thick pate of PVC material is then passed through a hot die to make the sheet of required thickness.

- 11.6.3 **POLISHING:** The basic shape of the sheet so acquired is then polished with the help of a three-roll calendar. At the same time the sheet is cooled by circulating water in the rolls of the calendar and thereafter on a roller table by atmospheric air.
- 11.6.4 **CUTTING:** The final finished product coming out of the haul-off is cut as per the required size.
- 11.7.0 **RANGE OF PVC PANELLED DOOR SHUTTERS:**
- 11.7.1 For the purpose of this specification, solid panelled door shutter of thickness 30/32mm has been considered to meet the requirements of various users. The different components required for the door shutters are given in table No. 1 in annexure.
- 11.8.0 **CONSTRUCTION / FABRICATION:**
- 11.8.1 **GENERAL:**
- 11.8.1.1 The door shutters shall be manufactured under controlled conditions in factories having adequate facilities for working with PVC cellular sheet including moulding, cutting and joining, fabrication etc.
- 11.8.1.2 While manufacturing door shutters, only components indicated in Table No. 1 shall be used for the shutter.
- 11.8.1.3 PVC door shutter shall be made out of the extruded PVC cellular sheets for styles, top rail, middle and bottom rail and panelling as given Table No. 1.
- 11.8.1.4 All the members of the door shutter shall be straight, smooth and well planned at right angles to each other. Any warp of bow shall not be more than 1.50mm.
- 11.8.2 **FABRICATION OF SHUTTER:**
- 11.8.2.1 Steel frame: Mild steel square tube of specified size shall be cut to required size and welded at the corners to form steel door frame. It should be painted with red oxide anticorrosive paint.
- 11.8.2.2 PVC Styles: Styles made of PVC Cellular sheet shall be cut to required length and width, which shall be then “V” grooved in parallel to the required thickness of the doors. The “V” grooves are heated by hot air under controlled temperature and moulded to form “C” sections.
- 11.8.2.3 PVC Rails: Top Rail, Bottom Rail and Lock Rail are made of PVC Cellular sheets by cutting the sheets to the required size.
- 11.8.2.4 PVC Panel: Panel made of PVC cellular sheet of 5mm thickness shall be cut to required size in length and width.
- 11.8.2.5 The PVC panel shall be inserted in between the MS Frame, then the PVC Styles and Rails shall be bonded on the length and width sides of frames. The gap between the Panel and the “C” section of styles and rails shall be filled up with PVC beading and bonded. Lock rail at the centre shall be bonded on the either sides of PVC. The gap between the top and bottom surface is filled by PVC sheet strips called gap inserts to completely seal the door.
- 11.8.3. **FIXING OF THE SHUTTER:**
- 11.8.3.1 The PVC door shutter as fabricated above should be fixed to the door frame of M.S. T-iron with necessary butt hinges of required size as per para 11.8.3.2 of this specification by using No. 10-12mm long counter sunk fully threaded parallel shank steel screws. In case the PVC shutter is to be fixed to wooden frame/PVC frame, the screws to be used in the butt hinge shall be No. 10-40mm counter sunk fully threaded parallel shank steel screws. For fixing butt hinges to PVC shutter, use No. 10-40mm long counter sunk fully threaded parallel shank steel screws. All the screws should be screwed in by screwdriver and in no case these shall be hammered.
- 11.8.3.2 Each door shutter shall be fixed to the frame with 4 hinges of required size unless otherwise specified by the purchaser. The top and bottom hinges shall be fixed at location 200mm below top and 200mm above bottom of shutter. The remaining two hinges shall be placed at one-third distance between top and bottom hinges.
- 11.8.3.3 For cupboard shutters, side hung of height upto 1.20metres each leaf shall be hung on piano hinges and for shutter of height more than 1.2 meter, each leaf shall be hung on three M.S. butt hinges of required size at quarter points. On shutter side the screws to be used in butt hinges shall be No. 10x25mm long counter sunk fully threaded parallel shank steel screws. On door frame side screws to be used in the butt hinges shall be No. 10-12mm counter sunk fully threaded parallel shank steel screws in case T-iron frame is used. And in case of wooden door frames, screws shall be No. 10-25mm long counter sunk fully threaded parallel shank steel screws.
- 11.8.3.3.1 All screws shall be counter sunk fully threaded parallel shank steel screws only, unless otherwise specified. All the screws shall be screwed in with screw driver only and in no circumstances screws shall be hammered in.

**11.8.4 FITTINGS AND ACCESSORIES:**

11.8.4.1 Door stoppers aluminium/brass: These shall be fixed to the door shutter as required by the purchaser as per size and shape approved by him. Cleats and blocks of wood should not be used in any circumstances.

Fittings other than hinges like pull bolt lock, mortice lock, latch floor door stoppers etc. conforming to clause 9.21 of CPWD Specifications 2009 shall be provided as per the schedule of fitting decided by the purchaser.

11.8.4.2 Mortice lock or latches: Shutter shall be shop prepared for taking mortice locks or latches as may be ordered. Shop preparing the door with morticed holes for lock fixing shall be done when desired by the purchaser.

**DIMENSIONS, SIZES AND TOLERANCES:****Table 1:- Dimension of door Shutters.**

S. No	Type of Shutter	Sizes (mm)	Thick-ness	PVC Sheet Section Used							
				Styles		Beading Rails		Rails		Panel Thick-ness	M.S. Sq. Tube.
				T	W	T	W	T	W		
1.	Panel door shutter DS1 (A)	730W – 2060 H	30mm	5	50	5	25	5	t=75 l=75 B=75	5	19 x 19
2.	Panel door shutter DS2 (A)	730W – 2060 H	30mm	5	75	5	50	5	t=100 l=100 B=100	5	19 x 19
3.	Panel door shutter DS3 (A)	730W – 2060 H	30mm	5	75	5	50	5	t=100 l=100 B=100	5	19 x 19
4.	Panel door shutter DS1 (B)	730W – 2060 H	30mm	5	50	5	25	5	t=100 l=100 B=100	5	19 x 19
5.	Panel door shutter DS2 (B)	730W – 2060 H	30mm	5	75	5	50	5	t=100 l=100 B=100	5	20 x 20
6.	Panel door shutter DS3 (B)	730W – 2060 H	30mm	5	75	5	50	5	t=100 l=100 B=100	5	19 x 19

**Note:**

T = Thickness  
W = Width

t = top rail  
l = lock rail  
b = bottom rail

11.9.1 PVC foam sheet shall not exceed the tolerances give below:

Sheet thickness (mm)	Tolerance (mm)
1	+0.15
2	+0.20
3	+0.25
4	+0.30
5	+0.35
6	+0.40
8	+0.50
10	+0.60
13	+0.75
19	+1.05

Note: Generally the PVC sheet used for the panel door shutter is of 5 mm thickness

**Tolerance**

- (i) On weight of PVC section + 10 percent.
- (ii) On weight of galvanized M.S. square tubes, M.S. rods + 5 per cent (M.S. square / rectangular tubes to conform IS:4923-1986).
- (iii) On width and height of shutter + 3mm.
- (iv) The tolerance in the thickness of door shutter shall be + 1mm. The thickness of door shutter shall be uniform throughout with a permissible variation of not more than 0.8mm when measured between any two points.

