

MILITARY ENGINEER SERVICES**NAME OF WORK : PROVN OF FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD****CONTENTS**

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Signature of Contractor

AGE Contract
For Accepting Officer

Date:

Tele 020-27673300

Garrison Engineer
Dehu Road - 412101

8094/19/E8

19 May 2026

M/s _____

_____**NAME OF WORK : PROVN OF FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD**

Dear Sir,

1. Tender documents in respect of above work are uploaded on the site **www.eprocuremes.gov.in**. The tender is on single stage two cover /two stage two cover/three cover e-tendering system. The contents of Cover 1 & Cover II are specified in NOTICE OF TENDER.
2. Bids will be received online by ACCEPTING OFFICER upto the date and time mentioned in the **NOTICE INVITING TENDER (NIT)**. No tender/bid will be received in physical form and any tender/bid received in such manner will be treated as non bonafide tender/bid.
3. Bid will be opened on due date and time fixed for opening in the presence of tenderers/bidders or their authorized representatives, who have uploaded their quotation bid and who wish to be present at the time of opening the bids.
4. Your attention is also drawn to instruction on filling and submission of tender attached herewith. You may forward your points on tender documents and/or depute your technical representative for discussion on tender/ drawings and to clarify doubts, if any, on or before bid submission start date. You are requested not to write piece meal points and forward your points duly consolidated before due date viz bid submission start date.
5. Unenlisted contractors are required to submit the scanned copies (in pdf file) of documents required as per eligibility criteria mentioned in instructions for filling the tender documents and Appendix 'A' to **NIT** alongwith EARNEST MONEY DEPOSIT (EMD) and tender fee on e-procurement portal and submit the physical documents in the office of GE Dehu Road within time limit specified in **NIT**. Inadequacy/deficiency of documents shall make the bid liable for rejection resulting in disqualification for opening of finance bid.
6. (a) Contractor having not executed standing security bond and standing security deposit in any MES formation shall upload scanned copy of EARNEST MONEY DEPOSIT (EMD) mentioned in Notice of Tender and shall ensure receipt of hard copy of EMD in the office of tender issuing authority before date & time fixed for this purpose. In case of failure to abide by any of these two requirements, the finance bid will not be opened.

(b) Contractor having not executed standing security bond and standing security deposit in any MES formation would be required to deposit individual security deposit on acceptance of tender which will be calculated with reference to the tendered cost as per scales laid down by MES for calculation of "EARNEST MONEY" enhanced by 25% subject to maximum of ₹. 1875000/- (Rupees Eighteen Lakhs seventy five thousand Only).

(c) **PERFORMANCE SECURITY** (See Condition 19 of IAFW-2249) In case the tender/bid submitted by the contractor is accepted, the contractor will be required to lodge with the Accepting Officer 'PERFORMANCE SECURITY DEPOSIT' CALCULATED @ 05% (Five percent) of the contract sum as notified by the Accepting Officer within 28 (twenty eight) days of the receipt by the contractor of notification of acceptance of Tender/ bid. The performance security can be submitted by the successful contractor in the form of Bank Guarantee Bond or Government securities, FDR or any other form of deposit approved in MES.

The failure of the contractor to submit the 'Performance Security Deposit' within the stipulated period of 28 days shall constitute sufficient grounds for cancellation of the award of the work and the following action will be taken by the department:-

- (i) In case of Un-enlisted Contractors the 'Earnest Money' submitted by the Contractor shall be forfeited.
- (ii) In case of MES enlisted contractor, amount equal to the earnest money stipulated in the 'Notice Inviting Tender' shall be deposited by the tender through MRO. Issue of tenders to such tenderers shall remain suspended till the aforesaid amount equal to 'earnest Money' is deposited in the Government Treasury and a proof of the same is submitted to the Accepting Officer for his reference and record by the contractor.

7. Enlisted contractors of MES shall submit the scanned copies (pdf file) of enlistment letter, tender fee and such other documents as mentioned, Appx A' to NIT on e-procurement portal & submit physical documents in the office GE Dehu Road before date & time fixed for this purpose
8. The contractor must ensure that the tender/bid on the proper form is uploaded in time as the Accepting Officer will take no cognizance of any quotations/offer received in any other electronic or physical form like email/fax/by hand through post from tenderer/bidder even if they are received in time. **Work order No 1 shall be placed only after submission of performance security of adequate value by the contractor in case a fixed deposit receipt of any bank is furnished by the contractor to the Government.**
9. In view of delays due to system failure or other communication related failures, it is suggested that the tender/bid be uploaded, if necessary, sufficiently in advance of the last due date and time fixed.
10. General Conditions of Contracts (IAFW-2249) (1989 Print) and errata and amendments thereto, Schedule of minimum fair wages and MES SSR (Part - I and Part -II) are not enclosed with these documents These are available for perusal in the Office of GE concerned and this office.
11. Any tenderer, which proposes alterations to any of the condition, specifications laid down in the tender documents or any new condition, whatsoever, is liable to be rejected.
12. **REFUND OF PERFORMANCE SECURITY**
The Performance Security Deposit mentioned on Srl No. 6 (c) above may be refunded to the contractor after the expiration of the defects liability period (vide condition 46) by the GE provided always that the contractor shall first have been paid the final bill and have rendered a 'No-Demand certificate' (IAFW-451) by the contractor through Engineer-in-Charge alongwith "No Claim Certificate" of Engineer-in-Charge with all details as per policy in vogue.
13. These instructions shall form part of the contract documents.