**Sizes and Types of Door Shutters**

Sizes and types of door shutters shall generally conform to the modular sizes specified in Table-2

**TABLE-2 DIMENSION OF DOOR SHUTTERS**

S.No.	Designation	Size: A		Size: B	Height (mm)
		Width (mm)	Height (mm)	Width (mm)	
1	DS 1	730	2060	700	2045
2	DS 2	830	2060	800	2045
3	DS 3	930	2060	900	2045

**Note 1** D = Door, S = Single Shutter

Note 2 The designation indicates the size of door opening, the first number referring to width in modules of 10cm and the last number the height in modules of 10cm above finished floor level.

Note 3 Standard sizes of pressed steel and T-iron door frames are covered in CPWD Specification 96 Vol. III.

Note 4 Manufactures may supply non-modular size by mutual agreement, if so specifically ordered by the purchaser.

Note 5(i) Shutters used with frames of T-iron or pressed steel conforming to CPWD Specifications Vol. III, 1996 shall be of size A.

(ii) Shutters used with frames of timber or precast reinforced concrete conforming to IS: 4021-1983 and IS: 6523-1983 respectively shall be of size B.

Sizes of the Cup-Board shutters shall be as required by the purchaser.

11.10.1 The surface of the shutters shall be free from any visible defects such as small pores, crazing, blistering, wrinkling, impurities, defective impregnation and colour blots.

11.10.2 Panels of the door shutters shall be flat and shall have smooth and level surface.

11.10.3 All the four edge of the door shutter shall be square. The shutter shall be free from Twist or Wrap in its plane.

11.10.4 The colour of the door shall be as mutually agreed between the purchaser and the manufacturer, which would be selected by the purchaser from the available range of colours being manufactured before placing order.

11.10.5 Scattered pin holes duly repaired and finished by apply resin and not noticeable shall be accepted

11.10.6 No painting, primer is to be applied on the PVC door shutter.

**11.11.0 TEST****11.11.1 TEST ON SHUTTERS**

11.11.1.1 The tests as per Table – 3 shall be carried out by the manufacturer on door shutters. The method of carrying out the tests shall be as per IS: 4020-1994. Acceptability criteria shall be as mentioned against each test.

TABLE NO. 3 TEST ON DOOR SHUTTER

S.No.	Test	Acceptable criteria
1.	Dimensions and defects of squareness Rest	As per IS : 4020 – 1994
2.	General Flatness Test	-do-
3.	Local Planeness Test*	-do-
4.	Impact Indentation Test	-do-
5.	Edge loading Test	-do-
6.	Buckling Test	-do-
7.	Misuse Test	-do-
8.	Slamming Test	-do-
9.	Shock Resistance Test	-do-
10.	Screw Holding Power Test	-do-

\* Local planeness test shall be carried out on the rails, styles and panels separately.

#### 11.11.2 Test on Material

11.1.2.1 Test as per Table – 4 shall be conducted on PVC sheet cut from the door shutter. The method of carrying out the test shall be as per reference code mentioned against each test. Acceptance Criteria shall be given against each test.

TABLE – 4 TEST ON PVC MATERIALS

S.No.	Test	Test Method as per	Acceptable Value
1.	Density (at 27° C)	DIN 53479	Not less than 0.50 gm/cc
2.	Tensile strength at yield	DIN 53455	10 Mps
3.	Elongation at Break	DIN 53455	Not less than 30%
4.	Impact Strength (IZOD) (Charphy unnotched)	DIN 53453	Not less than 15 kg/m <sup>3</sup>
5.	Hardness	DIN 53456	Not less than 25 n/mm <sup>2</sup>
6.	Compressive strength at 10% strain	ASTMD – 695	Not less than 8.83 kg/ cm <sup>2</sup>
7.	Flexural stress	DIN 53452	Not less than 20 Mpa
8.	Thermal Conductivity	DIN 52612	0.059 W/mk
9.	Water absorption after 96 hrs.	DIN 53495	Below 1%
10.	Fire Rating	BS 476	BI'

#### 11.12.0 LIST OF REFERRED INDIAN & OTHER STANDARDS

IS No.	TITLE
IS: 707 – 1976	Glossary of terms applicable to timber technology and utilization.
IS: 4020 – 1994	Door shutters – Methods of tests
IS: 4043 – 1969	Recommendations for symbolic designation of direction closing and faces of doors, windows and shutters.
IS: 10428 – 1983	Glossary of terms applicable to doors.
ISI	Specifications for testing of PVC materials 3360 (Pt-3/Sec.1) Density 3360 (Pt-5/Sec.3) Tensile Strength 3360 (Pt-5/Sec.3) Elongation at break 3360 (Pt-5/Sec.4) Impact Strength 3360 (Pt-5/Sec.12) Harness 3360 (Pt-5/Sec.8) Compressive Strength 3360 (Pt-5/Sec.7) Flexural Strength 3360 (Pt-8/Sec.1) Water Absorption Fire Retardancy

#### 11.12.0 SAMPLING AND CRITERIA FOR CONFORMITY

11.13.1 Lot in any consignment, all shutters of the same grade and type and manufactured under similar conditions of production shall be grouped together to form a lot.

11.13.2 The number of shutters to be selected at random from a lot shall depend upon its size and shall be in accordance with table (given below).

11.13.3 Column 2 & 3 pertain to tests for Dimensions and defects of squareness test, general flatness test and local planeness test.  
Column 4 & 5 pertain to all other tests as per para 11.11.1 & 11.11.2

Lot Size	Sample Size	Permissible No. of Defects	Sample Size	Permissible No. of Defects
1	2	3	4	5
26 to 50	5	0	1	0
50 to 100	8	0	1	0
101 to 150	12	1	2	0
151 to 300	20	2	3	0
301 to 500	32	3	5	0
501 to 1000	50	5	10	1
1001 and above	80	7	15	2

**Note:** For lot size 25 or less, number of samples to be taken for testing shall be as agreed to between the purchaser and the seller / manufacturer.

### 11.13.0 PVC REGID PANEL DOOR SHUTTER

11.14.1 **SPECIFICATIONS:-** Providing and fixing of factory made 30mm thick PVC rigid foam PANEL DOOR SHUTTER made from M S tubular frame of 19 gauge of size 19 x 19mm for styles and 15 15mm for top and bottom tails and covered with 5mm thick heat moulded PVC 'C' channel having width of 50mm to form styles and PVC sheet of width 75mm to form lock rail, bottom rail and top rail on either side. The inner panel should be inserted with 5mm thick PVC sheet sealed with 5mm thick PVC sheet sealed with solvent cement adhesive to the styles and rails with 5mm x 25mm VC sheet beading on either side.

11.14.2 **WIREMESH:-** To make wiremesh door instead of panel insert of 5mm PVC sheet, wiremesh of suitable gauge can be inserted & and sealed to the styles and rails using PVC beading.

11.14.3 **LOUVERS:-** the door shutters can be provided with louvers for the clear opening of 450x300mm at the bottom including one additional horizontal rail of size 50mm x 30mm and two vertical styles of size 50x30mm to accommodate the 5mm thick, 40mm wide PVC sheet louvers (eight No.) alongwith side 25mmx5mm size PVC sheet lapping with slant slots of 5mm width for fixing the louvers in position with PVC cement solvent adhesive and then providing 10mmx5mm size PVC sheet beading on two vertical sides with self tapping sheet metal screws etc. complete.