Yours faithfully,

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER**1. EARNEST MONEY DEPOSIT (EMD)**

Contractor(s) who are not enlisted with MES/who are enlisted but have not executed the Standing Security Bond shall submit Earnest Money Deposit as detailed in Notice of Tender in one of the following forms, along with their tender/bid: -

- (a) Deposit at Call Receipt from a Scheduled Bank in favour of Garrison Engineer Dehu Road.
- (b) Receipted Treasury Challan, the amount being credited to the Revenue Deposit of Garrison Engineer. It is advisable that Earnest Money is deposited in the form of deposit call receipt from an approved Schedule Bank for easy refund. In case the tenderer/bidder wants to lodge 'EARNEST MONEY DEPOSIT' in any other form allowed by MES, a confirmation about its acceptability will be obtained from the Accepting Officer well in advance of the bid submission end date and time. Earnest Money Deposit shall be submitted in the name of Garrison Engineer Dehu Road.

NOTES: Earnest Money Deposit (EMD) in the form of Cheque/Bank Guarantee etc. will not be accepted. NON-SUBMISSION OF EARNEST MONEY DEPOSIT (EMD) (scanned copy along with Technical Bid & hard copy before the date & time fixed for opening of BOQ) WILL RENDER THE BID DISQUALIFIED FOR OPENING OF COVER II (FINANCE BID).

2. GENERAL INSTRUCTIONS FOR COMPLIANCE

2.1. The bids received only in the electronic form will be considered. All bids shall be submitted on <http://defproc.gov.in> portal. Documents should be scanned and forwarded in 'pdf' form and 'xls' form as indicated.

2.2. Bids shall be uploaded on <http://defproc.gov.in> portal on or before the bid closing date mentioned in the tender. No tender/bid in any other electronic or physical form like email /fax/ by hand/through post will be considered.

2.3. Bid should be DIGITALLY signed using valid DSC. All pages of tender documents, corrections/ alterations shall be signed/initialed by the lowest bidder after acceptance.

2.4. Drawings, if issued in physical form, must be returned duly initialed by the tenderer/bidder in separate envelope indicating his name and address.

2.5. The tender shall be signed, dated and witnessed at all places provided for in the documents after acceptance. All corrections shall be initialed. The Contractor shall initial every page of tender and shall sign all drawings forming part of the tender. Any tender/bid, which proposes alterations to any of the conditions whatsoever, is liable to be rejected.

2.6. In the technical bid, a scanned copy of Power of Attorney in favour of the person uploading the bid using his/her DSC shall be uploaded. In case the digital signatory himself is the sole proprietor, scanned copy of an affidavit on stamp paper of appropriate value to this effect stating that he has authority to bind the firm in all matters pertaining to contract including the Arbitration Clause, shall be attached in 'pdf' form. In case of partnership concern or a limited company, digital signatory of the bid/tender shall ensure that he is competent to bind the contractor (through partnership deed, general power of attorney or Memorandum and Articles of Association of the Company) in all the matters pertaining to the contracts with Union of India including arbitration clause. A scanned copy of the documents confirming of such authority shall be attached with the tender/bid in 'pdf' form, if not submitted earlier. The person uploading the bid on behalf of another partner(s) or on behalf of a firm or company using his DSC shall upload with the tender/bid a scanned copy (in 'pdf' form) of Power of Attorney duly executed in his favour by such other or all of the Partner(s) or in accordance with constitution of the company in case of company, stating that he has authority to bind such other person of the firm or the Company, as the case may be, in all matters pertaining to the contract including the Arbitration Clause.

2.7. Even in case of Firms or Companies which have already given Power of Attorney to an individual authorizing him to sign tender in pursuance of which bids are being uploaded by such person as a routine, fresh Power of Attorney duly executed in his favour stating specifically that the said person has authority to bind such partners of the Firm, or the Company as the case may be, including the condition relating to Arbitration Clause, should be uploaded in 'pdf' form with the tender/bid; unless such authority has already been given to him by the Firm or the Company. It shall be ensured that power of attorney shall be executed in accordance with the constitution of the company as laid down in its Memorandum & Article of Association.

2.8. Hard copies of all above documents should be sent by the contractor to the Tender issuing authority well in advance to be received before the date & time fixed for the same.

2.9. Bid (Cover 1 & 2) shall be uploaded online well in time.

2.10. The contractor shall employ Indian Nationals after verifying their antecedents and loyalty. Attention is also drawn to special condition 3 referred hereinafter and also conditions 24 & 25 of IAFW 2249 (General conditions of contract).

2.11. Tenderers/bidders who uploaded their priced tenders/bids and are desirous of being present at the time of opening of the tenders/bids, may do so at the appointed time.

2.12. The tenderer/bidder shall quote his rate on the BOQ file only. No alteration to the format will be accepted, else the bid will be disqualified and summarily rejected.

2.13. In case the tenderer/bidder has to revise/ modify the rates quoted in the BOQ (excel sheet) he can do so only in the BOQ, through <http://defproc.gov.in> only before the bid closing time and date.

3. REVOCATION/ REVISION OF OFFER UPWARD OFFERING VOLUNTARY REDUCTION, AFTER OPENING OF FINANCIAL BIDS BY LOWEST BIDDER

In the event of lowest tenderer/bidder revoking his offer or revising his rates upward, offering voluntary reduction, after closing of bid submission date & time, his offer will be treated as revoked and the Earnest Money deposited by him shall be forfeited. In case of MES enlisted Contractors, the amount equal to the Earnest Money stipulated in the Notice of tender, shall be notified to the tenderer/bidder for depositing the amount through MRO. Bids of such Contractors/bidders shall not be opened till the aforesaid amount equal to the earnest money is deposited by him in Govt Treasury. In addition, bids of such tenderer/bidder and his related firm shall not be opened in second call or subsequent calls. Reduction offered by the tenderer/bidder on the freak high rates referred for review shall not be treated as voluntary reduction.

4. CPM (Critical Path Method)

4.1. The project planning for work covered in the scope of tender is based on CPM.

4.2. The tenderer/bidder is expected to be fully conversant with the CPM technique and employ technical staff who can use the technique in sufficient details. Sufficient books and other literature on the subject are widely available in the market which the tenderer /bidder may make use of.

4.3. The tenderer's/bidder's attention is drawn to special condition of the tender regarding preparation of the detailed network analysis and time schedule for the work and his liability for employing sufficient resources to adhere to this schedule. Any inability on the part of the tenderer/bidder in using the technique will be taken as his technical inefficiency and will affect his class of enlistment and future prospect/invitation to tenders for future works.

4.4. Department may issue amendments/errata in form of CORRIGENDUM to tender /revised BOQ to the tender documents. The tenderer/bidder is requested to read the tender documents in conjunction with all the errata/ amendments/corrigendum, if any, issued by the department.

5. These instructions shall form part of the contract documents.

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

MILITARY ENGINEER SERVICES NOTICE INVITING TENDER /NIT)

1. A tender is invited for the work as mentioned in Appendix 'A' to this NOTICE INVITING TENDER (NIT)
2. The work is estimated to cost as indicated in aforesaid Appendix 'A'. This estimate, however, is not a guarantee and is merely given as a rough guide and if the work cost more or less, a tenderer/bidder will have no claim on that account. The tender shall be based on as mentioned in aforesaid Appendix 'A'
3. The work is to be completed within the period as indicated in aforesaid Appendix 'A' in accordance with the phasing, if any, indicated in the tender from the date of handing over site, which will be on or about two weeks after the date of Acceptance of tender.
4. Normally contractors whose names are on the MES approved list for the area in which the work lies, and within whose financial category the estimated amount would fall, may tender/bid but in case of term contracts, contractors of categories SS to E may tender/bid. In case, where the tender amount is in excess of the financial limit of the contractor and the Accepting officer decides to accept the tender/bid, in which event the tenderer/bidder would be required to lodge additional security deposit as notified by the Accepting Officer in term of conditions of contract Contractors whose names are on the MES approved list of any MES Formation and who have deposited standing security and have executed standing security bond may also tender/bid without depositing Earnest money along with the tender/bid and if the tender/bid submitted by such a tenderer/bidder is accepted, the contractor will be required to lodge with the Controller of Defence Accounts concerned the amount of individual security deposit' within thirty days of the receipt by him of notification of acceptance of his tender/bid, failing which this sum will be recovered from 1st RAR payment or from the first final bill. In the case of term/running contracts, remaining sum shall be recovered from subsequent bills) of the contractor. Not more than one tender/bid shall be submitted/uploaded by one contractor or one firm of contractors Under no circumstances will a father and his sons) or other close relations who have business dealing with one another be allowed to tender/bid for the same contract as separate competitors. A breach of this condition will render the tenders/bids of both the parties liable for rejection.
5. The Office of GE Dehu Road will be the Accepting Officer here in after referred to as such for purpose of the contract.
6. The Technical Bid and Financial Bid (Cover-1 and Cover-2) shall be uploaded by the tenderer/bidder on or before the date & time mentioned in **NIT**. A scanned copy of DD with enlistment details/documents shall be uploaded as packet 1/cover-1 ('T' bid) of the tender/bid on e-tendering portal. DD is refundable in case T bid is not accepted resulting in non-opening of 'Q' bid. The applicant contractor shall bear the cost of bank charges for procuring and encashing the DD and shall not have any claim from Government whatsoever on this account.
 - 6.1. Tender form and conditions of contract and other necessary documents shall be available on <http://defproc.gov.insite> for download and shall form part of contract agreement in case the tender/bid is accepted.
 - 6.2 In Case of contractor who has not executed the Standing Security Bond, the Cover-I shall be accompanied with by Earnest Money of amount as mentioned in Appendix 'A' in the form of deposit at call receipt in favour of concerned CCE/ GE/ GE(I)/ AGE(I) (see Appendix 'A') by a scheduled Bank or in receipted treasury Challan the amount being credited to the revenue deposit of the concerned GE (see Appendix 'A').
 - 6.3 A contractor who is not enlisted for the area in which the work lies but whose name is in the MES approved list of any MES formation and who has deposited standing security and executed standing security Bond may bid without depositing earnest money alongwith the tender; but if the Accepting officer accepts the tender/bid, the contractor will be required to lodge with the Controller of Defence Accounts concerned the amount of individual security deposit' within thirty days of the receipt by him of notification of acceptance of his tender/bid, failing which this sum will be recovered from 1st RAR payment or from the first final bill. In the case of term/running contracts, remaining sum shall be recovered from subsequent bills) of the contractor.
 - 6.4 A contractor who has executed standing security Bond but not corresponding to the appropriate class as mentioned above, shall lodge with the Accepting Officer, Additional Security Deposit as notified by the Accepting Officer within thirty days of the receipt of his notification of acceptance of his tender/bid, failing which this sum will be recovered from the first RAR payment or from the first final bill. In the case of term/running contracts, remaining sum shall be recovered from subsequent bills) of the contractor. However, in case where any payment is made to the contractor within thirty days of the receipt by him of notification of acceptance of tender/bid, the amount of additional security deposit shall be recovered from such payment.