**Note:** Width of styles and rails will vary with the size of door, Recommended size of styles and rails is given in the table.

**TABLE OF STYLES AND RAILS**

Door width	Styles Size	Rails Size
600mm to 750mm	50mm	75mm
750mm to 900mm	75mm	100mm
900mm and above	100mm	125mm

### 12.0 Aluminium doors, windows, ventilators etc. glazing specifications

12.1 **Extent and Intent:** -The work shall be carried out through an approved Special Agency, who shall furnish all material, labour, accessories, equipment, tool and plants and incidentals required for providing and installing anodized aluminium doors, windows, claddings, louvers and other items as called for on the drawings. The drawings and specifications cover the major requirements only. The supplying of additional fastenings, accessories, fixtures and other items not mentioned specifically herein, but which are necessary to make a complete installation shall be a part of this contract.

12.2 **General:** - Aluminium doors, windows etc. shall be of sizes, section details as shown on the Architectural drawings. The details shown on the drawings indicate generally the sizes of the component parts and general standards. These may be varied slightly to suit the standard adopted by the manufacturers. Before proceeding with any manufacturing, the contractor shall prepare and submit complete manufacturing and

- installation drawings for approval of the Engineer-in-Charge and no work shall be performed until the approval of these drawings is obtained.
- 12.3 **Shop Drawings:** -The contractor shall submit the shop drawings of doors, windows, louvers, cladding and other aluminium work, based on the architectural drawings to the Engineer-in-Charge for his approval. The shop drawing shall show full size sections of doors, windows etc. thickness of metal (i.e. wall thickness) details of construction, sub frame/rough ground profile, anchoring details hardware as well as connection of windows, doors and other metal work to adjacent work. Samples of all joints and methods of fastening and joining shall be submitted to the Engineer-in-Charge for approval well in advance of commencing the work.
- 12.4. **Samples:** -Samples of doors, windows louvers etc. shall be fabricated, assembled and submitted to Engineer-in-Charge for his approval. They shall be of sizes, types etc. as decided by Engineer-in-Charge. All samples shall be provided at the cost of the contractor.
- 12.5. **Sections:** -Aluminium doors and windows shall be fabricated from extruded sections of profiles as detailed on drawings. The sections shall be extruded by the manufacturers approved by the Engineer-in-Charge. The aluminium extruded sections shall conform to BIS designation IIE/IIV 9 WP alloy, with chemical composition technical properties, as per IS: 733 and IS: 1285. The permissible tolerance of the extruded sections shall be such as not to impair the proper and smooth function/ operations and appearance of doors and windows.
- 12.6 **Fabrication:** - Doors, windows etc. shall be fabricated to sizes at factory and shall be of section, sizes, combinations and details as shown on the drawings. All doors, windows etc. shall have mechanical joints. The joints shall be designed to withstand a wind load of 150 Kg. Per Sqm. The design shall also incur that the maximum deflection of any member shall not exceed 1/175 of the span of the member. All members shall be accurately machined and fitted to form hairline joints prior to assembly. The joints accessories such as cleats, brackets etc. shall be of such material as not to cause any bimetallic action. The design of the joints and accessories shall be such that the accessories are fully concealed. The fabrication of doors, windows, etc. shall be done in suitable sections to facilitate easy transportation, handling and installation. Adequate provision shall be made in the door and window members for anchoring to support and fixing of hardware and other fixture as approved by the Architect.
- 12.7 **Anodizing:** - All aluminium sections shall be anodized as per IS: 7088 and to required colour as specified in the item as per IS: 1868 grading as specified in item schedule after cutting the member to requisite sizes before the final assembly. Anodizing confirming to specified grade with minimum average thickness of 15 microns when measured as per IS: 612. The anodic coating shall be properly sealed by steams or in boiling water are cold sealing process as per IS:1868/IS: 6057. Polythene tape protection shall be applied on the anodised section before they are brought to site. All care shall be taken to ensure surface protection during transportation, storage at site and installation. The tape protection shall be removed on installation. The sample will be tested in the approved laboratory and cost of samples; cost of testing etc. shall be borne by the contractor.
- 12.8 **Protection of finish:** - All aluminium members shall be wrapped with approved self-adhesive non-staining. PVC tapes.
- 12.9 **Handling and Stacking:** -
- 12.9.1 Fabricated materials shall be carried in an approved manner to protect the material against any damage during transportation. The loading and unloading shall be carried out with utmost care. On receipt of material at site, it shall be carefully examined to detect any damaged pieces. Arrangements shall be made for expeditious replacement of damaged pieces/ parts. Materials found to be acceptable on inspections shall be repacked in crates and stored safely.
- 12.9.2 In the case of composite windows and doors, the different units are to be assembled first. The assembled composite units should be checked for line, level and plumb before final fixing is done. Units may be serial numbered and identified as out how to be assembled in their final locations if situation so warrants.
- 12.9.3 The contractor shall be responsible for assembling composite, bedding and filling the groove with polysulphide sealant inside and outside, at transoms and mullions placing the doors, windows etc. in their respective openings. After the doors/ windows have been fixed in their correct assigned position, the open hollow sections abutting masonry concrete shall be fitted with approved polysulphide sealant densely packed and finished neat.
- 12.9.4 The contractor shall be responsible for doors, windows, etc. being set straight, plumb, level and for their satisfactory operation after fixing is complete.

12.10 **Installation:** -

12.10.1 Just prior to installation the doors, windows, etc. shall be uncreated and stacked on edge on level bearers and supported evenly. The frame shall be fixed into position true to line and level using adequate number of expansion machine bolts, anchor fasteners, of approved size and manufacture and in an approved manner. The holes in concrete/masonry members for housing anchor bolts shall be drilled with an electric drill.

12.10.2 The door/ windows assembled as shown on drawings shall be placed in correct final position on the opening and marks made on concrete members at jambs, sills and heads against the holes provided in frames for anchoring. The frame shall then be removed from the opening and laid aside. Neat holes with parallel sides of appropriate size shall then be drilled in the concrete members with an electric drill at the marking to house the expansion bolts. The expansion bolts shall then be inserted in the holes, struck with a light hammer till the nut is forced into the anchor shell. The frame shall then be placed in final position in the opening and anchored to the support through cadmium plated machine screws of required size and anchored to the support through cadmium plated machine screws of required size threaded to expansion bolts. The frame shall be set in the opening by using wooden wedges at supports and be plumbed in position. The wedges shall invariably be placed at the meeting at points of glazing bars and frame.

12.11 **PVC/ Neoprene gaskets:** - The contractor shall provide and install PVC/ Neoprene gaskets of approved size and profile at all locations as shown and as called for to render the doors, windows etc. absolutely air tight and weather tight. The contractor shall produce samples of the gaskets for approval and shall procure the same after approval only.

12.12 **Fittings:** - Hinges, stays, handles, tower bolts, locks and other fittings shall be of quality and manufacturer as approved by the Engineer-in-Charge.

12.13 **Manufacturer's Attendance:** - The manufacturer immediately prior to the commencement of glazing shall adjust and set all windows and doors and accept responsibility for the satisfactory working of the opening frames.