6.5 The GE will return the Earnest Money wherever applicable to all unsuccessful tenderers/bidders by endorsing an authority on the deposit-at-call receipt for its refund, on production by the tenderer bidder a certificate of the Accepting Officer that a bonafide tender/bid was received and all documents were returned.

6.6 The GE will either return the Earnest Money to the successful tenderer/bidder by endorsing an authority on the deposit-at-call Receipt for its refund on receipt of an appropriate amount of Security Deposit or will retain the same in part or full on account of security deposit if such a transaction is feasible.

6.7 Copies of the drawings and other document pertaining to the work signed for the purpose of identification by the Accepting Officer or his accredited representative, sample of materials and stores to be supplied by the contractor will also be available for inspection by the tenderer/bidder at the office of Accepting Officer and concerned GE during working hours.

7. The tenderers/bidders are advised to visit the site of work by making prior appointment with GE who is also the Executing Agency of the work (see appendix 'A'). The tenderers/bidders are deemed to have full knowledge of all relevant documents, samples, site etc., whether they have inspected them or not.

8. Any tender/bid which proposes any alteration to any of the conditions laid down or which proposes any other condition or prescription whatsoever, is liable to be rejected.

9. The uploading of bid implies that bidder has read this notice and the Conditions of Contract and has made himself aware of the scope and specification of work to be done and of the conditions and rates at which stores, tools and plants etc will be issued to him and local conditions and other factors having bearing on the execution of the work.

10. Tenderers/bidders must be in possession of a copy of the MES Standard Schedule of Rates (see appendix 'A') including amendments and errata thereto.

11. Invitation for e- tender does not constitute any guarantee for validation of 'T' bid and subsequent opening of finance bid of any applicant/bidder, even of enlisted contractors of appropriate class, merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the 'T' bid and not open the finance bid of any applicant/bidder. 'T' bid validation shall be decided by the Accepting Officer based on, inter alia, capability of the firm as per criteria given in Appx 'A' to this NIT. The applicant contractor/bidder will be informed regarding non.. validation of his 'T' bid assigning reasons thereof through the procurements website. The applicant contractor/bidder if he so desires may appeal to the next higher Engineer authority viz CWE (A) Mumbai on email id_amb3_mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Finance Bid. The decision of the next higher engineer authority (NHEA) shall be final & binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

12. The Accepting Officer reserves the right to accept a tender submitted by a Public Undertaking, giving a price preference over other Tender(s)/bids which may be lower, as are admissible under the Government Policy. No claim for any compensation or otherwise shall be admissible from such tenderer/bidder whose tender/bid is rejected.

13. Accepting Officer does not bind himself to accept the lowest or any tender/bid or to give any reason for not doing so.