12.14 **Mastic Cement:** -The gaps between frames and supports and also any gaps in the door and windows sections shall be raked out as directed and filled with mastic cement of approved colour and make to ensure complete water tightness. The mastic cement shall be of such colour and composition that it would not stain the masonry/concrete work, shall receive paint without bleeding, will not sag or run and shall not set hard or dry out under any conditions of weather. The sample of mastic cement to be used for this purpose shall be got approved from the architect before its actual use.

12.15 **Details of Test:** -

12.15.1 The various tests on aluminium sections shall be conducted in accordance with the relevant IS codes.

12.15.2 The minimum number of tests for anodizing and corrosion resistance shall be as given below: -

S.No.	Details	No. of Tests
1.	Doors, windows and ventilators	One test for every 1000 kg or part thereof.

12.15.3 The samples of major member of each unit of doors/ windows shall be selected at random by Engineer-in-Charge as such that all the aluminium section shall be got tested.

12.16 **Acceptance Criteria:** - The aluminium work shall carry two years guarantee after completion of work against unsound material, workmanship and defective anodizing/ powder coating as per guarantee bond. Two years guarantee in prescribed Performa attached under sheet VI-15 must be given by the specified firm, which shall be counter signed by the contractor, in token of his overall responsibility. 10% (ten percent) of the cost of these items would be retained as security deposit and the amount so deducted would be released after two years from the date of completion of the entire work under the agreement, if the performance of the items is found satisfactory. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in full if bank guarantee of equivalent amount is produced and deposited with the department.

12.17 **Rates:** -

12.17.1 The quoted rates of the item shall include the cost of materials, labour required in all the above operations.

12.17.2 The rates include the cost of hinges/ pivots and rest of the fittings shall be paid separately.

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS / OVER HEAD TANK**

This agreement made this .....day of ..... (Two Thousand ..... only) ..... between ..... S/o .....(hereinafter called the GUARANTOR of the one part) and the Director, PGIMER, Chandigarh (hereafter called the Institute of the other part).

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Institute on the other part whereby the contractor inter alia, undertook to render the building and structures in the said contract recited completely water and leak-proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain water and leak proof, for s from the date of completion of work.

NOW THE GUARANTOR hereby guarantees that work executed by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be Ten years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final and binding on Guarantor.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor’s cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing of commits breach there under, then the guarantor will identify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GURANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Institute, the decision of the Engineer-in-Charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator .....and .....by ..... for and on behalf of the Director, PGIMER, Chandigarh on the day, month and year first above written.

SIGNED, sealed and delivery by OBLIGATOR in the presence of:-

- 1. ....
- 2. ....

SIGNED FOR AND BEHALF OF THE DIRECTOR,PGIMER, CHANDIGARH BY .....in the presence of:-

- 1. ....
- 2. ....

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF SANITARY INSTALLATIONS / WATER SUPPLY / DRAINAGE WORK.**

This agreement made this .....day of ..... (Two Thousand ..... only) ..... between ..... S/o .....(hereinafter called the GUARANTOR of the one part) and the Director, PGIMER, Chandigarh (hereafter called the Institute of the other part).

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Institute on the other part whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, leak proof and sound material, workmanship, anodizing, colouring, sealing.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable, leak proof and guaranteed against faulty material and workmanship, and finishing for two years from the date of completion of work.

NOW THE GUARANTOR hereby guarantees that work executed by him will be free from leakage, seepage, cracks in pipes and guaranteed against faulty material and workmanship, defective galvanizing for two years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect to the satisfaction of the Engineer-in-Charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor’s cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all defects or commits breach there under, then the guarantor will identify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GURANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Institute, the decision of the Engineer-in-Charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator .....and .....by ..... for and on behalf of the Director, PGIMER, Chandigarh on the day, month and year first above written.

SIGNED, sealed and delivery by OBLIGATOR in the presence of:-

- 1. ....
- 2. ....

SIGNED FOR AND BEHALF OF THE DIRECTOR,PGIMER, CHANDIGARH BY .....in the presence of:-

- 1. ....
- 2. ....

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF STONE WORK / TILE WORK**

This agreement made this .....day of ..... (Two Thousand ..... only) ..... between ..... S/o .....(hereinafter called the GUARANTOR of the one part) and the Director, PGIMER, Chandigarh (hereafter called the Institute of the other part).

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Institute on the other part whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, workmanship, finishing and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty workmanship, finishing and materials.

NOW THE GUARANTOR hereby guarantees that work executed by him will remain structurally stable after the expiry of maintenance period prescribed in the contractor for the minimum life of five years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects to the satisfaction of the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor’s cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all defects, commits breach there under, then the guarantor will identify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GURANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Institute, the decision of the Engineer-in-Charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator .....and .....by ..... for and on behalf of the Director, PGIMER, Chandigarh on the day, month and year first above written.

SIGNED, sealed and delivery by OBLIGATOR in the presence of:-

- 1. ....
- 2. ....

SIGNED FOR AND BEHALF OF THE DIRECTOR, PGIMER, CHANDIGARH BY .....in the presence of:-

- 1. ....
- 2. ....

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF ANTI-TERMITE WORKS**

This agreement made this .....day of ..... (Two Thousand ..... only) ..... between ..... S/o .....(hereinafter called the GUARANTOR of the one part) and the Director, PGIMER, Chandigarh (hereafter called the Institute of the other part).

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Institute on the other part whereby the contractor inter alia, undertook to render the building and structures in the said contract recited completely termite proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said structure will remain termite proof, for ten years from the date after the maintenance period prescribed in the contract expires.

NOW THE GUARANTOR hereby guarantees that work executed by him will render the structures completely termite proof and the minimum life of such termite proofing treatment shall be ten years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects and for the matter shall replace at his risk and cost such wooden members as may be damaged by terites and in case of any other defect being found, he shall render the building termite proof at his cost to the satisfaction of the Engineer-in-Charge and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost recoverable from the by the Guarantor shall be final and binding.

That if the guarantor fails to execute the anti termite treatment commits breach there under, then the guarantor will identify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GURANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Institute, the decision of the Engineer-in-Charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator .....and .....by ..... for and on behalf of the Director, PGIMER, Chandigarh on the day, month and year first above written.

SIGNED, sealed and delivery by OBLIGATOR in the presence of:-

- 1. ....
- 2. ....

SIGNED FOR AND BEHALF OF THE DIRECTOR, PGIMER, CHANDIGARH BY .....in the presence of:-

- 1. ....
- 2. ....

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**LIST OF FIELD TESTS**

- i) Particle size and shape
- ii) Slumps test
- iii) Flakiness & Elongation index tests
- iv) Compressive strength (concrete or bricks) test
- v) Rebound Hammer test
- vi) Bulking of sand
- vii) Silt content of sand
- viii) Temperature measuring with thermometer with brass protected end 0 -200° C

**FIELD TESTING EQUIPMENT AND INSTRUMENTS****A. Testing Equipment at Field Laboratories**

- i) Balances
  - a) 7 kg. to 10 kg. Capacity, Semi-self indication type-Accuracy 10gm
  - b) 500 gm. Capacity, Semi-self indication type Accuracy 1 gm.
  - c) Pan Balance – 5 kg. Capacity, accuracy 10 gm.
- ii) Sieves: as per IS 460 – 1962.
  - a) I.S. Sieves – 450mm internal dia of sizes 100mm, 80mm, 63mm, 50mm, 40mm, 25mm, 20mm, 12.5mm, 10mm, 6.3mm, 4.75mm complete with lid and pan.
  - b) IS Sieves – 200mm internal dia (brass frame) consisting of 2.36mm, 1.8mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan.
- i) Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly.
- ii) Equipment for slump test – Slump Cone, Steel Plate, tamping rod, steel scale, scoop.
- iii) 100 tonnes compression testing machine, electrical-cum manually operated.
- iv) Graduated measuring cylinders 200 ml capacity
- v) Enamel trays (for efflorescence test for bricks and other tests)
  - a) 300mm x 250mm x 40mm
  - b) Circular plates of 250mm dia
  - c) 600mm x 450mm x 500mm
  - d) 450mm x 300mm x 40mm
- vi) ISI marked 150 x 150 x 150mm concrete cube moulds as per site requirement.
- vii) Graduated cylinder 1000 ml. Capacity.

**B. Field Testing Instruments**

- (i) Steel tapes – 3m
- (ii) Vernier Calipers
- (iii) Micrometer Screw 25mm gauge.
- (iv) A good quality plumb bob.
- (v) Spirit level minimum 30 cms long with 3 bubbles for horizontal vertical
- (vi) Wire gauge (circular type) disc.
- (vii) Foot rule
- (viii) Long nylon tread.
- (ix) Rebound hammer for testing concrete.
- (x) Ultrasonic pulse velocity meter
- (xi) Magnifying glass
- (xii) Screw driver 20 cms long
- (xiii) Ball pin hammer, 100 gms
- (xiv) Plastic bags for taking samples
- (xv) Digital Distance meter
- (xvi) Levelling machine
- (xvii) Theodolite

**PROFORMA FOR TESTS CARRIED OUT**

NAME OF THE WORK:  
AGREEMENT NO.& DATE

DIVISION/  
SUB-DIVISION

Sl. No.	Item	Quantities as per agreement	Frequency as per specification	No. of test required	R.A. bill No.	Up-to-date quantity	No. of tests required	No. of test actually done	Remarks
1	2	3	4	5	6	7	8	9	10

Signature of Contractor

**BITUMEN/CEMENT/PAINT REGISTER**

NAME OF THE WORK:  
AGREEMENT NO.

DIVISION/  
SUB-DIVISION

**Particulars of Receipt**

Date of Receipt	Source of receipt with details if any	Batch No.	Date of manufacture	Date of expiry	Qty. received	Progressive Total	Date of Issue	Qty Issued	Items of work	Qty. Returned at the end of day's work
1	2	3	4	5	6	7	8	9	10	11

**Particulars of Issue**

Net Qty. Issued	Progressive Total	Daily Balance in Hand	Contractor's Initial	J.E. Initial		Periodical Check	
						By AE	By HE
12	13	14	15	16		17	18

**Hospital Engineer (Civil-I)  
PGL, Chandigarh.**

<b>SECTION-XI</b>	<b>GUIDELINES FOR CONSTRUCTION SITES FOR COVID-19 OUTBREAK</b>	
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In response to COVID-19 outbreak, the following Standard Operating Procedures (SOPs) and guidelines to ensure safety of construction site workers are issued for field units. In addition to trained Supervisor(s), a Site Safety Representative (SSR) will be deployed at every site, to ensure the safety guideline is followed. Necessary trainings will be given in advance to Supervisors and SSRs, so that they can train the workers further.

**A. General Guidelines — Applicable to All**

1. The workers coming from outside will be required to self-declare their health profile as per Annexure 1 and shall be quarantined for a period of at least 15 days.
2. Mandatory Thermal Scanning of everyone entering and exiting a construction site will be done for fever with thermal scanners. If anyone leaves and re-enters the site during the shift, re-screening of the individual will be done prior to re-entry into the work site.
3. PPE and Other material requirement shall be documented as per Annexure-II.
4. PFO\lesion for hand wash & sanitizer (touch free recommended) will be made at all entry and exit points and common areas (including at distant locations like higher floors). Everyone will be required to wash & sanitize his/her hands before entering the site and using PPEs. Same procedure to be followed after removing PPEs and exiting the premise. Sufficient quantities of all the items should be available at the site.
5. All Protocol including Emergency Response will be laid out. Periodic tailgate sessions will be arranged to review site protocols in view of highly dynamic scenario ensuring social distancing norms. During these sessions, everyone including workers will be informed about the safety guidelines and important updates. Necessary arrangements for announcements shall be made at every site.
6. Mandatory use of PPEs (face mask, hand gloves and other as applicable) by everyone entering the premise. Re-usable PPEs should be thoroughly cleaned and should not be shared with others.
7. Entire construction site including site office, labour camp, canteens, pathways toilets and entry / exit gates will be disinfected on daily basis. Housekeeping team should be provided with necessary PPEs.
8. There will be total Ban on non-essential visitors at sites (including from Head office staff, consultants etc.)
9. There will be strict ban on Gutka, Tambaku Paan etc. on site and spitting shall be strictly prohibited.
10. Food should be consumed at designated areas only ensuring social distancing.
11. Common sitting arrangements should be removed.
12. Post lunch, waste should be disposed by individual in designated bins and area should remain clean.
13. Areas with a probability of bigger gathering, for eg. cleaning area, toilets etc. should be identified and all arrangements should be made to ensure social distancing.
14. A doctor will be present periodically (at least once a week) at site on allotted time for any medical assistance.
15. Appropriate signage at construction site spelling out safety practices in the language which is understood by all.
16. Hospital/clinics in the nearby area, which are authorized to treat COVID- 19 patients, should be identified and list should be available at Site all the time.
17. For any confusion, clarification and update, everyone should approach designated authority or rely on authentic source.
18. Rumors shall be discouraged and offenders be warned.
19. An isolation room shall be created at site.

**B. Guidelines for Workers**

1. On day 0, before resuming the work on site post lockdown period, mandatory medical check-up will be arranged for all workers. The workers coming from outside will be quarantined for a period of at least 15 days. Only medically fit workers will be deployed at site and medical assistance will be arranged for unfit workers. Medical check up camp should be arranged every month.
2. The labours staying at site will not be allowed to go outside. All the essential items will be made available to labours at site only. If necessary, the workers can go out wearing PPEs. after informing supervisor. Similarly no outside labour will be allowed at site without following proper procedure and instructions.
3. Start time on site will be staggered to avoid congestion at the entry gates. Number of workers working at a

particular time / place will be reduced by making arrangements for different shifts / areas. Accordingly, additional staff such as security guards, supervisors etc. will be deployed.