14. This **Notice Inviting Tender (NIT)** including Appendix 'A' shall form part of the contract.

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

1	Name of Work	PROVN OF FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD															
2	Estimated cost of work	Rs. 43,45,000.00															
3	Period of Completion	180 days															
4	Cost of Tender documents	Rs. 500/- in the shape of DD/Bankers cheque from any schedule Bank in favour of GE Dehu Road and payable at Dehu Road. (Note:- In case of retendering, the contractor who had quoted in the previous call is not required to submit the cost of tender)															
5	Website/portal address	www.defproc.gov.in															
6	Type of contract	The tender shall be based drawing and specification on IAFW 1779A and GCC (IAFW-2249) with Schedule 'A' (list of Item work) to be priced by contractor. The contractor is required to quote rates against items of Schedule 'A'.															
7	Information & Details																
	(a) Bid submission start date	Refer critical dates shown here-in-after.															
	(b) Last date of bid submission																
	(c) Date of bid opening																
8	Eligibility Criteria																
	(a) For MES enlisted contractors	Contractor shall be enlisted with MES in Class ' D ' and above and category b (i) subject to satisfactory remarks wrt performance in respect of works in hand as reflected in Work Load Return (WLR) or any other report circulated by competent engineer authority.															
	(b) For contractors not enlisted with MES	(i) Contractor not enlisted with MES should meet the enlistment criteria of ' D ' class & b (i) category contractor with regard to satisfactorily completion of requisite value works with Central / State Government/ Central / State PSU's/AWHO/AFNHB/ CGEWHO/DGMAP/, annual turnover, bank Solvency, working capital, immovable property/fixed assets, T&P, Engineering establishment, no recovery outstanding in any Govt Department, Police verification/Passport etc. Enlistment criteria may be seen in Para 1.4 and 1.5 of section 1 of Part I of MES Manual on Contracts – 2020 as available in all MES formations as well as MES website (www.mes.gov.in)															
		(ii) Not carrying adverse remarks in Work Load Report (WLR) or any other similar report circulated by any competent authority, if already working in MES.															
		(iii) Not Suspended/ debarred/ blacklisted/ (either permanently or temporarily) from participating in any bid or for business dealings by any Central/ State Government Department or any Central/ State Government or any Local Body as on the Bid submission end date.															
		(iv) Details of works completed and under progress in MES be submitted in the following format :-															
		<table border="1"> <thead> <tr> <th>Srl No.</th> <th>CA No. & Name of work</th> <th>Value of CA</th> <th>Date of commencement</th> <th>Date of completion</th> <th>Extended Date of completion</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				Srl No.	CA No. & Name of work	Value of CA	Date of commencement	Date of completion	Extended Date of completion						
Srl No.	CA No. & Name of work	Value of CA	Date of commencement	Date of completion	Extended Date of completion												
		(v) Un-enlisted Contractor who have secured two works in MES should get themselves registered in the appropriate designated Class with any Registering Authority, else the firm will not be eligible for participation in the tender unless until the firm is enlisted with the MES															
9.	Tender issuing, Executing and Accepting Officer	Garrison Engineer Dehu Road, Military Engineer Services, Dehu Road, Pune - 412101 Phone No :- 022-27673300 Email ID- dehuengrs@gmail.com															
10	Executing Agency	Garrison Engineer Dehu Road, Pune															
11	Earnest Money Deposit	Rs. 86,900.00 in the form of Demand Draft from any Scheduled Bank in favour of GE Dehu Road, Pune.															

Notes:-

1. After opening of Cover-1, if the number of MES enlisted contractors of eligible class as well as un-enlisted contractors, If any, fulfilling the other eligibility criteria given in NIT are less than 7 (seven), applications in respect of contractors one class or two classes (in case of remote and difficult areas to be decided as per list circulated by CE Command/ ADG/) below the eligible class shall also be considered subject to fulfillment of other eligibility criteria given in the NIT. Therefore MES contractors one class below (two classes below in case of remote and difficult areas) may also bid for this tender. However contractors of one/ two classes below the eligible class shall not be considered in case their present residual work in hand is more than **FIVE TIMES** their present tendering limit. Such bidders shall uploaded in their Cover-1 bid details of works in hand showing names of work, names of Accepting Officers. Contract amounts, dates of

commencement and completion (stipulated) and progress as on bid submission date. These details shall be verified by the Tender Issuing authority from concerned formations in case bids of such contractors are considered for evaluation.

2. In case after opening of Cover-1, the number of MES enlisted contractors of eligible class well as un-enlisted contractors, if any, fulfilling the other eligibility criteria given in NIT are 7 (Seven) or more, applications of only those one class below the eligible class bidders shall be considered, who have previously completed similar works satisfactorily and are meeting the criteria of up gradation in respect of past experience of completed works (individual work experience and/ or average annual turn over as applicable) and financial soundness (solvency/ financial soundness and working capital) as per details given in Manual Contracts. Therefore such contractors shall upload the requisite information/ documents in the Cover-1.

3. Un enlisted contractor shall be considered provided he meets the criteria. Foreign firms shall not be eligible for this tender. However Indian firms having foreign national/ Indian nationals staying abroad/ Indian national having taken foreign citizenship, as director (s) shall be considered subject to security clearance from the concerned authorities.

4. Contractors enlisted with MES will upload following documents in Cover 1 for checking eligibility.

- (a) Application for tender on Firm's letterhead.
- (b) Enlistment letter issued by the Registering Authority duly renewed for the cycle period in vogue.
- (c) Scanned copy of DD/Bankers Cheque toward cost of tender and EMD instrument in case SSD bond is not signed at the time of registration.
- (d) Certificates as mentioned in para 9 of instructions for filling and submission of tender.
- (e) Proof of Possession of Provident Fund Code Number.
- (f) Proof of possession of GST Registration Number.
- (g) Any other document required as described in this Appendix.