4. As in most cases, workers reside at the Sites, hence there is no need for any travel. For Workers staying outside, (which are always nearby) special transportation facility will be arranged without any dependency on the public transport system.
5. During attendance, training and other sessions, social distancing guidelines will be followed along with provision of no-touch attendance.
6. Workers should not shake hands when greeting others and while working on the site.
7. Workers shall avoid contact with sick people and avoid going to site if they are feeling sick, have fever, cough or shortness of breath. In such case, supervisor should be informed immediately.
8. Workers with such symptoms should not come to site and should be placed in isolation and medical assistance will be provided on immediate basis
9. Mandatorily wear face masks while working on site. While not wearing masks, worker shall cover his mouth and nose with tissues.
10. Cough/sneeze should be done in the crook of one s arm and your elbow avoid large gatherings or meetings of 10 people or more. Stay at least 6 feet away from others on job sites and in gatherings, meetings, and training sessions.
11. Not more than 2/4 persons (depending on size) will be allowed to travel in lifts or hoists. Use of staircase for climbing should be encouraged.
12. Workers should clean hands frequently by washing them with soap and water for at least 20 seconds. When hand washing isn't possible, alcohol- based hand sanitizer with greater than 60% ethanol or 70% isopropanol should be used
13. Workers should not share their belongings like food, water bottles, utensils, mobile phones etc. with others.
14. The utensils should be washed properly post use at designated place.
15. Post work, workers should change their clothes before leaving the site and clothing should not be shook out.
16. Avoid touching eyes, nose, or mouth with unwashed hands

**C. Guidelines for Material, Tools, Machinery, Vehicles etc.**

1. Wipe down interiors and door handle of machines or construction Vehicles the handles of equipment and tools that are shared with disinfectant prior to using.
2. Non-touch waste bin with disposable garbage bag should be installed for waste collection at all common access areas.
3. Proper disposal of garbage should be ensured.
4. At all point of time, easy access to parking should be ensured since public transit is limited.
5. All construction material arriving at site should be left idle for 3 days before use to ensure safe usage.
6. All vehicles and machinery entering the premise should be disinfected by spray mandatorily

**D. Emergency protocol in case of detection of symptoms of COVID 19 to be observed by Project Manager of Contractor**

1. Immediate shift worker to isolation room. Inform the Engineer-Incharge or his Nodal officer.
2. Call for a doctor.
3. Keep worker under observation for a few days in isolation room. In case of doubt act per advice of local doctor.
4. Covid testing shall be arranges as per instruction of Doctor and if so advised by Doctor move worker to Hospital.
5. Prevent rumours and take strict action against those who spread it.

**Annexure-I****COVID-19 (Coronavirus) Exposure Questionnaire for New workmen**

Name	Native (State, District/City, Village)
Age	
Gender	

Please answer the following questions with as much detail as possible:

## 1. Location/Travel Declaration

a. Please provide your locations/travel patterns over the past 14 days in Table below:

COUNTRY	CITY/VILLAGE	DATE ARRIVED/SINCE WHEN YOU HAVE BEEN IN THE LOCATION	DATE DEPARTED

2. Any cases of COVID-'19 in your in the locations where you have been for last 14 days?

YES

NO

3. Are you, or have you been in close contact with anyone who has been quarantined or who has been diagnosed with novel coronavirus (SARS-CoV-2/COVID-19)? If yes, please provide details

YES

NO

4. Have you ever been quarantined due to a possible exposure to novel coronavirus (SARS-CoV-2/COVID-19)? If yes, please provide dates and locations.

YES

NO

5. Have you experienced any of the following symptoms within the last 14 days?

- Any fever
- Cough
- Shortness of breath
- Malaise (flu-like tiredness)
- Rhinorrhea (mucus discharge from the nose)
- Sore throat
- Gastro-intestinal symptoms such as nausea, vomiting and/or diarrhea

If yes, to any of these, please indicate which and provide full information

6. Are you currently in good health?

YES

NO

**Declaration**

I confirm that the answers I have given are, to the best of my knowledge, true, and that I have not withheld any material information that may influence the assessment or acceptance of this application.

I agree that this form will constitute part of my application for insurance(s) and that failure to disclose any material fact known to me may invalidate my insurance(s).

Signature

Date


Time

Witness

**Annexure-II****PPE and Other material requirement:**

Sl No.	List of Items (Personal Sanitization)	At Stores	At Office	At workmen camp
1	Hand Sanitizer (min 60% alcohol)	1 bottle (500ml) at all entrances and to be refilled on regular basis	1 bottle (500ml) at all entrances and to be refilled on regular Basis	2 bottle (500ml) at all entrances and to be refilled on regular basis
2	Alcohol based Soap Solution	To be made available on demand	To be made available on demand	2 bottle (500ml) at the front side of each camps visible & easy to access along with water availability for washing. Need to be refilled on regular basis
	<b>Soap (100 gm)</b>	1 No in each toilets and wash basins		1 No. to be distributed to each contractor workman once in a week.

Sr No.	List of Personal Protective Equipment PPEs	Scope
1	Nose Mask & Paper Tissues	For all workmen (daily one for at least one month)
2	Face mask/Face shield/Goggles	For workmen involved in disinfection/sanitization activity (new one to be issued for each day activity and COVID Marshal
3	Gloves (Nitrile)	For workmen involved in disinfection/sanitization activity (new one to be issued for each day activity)
4	Coverall/Gowns (Nitrile)	For COVID Marshals and workmen involved in disinfection/sanitization activity (new one to be issued for each day activity)

SECTION-XII	<b>SPECIAL CONDITION REGARDING NGT GUIDELINES</b>	
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The guidelines regarding preventive measures for Air Pollution from demolition & construction activities issued by Delhi Pollution Control Committee vide no. DPCC/EIA/Res-001 to 172/NGI-21/2015/225-408 dated 17.04.2015 in compliance of Hon'ble National Green Tribunal direction are applicable to the contractor. All appropriate protection measures as per NGT & DPCC guidelines shall be taken by the contractor. All appropriate protection measures as per NGT & DPCC guidelines shall be taken by the contractor at his own cost nothing extra shall be payable to contract on this account.

**A. Hon'ble National Green Tribunal its order dated 04.12.2014 in respect of air pollution from dust resulting from demolition and construction activity inter-alia has directed as follows:-**

1. No government, authority, contractor, builders or any person would be permitted to store/dump construction material or debris on the metalled road.
2. Beyond the metalled road the area where such construction material or debris can be stored shall be physically demarcated by the Officers of all the concerned Authorities/Corporation. It shall be ensured that such storage does not cause any obstruction to the free flow of traffic and/or inconvenience to the pedestrians. It should be ensured that no accidents occur on account of such permissible storage.
3. Every builder, contractor or person shall ensure that the construction material is completely covered by tarpaulin. All other precautions should be taken to ensure that no dust particles are permitted to pollute the air quality as a result of such storage. It shall also be ensured that appropriate protection measures are taken by raising of wind breakers of the appropriate height on all the sides of plot/area using plastic and/or other similar material, to ensure that no construction material dust fly outside the plot area and it will be the builder/contractor responsibility to ensure that their activity does not cause any air pollution during the course of the construction and/ or storage of material or construction activity. This condition shall be strictly adhered to by every builder, contractor, person or authority whether it relates to construction on small plot or a multistoreyed building. In the event of default they shall be liable to be prosecuted under the law in force, as well as for causing environmental pollution and shall also be liable to pay compensation which would be determined by the Tribunal in accordance with law.
4. All the trucks or vehicles of any kind which are used for construction purposes and/or are carrying construction materials like cement, sand and other allied material shall be fully covered. The vehicles would be properly cleaned, shall be dust free and/or other precautions would be taken to ensure that enroute their destinations, the dust, sand or other particles are not permitted to be released in the air and/or contaminate air. Any truck which is not complying with these directions would not be permitted to enter NCR Delhi.