5. Contractors not enlisted with MES will be required to upload following documents in Cover 1 for checking eligibility.

- (a) Application for tender on Firm's letterhead.
- (b) Scanned copy of DD/ Bankers cheque toward cost of tender and Earnest Money Deposit (EMD) instrument.
- (c) Copy of Police verification Report/ Police Clearance Certificate/ Character Certificate from the Police Authority of the area where the registered office of the firm is located/notarized copy of valid passport of Proprietor /each partner/each Director.
- (d) All documents required for enlistment in MES for the class mentioned in Para 8 (b) above as per Para 1.5 of section 1 of MES Manual on Contracts 2020.
- (e) Details of works being executed in MES, if any.
- (f) Certificates as mentioned in para 9 of instructions for filling and submission of tender
- (g) Proof of Possession of Provident Fund Code Number.
- (h) Proof of possession of GST Registration Number.
- (j) Any other document required as described in this Appendix.

6. Tenders not accompanied by scanned copies of requisite DD/Bankers Cheque towards cost of tender and earnest money (as applicable) in Cover 1 shall not be considered for validation of 'T' bid and their Financial Bids will not be opened.

7. Contractors should ensure that their original physical DDs and Earnest Money Deposit (EMD) instruments (as applicable) reach the office of Accepting Officer within **05** days of bid submission end date, failing which following action shall be taken:-

(a) In case of tenders from an enlisted contractor of MES where scanned copies of requisite DD/Bankers Cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will be opened. However non-submission of physical copies of cost of tender shall be considered as willful negligence of the tenderer with ulterior motives and such tenderer shall be banned from bidding for a period of six months commencing from the date of opening of Financial Bid (Cover 2).

(b) In case of tenders from unenlisted contractor, where scanned copies of requisite DD/Bankers cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will not be opened. Name of such contractors along with complete address shall be circulated for not opening of their bids for a period of six months commencing from the date of opening of Financial bid (Cover 2).

(c) In case of tenders from enlisted and unenlisted contractors. where scanned copies of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover I but the same are not received in physical form within stipulated period, such tenders shall not qualify for opening of financial bid (Cover 2).

8. Contractor will not be allowed to execute the work by subletting or through power of attorney to a third party/ another firm on his behalf. However a contractor can execute the work through power of attorney to sons/daughters/spouse of proprietor/ Partner/ Director and firms own employees, director, pro-

ject manager **provided they are not having a separate enlisted firm in MES in their name as proprietor/ Partner/ Director.**

9. After opening of Cover I and during its technical evaluation. In case any deficiency is noticed in the documents required to be uploaded by the tenderer as per NIT. a communication in the form of e-mail/SMS/Speed post etc. shall be sent to the contractor to rectify the deficiency within period of seven days from the date of communication failing which their financial bid (Cover 2) shall not be opened and contractor shall not have any claim on the same.

10. Invitation for e-tender does not constitute any guarantee for validation of Technical Bid and subsequent opening of financial bid of any applicant/bidder merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Technical bid and not to open the financial bid of any applicant/bidder. Technical bid validation shall be decided by the Accepting Officer based on eligibility of the firm as per criteria given in this Appendix. Tenderer/bidder will be informed regarding non-validation of his Technical Bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires. may appeal to the next higher Engineer Authority (NHEA) viz HQ CWE Army Mumbai on email id amumb3-mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Cover 2. NHEA shall decide the matter within a period of seven working days from the date of receipt of appeal. The decision of the NHEA shall be final and binding. The tenderer/ bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

11. In case an unenlisted contractor is already executing works in MES, he shall not be considered eligible for the subject tender if the total value of such works is more than twice the tendering limit of the MES Class of contractor for which it is eligible. For this purpose, details of the works being executed by such contractor shall be uploaded in the Cover-1 of the bid and shall be checked/verified by the Accepting Officer.

12. In case of BOQ is revised through the corrigendum and the bidder has failed to quote on revised BOQ (ie he has quoted on pre revised BOQ). Such bid shall be treated as willful negligence by the bidder and his quotation shall be considered non bonafide. In such case the lowest tender shall be determined from amongst the valid/bonafide bids only. Accepting Officer may decide whether to re-tender or consider the lowest bonafide tender for acceptance.

13. Revoking the offer or revising the rates upward or offering voluntary reduction by the lowest tenderer after opening of Cover-2 shall be considered as a willful default. For this default a penalty of an amount equal to Earnest Money shall be levied. In case of an un enlisted tenderer. Earnest Money deposited by him shall be forfeited. In case of MES enlisted tenderer having deposited the Standing Security Bond, an amount equal to the earnest money stipulated In the NIT. shall be notified to the tenderer for depositing through MRO and consideration of such tenderer in tender evaluation for future works shall be remain suspended till the aforementioned amount is deposited in the Government Treasury. No other disciplinary/ administrative action shall be taken against such tenderers. In such a situation, the next lowest offer shall not be considered for acceptance. Instead, re-tendering shall be resorted to in a transparent and fair manner and the defaulting tenderer and his related firm if any, shall not be eligible for this tender in second call or subsequent calls.

13A Irrespective of whatever is mentioned in condition 19.3 of IAFW 2249 with regard to suspension of tenders account of non-submission of Performance Security, issue of tenders to such tenderers shall remain suspended for a period of six months from the date of cancellation of contract under condition 19.3 of IAFW 2249 in case of unenlisted Contractors. In case of MES enlisted contractor, issue of tenders shall remain suspended till deposit of EMD or six months from date of cancellation whichever is later.

14. Tender to related firms shall not be issued simultaneously. Firms shall be termed as related if Proprietor/ one or more Partners/ Directors are common. Decision of Accepting Officer on issue/ deny the tender to any one of the related firms shall be final and binding.

CRITICAL DATES & TIME

Publishing of tender	19.05.2026
Document Download/Sale Start	19.05.2026
Clarification Start	NA
Online Bid Submission Start	26.05.2026
Document Download/Sale End	02.06.2026
Bid Submission End	02.06.2026
Clarification End	NA
Bid Opening (Tech Bid/Cover-1)	03.06.2026

Signature of contractor

Case No: 8094/19/E8

Military Engineer Services
Garrison Engineer Dehu Road
Pune - 412101

Phone No :- 022-27673300

(Hridayakumar KV)
Maj
Accepting Officer

Dated : 19 May 2026

Email ID- dehuengrs@gmail.com**Distribution :-**

1	Chief Engineer, Southern Command, Pune-01	13	GE (P) FY Kirkee, Pune-03
2	Chief Engineer, Pune Zone, Pune-01	14	GE (I) R & D Pashan
3	CWE (A) Pune-01	15	GE (North), Pune- 01
4	CWE (A) Mumbai-05	16	GE Khadakwasla, Pune-23
5	CWE (AF) Lohogaon, Pune-32	17	GE (AF) Lohogaon, Pune-32
6	CWE Kirkee, Pune-03	18	GE (South), Pune-40
7	GE (I) R & D Girinagar, Pune-25	19	GE (CME) Kirkee, Pune-31
8	CESC, Builder Association, Pune-01	20	AGE B/R (East), Dehu Road
9	MES Builders of India, Gen Bhagat Marg, Pune-40,	21	AGE B/R (West), Dehu Road
10	CIDC, 801 (8 TH FLOOR) Hemkunt Chambers, 89 Nehru Place, New Delhi-110019	22	AGE E/M, Dehu Road
11	Association of MES Contractors (Regd), 111/1/4 Gopi Nath Bazar, Delhi	23	BSO Dehu Road
12	GE (Central) Kirkee, Pune-03		

Para 1.4 of MES Manual on contracts – 2020

Criteria for Fresh Enlistment & Upgradation

(a) Criteria for Fresh Enlistment in various classes shall be as under:-

Class	Past Experience of completed Works in Last 5 years & Average Annual Turn Over (in Rs.)	Financial Soundness (in Rs.)
(1)	(2)	(3)
'SS'	(a) Two works costing not less than 12.00 crore each. or One work costing not less than 20 crore. and (b) Average annual turn over for two consecutive years shall not be less than 20 crore	(a) Solvent upto 8.00 crore or Financially sound for engagement upto 40.00 crore. (b) Working capital not less than 75.00 lakh.
'S'	(a) Two works costing not less than 7.50 crore each or One work costing not less than 12 crore. and (b) Average annual turn over for two consecutive years shall not be less than 12 crore.	(a) Solvent upto 4.00 crore or Financially sound for engagement upto 15.00 crore. (b) Working capital not less than 50.00 lakh.
'A'	(a) Two works costing not less than 4.00 crore each or One work costing not less than 6.00 crore. and (b) Average annual turn over for two consecutive years shall not be less than 6.00 crore.	(a) Solvent upto 2.00 crore or Financially sound for engagement upto 7.50 crore. (b) Working capital not less than 30.00 lakh.
'B'	(a) Two works costing not less than 1.50 crore each or One work costing not less than 2.50 crore. and (b) Average annual turn over for two consecutive years shall not be less than 300.00 lakh.	(a) Solvent upto 100.00 crore or Financially sound for engagement upto 3.00 crore. (b) Working capital not less than 12.00 lakh.
'C'	(a) Two works costing not less than 50.00 lakh each or One work costing not less than 80.00 lakh. and (b) Average annual turn over for two consecutive years shall not be less than 100.00 lakh.	(a) Solvent upto 40.00 lakh or Financially sound for engagement upto 100.00 lakh. (b) Working capital not less than 10.00 lakh.
'D'	(a) Two works costing not less than 25.00 lak each	(a) Solvent upto 20.00 lakh or

	<p>or</p> <p>One work costing not less than 40.00 lakh.</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall not be less than 50.00 lakh.</p>	<p>Financially sound for engagement upto 50.00 lakh.</p> <p>(b) Working capital not less than 7.50 lakh.</p>
'E'	<p>(a) Three works costing not less than Rs.7.50 lakh</p> <p>or</p> <p>Two work costing not less than Rs. 10.00 lakh each.</p> <p>or</p> <p>One work costing not less than Rs. 20.00 lakh</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall not be less than 25.00 lakh.</p>	<p>(a) Solvent upto 10.00 lakh</p> <p>or</p> <p>Financially sound for engagement upto 25.00 lakh.</p> <p>(b) Working capital Rs.5.00 lakh.</p>