**B. Hon'ble national Green Tribunal in order dated 10.04.2015 interalia has directed as follows:-**

1. Every builder or owner shall put tarpaulin on scaffolding around the area of construction and the building. No person including builder, owner can be permitted to store any construction material particularly sand on any part of the street, roads in any colony.
2. The construction material of any kind that is stored in the site will be fully covered in all respects so that it does not disperse in the Air in any form.
3. All the construction material and debris shall be carried in the trucks or other vehicles which are fully covered and protected so as to ensure that the construction debris or the construction material does not get dispersed into the air or atmosphere, in any form whatsoever.
4. The dust emissions from the construction site should be completely controlled and all precautions taken in that behalf.
5. The vehicles carrying construction material and construction debris of any kind should be cleaned before it is permitted to ply on the road after unloading of such material.
6. Every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris shall be provided with mast to prevent inhalation of dust particles.

7. Every owner and or builder shall be under obligation to provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and debris relatable to dust emission.
8. It shall be the responsibility of every builder to transport construction material and debris waste to construction site, dumping site or any other place in accordance with rules and in terms of this order.
9. All to take appropriate measures and to ensure that the terms and conditions of the earlier order and these orders should strictly comply with by fixing sprinklers, creations of green air barriers.
10. Compulsory use of wetjet in grinding and stone cutting.
11. Wind breaking walls around construction site.
12. All the builders who are building commercial, residential complexes which are covered under the EIA Notification of 2006 shall provide green belt around the building that they construct. All Authorities shall ensure that such green belts are in existence prior to issuance of occupancy certificate.
13. All builders shall ensure that C&D waste is transported in terms of this order to the site in question only and due record in that behalf shall be maintained by the builders, transporters and NCR of Delhi
14. Even if constructions have been started after seeking Environmental Clearance under the EIA notification 2006 and after taking other travel but is being carried out without taking the preventive and protective environmental steps as stated in this order and MoEF guidelines, 2010, the State Government SPCB and any officer of any department as afore stated shall be entitled to direct stoppage of work.

Environmental Impact Assessment Guidance Manual for Building, Construction, Township and area development Proects of February, 2010 is available on the website of MoEF & CC invisagin the following guidelines for mitigation measures in respect of dust control from Building, Construction Projects.

Adopting techniques like, air extraction equipment, and covering scaffolding, hosing down road surfaces and cleaning of vehicles can reduce dust and vapour emissions. Measures include appropriate containment around bulk storage tanks and materials stores to prevent spillages entering watercourses.

The other measures to reduce the air pollution on site are:


- › Sprinkling of water and fine spray from nozzles to suppress the dust.
- › On-Road- Inspection should be done for black smoke generating machinery.
- › Promotion of use of cleaner fuel should be done.
- › All DG sets should comply emission norms notified by MoEF.
- › Vehicles having pollution under control certificate may be allowed to ply.
- › Use of covering sheet to prevent dust dispersion at buildings and infrastructure sites, which are being constructed.
- › Use of covering sheets should be done for trucks to prevent dust dispersion from the trucks, implemented by district offices.
- › Paving is a more permanent solution to dust control, suitable for longer duration projects. High cost is the major drawback to paving.
- › Reducing the speed of a vehicle to 20 kmph can reduce emissions by a large extent. Speed bumps are commonly used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, it may be necessary to divert traffic to nearby paved areas.

Material storages / warehouses – Care should be taken to keep all material storages adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust / particulate emissions. Fabrics and plastics for covering piles of soils and debris is an effective means to reduce fugitive dust.

By way of these orders/notice you are hereby notified for mandatory strictly adherence to and compliance of the directions contained in the order of Hon'ble Tribunal as well as MoEF guidelines, 2010 in relation to precautions required to be taken while carrying on construction activities.

Copy of NGT order dated 04.12.2014, 10.04.2015 copy of MOEF guidelines 2010 and copy of notice issued are available at the DPCC website also i.e. "<http://dpcc.delhigovt.nic.in>".

Please note that the non-compliance of Hon'ble NGT order will make you liable for action as per law including the directions for stoppage of work.

<b>SECTION-XIII</b>	<b>LIST OF APPROVED MAKES &amp; SCHEDULE OF QUANTITIES (CIVIL WORK)</b>	
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**LIST OF APPROVED MAKES**

S.No.	Description	Makes/Brands
	<b>(CIVIL WORKS)</b>	
1.	Ready Mix Concrete	L & T CONCRETE / J.K. LAKSHMI / ULTRATECH / KWIK MIX
2.	Grey Cement 43 Grade (OPC / PPC)	ACC / L & T / GUJRAT AMBUJA / VIKRAM / BIRLA / JK CEMENT / SHREE
3.	White Cement	BIRLA WHITE / JK WHITE
4.	Reinforcement Steel	SAIL / TISCO / RINL / IISCO
5.	Structural Steel	JINDAL/TATA/ SAIL
6.	Flush Door Shutters	CENTUARY / KITPLY / KUTTY
7.	PVC Door Shutter	RAJSHREE / SINTEX PLAST / DURO PLAST
8.	Ply / Commercial Board	CENTUARY / KITPLY / NATIONAL / ANCHOR
9.	Prelaminated Board	ANCHOR / NOVAPAN / KITLAM/ BAJAJ
10.	Sunmica	FORMICA / KITMICA/ DECOLAM
11.	Pressed Steel Frame / Steel windows	SAN HARVIC, STEELMAN INDUSTRIES, PD INDUSTRIES, METAL WINDOWS, CHANDNI INDUSTRIES, GANPATI UDYOG (RAJPURA)
12.	Aluminium, Door Fittings	ARGENT / CLASSIC / UNIVERSAL
13.	Mortise Lock	GODREJ / HARRISON / PLAZA
14.	Door Closure (Hydraulic)	UNIVERSAL / RITZ / EVEREST
15.	Double Action Hydraulic Floor spring	UNIVERSAL / GODREJ
16.	Helical and Double Action Spring	RITZ / HERYKA / AVON
17.	Adjustable Friction Window stay	EARL BIHARI PVT. LTD. (EBCO)
18.	Wall Tiles	JOHNSON / ORIENT / KAJARIA
19.	Ceramic Floor Tiles, Vitrified Tiles	KAJARIA / JOHNSON / NITCO
20.	Precast Concrete Tiles (Terrazo / Plain / Chequered), Paver Blocks, PCC Kerbs& Channels.	NTC (PKL) / NITCO / MODERN PAVERS (DELHI) / SUPER TILES (NOIDA) / SWASTIK TILES/GTC/SARAL IMPEX/BALAJI TILES/SHAM TILES & CONCRETE PRODUCTS/MGM INFRA/KRISHNA TILES/ GIAN NIRMAN LTD.
21.	Vinyl Flooring	TUSKAR / WONDER FLOOR / LG / ARMSTRONG
22.	Wooden Flooring	ARMSTRONG / PERGO
23.	Glass (Float / Tinted)	MODIGUARD / TRIVENI / SAINT GOBAIN / ATUL
24.	Paint (Synthetic Enamel / Emulsion / Anti-Fungal)	NEROLAC / ASIAN / BERGER/ ICI
25.	Road marking paint	BRIGHT / ORIENT
26.	Oil Bound Distemper	NEROLAC / ASIAN / BERGER/ ICI
27.	Wood & Steel Primer	NEROLAC / ASIAN / BERGER/ ICI
28.	Water Proofing Compound	CICO / PIDILITE / ROFEE / DR. BECK / DURASEAL
29.	Aluminium Sections	INDALCO / HINDALCO / JINDAL
30.	Tile Adhesive	PIDILITE / SIKA / FOSROC / BAL ENDURA
31.	Glass Mosaic Tiles	PIXEL GLASS / CORAL / ITALIA / BISAZZA / PALLADIO
32.	False ceiling:	
	a) Mineral Fibre	USG / ARMSTRONG / DAIKEN / DEXUNE
	b) Gypsum	SAINT GOBAIN / USG / DEXUNE / ARMGYP / DIAMOND
	c) Wooden	KITPLY / ANCHOR / ARMSTRONG WOODWORKS
	d) Metallic	LLOYD / ARMSTRONG / LUXLON / DEXUNE
33.	Silicon paint	PIDILITE / CICO / ROFF / CHOKSEY
34.	Wall putty	JK / BIRLA / ASIAN
35.	Dash / Anchor fasteners	HILTI / FISCHER
36.	Nuts / Bolts & Screws	GKW / ATUL
37.	Backer rod	SUPREME
38.	Sealant	BASF INDIA / SIKA / FOSROC / DR. FIXIT / CHOKSEY
39.	Structure Silicon / Weather Silicon	DOW CORNING / WALKER
40.	G.S. Sheet (Corrugated)	TATA/ SAIL / NIPPON
41.	APP water proofing membrane & Primer	IWL / PIDILITE / STP
42.	UV Coated Polycarbonate Sheet	LEXAN / ULTRALITE / POLYGAL/GALLINA
43.	PPGI Sheets	JSW / BHUSHAN / SAIL
44.	Profile Sheets forming Vendors	JINDAL MECTEC/ SYNERGY THRISLINGTON/ TATA BLUESCOPE STEEL
45.	Electric Chimney	GLEN / ELE / KUTCHINA
46.	Modular Kitchen	GODREJ / HAFELE / HETTICH
47.	Prefabricated sandwich Puf Panels for walls & roofs	RINAC / SYNERGY THRISLINGTON / JINDAL MECTEC
48.	Puf panels Hardware fittings accessories / Hinges	GEZE / ALTOS / DOYEN
49.	Vertical blinds/ Roller Blinds	VISTA/MAC/ / HUNTER DOUGLAS
50.	Epoxy Paint	PIDILITE, DR BECK, SIKA
51.	Exterior Paint	NEROLAC (SHADE NO. 2912P), BERGER ((SHADE NO. 7P0188), ASIAN (SHADE NO. 8466) , ICICI DULUX (SHADE NO. 30YY51/098)

S.No.	Description	Makes/Brands
	<b>(PUBLIC HEALTH WORKS)</b>	
1.	Vitreous China Ware (Ist Class quality)	PARRYWARE / HINDUSTAN VITREOUS / CERA
2.	Plastic Seat Cover	PARRYWARE / COMMANDER / HINDWARE
3.	C.P. Fittings / Accessories	ESSCO / EBONY / JAL / JAQUAR
4.	PTMT fittings	PRAYAG / POLYTUF
5.	Flush Valve	JAQUAR / JAL / ESS ESS
6.	Stainless Steel Sink	COBRA / NEEL KANTH / AMC / NIRALI
7.	Soil waste pipes & fittings	
	a. Centrifugal Cast Spun Pipe	NECO/ HIF/ACL/ KESORAM
	b. Sand cast iron pipes	NIF / RIF
	c. Centrifugal Cast Spun LA Pipe	ELECTRO STEEL / KESORAM
8.	GI & MS Pipes	TATA / JINDAL (HISAR) / BST
9.	PVC Water Supply Pipes & Fittings	NOCIL / CHEMPLAST / WAVIN / SUPREME / DIZAYN / DIPLAST
10.	GI Fittings (Malleable Cast Iron)	UF / SVW / UNIK
11.	Gun Metal Valve (Full way, Check & Globe valve)	LEADER / SANT / KILBURN
12.	Butter Fly Valve	CASTLE / C & R / ADVANCE / IVC / AUDCO
13.	C.I. Double Flanged Sluice Valve & Check Valve	IVC / KIRLOSKAR / LEADER
14.	C.I. Double Flanged Non return Valve	GEETA / KIRLOSKAR / C & R / AUDCO / CASTLE / ADVANCE
15.	Foot Valve	LEADER / IVC / KIRLOSKAR
16.	C.I. Manhole Cover & CI Grating	RIF / ADHUNIK / BC
17.	Bib & Stop Cocks (Brass)	KPR / SANT / VIF
18.	Mirror Glass	MODI GUARD / ATUL / GOLDEN FISH
19.	Insulation Hot Water Pipes (Mineral wool)	LAPINUS
20.	Bed Pan Sink	PAMINI
21.	Elbow Action Surgical Mixer, Taps & Bed pan sink accessories	VIJAY
22.	PVC tanks	DIPLAST / SINTEX / AQUA PLUS
23.	Stone ware pipe & G.T.	PERFECT / CHANDIGARH CERAMICS / HIND/ ISI MARKED
24.	PVC plumbing pipes/fittings	NOCIL / CHEMPLAST / WAVIN / SUPREME / DIAZYN / DIPLAST
25.	Ferrules	DHAWAN SANITARY UDYOG (PRIMA)

A.E. (P)

Hospital Engineer (Civil-I)  
PGIMER, Chandigarh

**Cleaning of Sewerline, Manhole of Residential Area, Hostels area and Research Block A & B for One year in Sector-12, PGIMER, Chandigarh.**

**SCHEDULE OF QUANTITY**

S.No	Description of items	Unit	Qty	Rate	Amount
1	Cleaning and desilting of gully trap chamber/ Manhole including removal of rubbish mixed with earth etc. and disposal of same, all as per the direction of Engineer-in-charge.	Each	708.00	108.30	76676.40
2	Cleaning of choked sewer line by diesel running vehicle mounting hydraulic operated high pressure suction cum jetting sewer cleaning machine fitted with pump having 4000 litres suction capacity and 6000 litres water jetting tank capacity including skilled operator, supervising engineer etc. for cleaning and partial desilting of manholes and dechocking of sewer lines. Dechocking and flushing of sewer line from one manhole to another by high pressure jetting system of 2200 PSI for sewer line from 150mm dia upto 300mm.	Rmt	1971.90	340.75	671924.93
					748601.33
	Add Water Chagres @ 0.5%				3743.01
				<b>Total</b>	<b>752344.33</b>

Percentage to be quoted by the agency (above): \_\_\_\_\_ (In Figures)

\_\_\_\_\_ (In Words)

Percentage to be quoted by the agency (below): \_\_\_\_\_ (In Figures)

\_\_\_\_\_ (In Words)

Amount worked out by the agency as per Percentage quoted: \_\_\_\_\_ (In Figures)

\_\_\_\_\_ (In Words)

(Signature of the agency with seal)

**NOTE:**

1. This is a percentage rate tender, therefore, percentage is only to be quoted by the agency in figures & words on the rates & amount mentioned in Schedule of quantity.
2. the percentage quoted should be inclusive of all taxes including GST etc. and nothing extra shall be payable on this account

A.E. (P)

Hospital Engineer (Civil-I)  
PGIMER, Chandigarh