(b) Criteria for Upgradation in various classes shall be as under:-

Class	Past Experience of completed Works in Last 5 years & Average Annual Turn Over (in Rs.)	Financial Soundness (in Rs.)	Limit of minimum reserves (See Note 5 above)
(1)	(2)	(3)	(4)
'SS'	<p>(a) Two works costing not less than 12.00 crore each.</p> <p>or</p> <p>One work costing not less than 20 crore.</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall not be less than 20 crore</p>	<p>(a) Solvent upto 8.00 crore</p> <p>or</p> <p>Financially sound for engagement upto 40.00 crore.</p> <p>(b) Working capital not less than 75.00 lakh.</p>	Rs. 120.00 lakh
'S'	<p>(a) Two works costing not less than 7.50 crore each</p> <p>or</p> <p>One work costing not less than 12 crore.</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall not be less than Rs.12 crore.</p>	<p>(a) Solvent upto Rs.4.00 crore</p> <p>or</p> <p>Financially sound for engagement upto Rs.15.00 crore.</p> <p>(b) Working capital not less than Rs.50.00 lakh.</p>	Rs. 80.00 lakh
'A'	<p>(a) Two works costing not less than 4.00 crore each</p> <p>or</p> <p>One work costing not less than Rs .6.00 crore.</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall not be less than Rs. 6.00 crore.</p>	<p>(a) Solvent upto Rs.2.00 crore</p> <p>or</p> <p>Financially sound for engagement upto Rs. 7.50 crore.</p> <p>(b) Working capital not less than Rs.30.00 lakh.</p>	Rs. 75.00 lakh
'B'	<p>(a) Two works costing not less than Rs. 1.50 crore each</p> <p>or</p> <p>One work costing not less than 2.50 crore.</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall not be less than 300.00 lakh.</p>	<p>(a) Solvent upto Rs.100.00 crore</p> <p>or</p> <p>Financially sound for engagement upto Rs.3.00 crore.</p> <p>(b) Working capital not less than 12.00 lakh.</p>	Rs. 60.00 lakh
'C'	<p>(a) Two works costing not less than 50.00 lakh each</p> <p>or</p> <p>One work costing not less than 80.00 lakh.</p> <p>and</p> <p>(b) Average annual turn over for two consecutive years shall</p>	<p>(a) Solvent upto Rs.40.00 lakh</p> <p>or</p> <p>Financially sound for engagement upto Rs.100.00 lakh.</p> <p>(b) Working capital not less</p>	Rs. 25.00 lakh

	not be less than 100.00 lakh.	than Rs. 10.00 lakh.	
'D'	(a) Two works costing not less than 25.00 lak each or One work costing not less than 40.00 lakh. and (b) Average annual turn over for two consecutive years shall not be less than 50.00 lakh.	(a) Solvent upto 20.00 lakh or Financially sound for engagement upto Rs. 50.00 lakh. (b) Working capital not less than Rs.7.50 lakh.	Rs. 12.50 lakh

NOTES :

1. Authority competent to enlist shall be called Registering Authority.
2. The categories for enlistment shall be decided on the basis of the nature of works executed by Contractor. Contractors who have experience of executing of Prefab/Pre-Engineered structures and fulfil other criteria, shall also be eligible for enlistment in category a(i). At the time of renewal, contractors already enlisted in Cat (a) (i) Building & Roads, shall be enlisted in Cat a(i) Building Works & (a) (v) Roads. In case E class contractors, Registering Authority shall issue suitable amendments to enlistment letters in respect of separate categories for buildings works i.e a(i) and roads i.e. a(v) without any application from contractor.
3. For enlistment/upgradation/renewal/reclassification etc, in category (b) Electrical Engineering Works (i) to (iii), a declaration/undertaking shall be obtained from the applicant contractor in affidavit from whereby the contractor shall undertake to either obtain valid Electrical Licence of required class in its name or engage an agency having valid Electrical Licence of required class through MoU (Memorandum of Understanding) for execution of all electrical works as well as works under category (c) [including its sub categories (i) to (vii)] and the category (d) (v) to the extent Rule 29 under Part III of Central Electrical Authority (Measures Relating to safety and Electric Supply) Regulations, 2010 is applicable either in full or part of the scope of work of contract awarded to him and that all such electrical works shall be executed by him through such agency only (either self or other agency) having valid Electrical Licence of required class from State/ Union Territory Authorities where works are to be executed.
4. Working capital with the Contractor shall be judged from balance sheet/bank's certificate as per Appendix 1.3 / bank statement for last 6 month/overdraft of cash credit facility from bank/fixed deposit receipts with banks.
5. The requirements of minimum reserves are applicable for enlistment related process of existing contractors i.e. Change in constitution/Renewal/Reclassification(Revision in Monetary Limit) etc, if they have contracts in hand not having Performance Security provisions, till their contracts are completed and their Final Bills do not become MINUS. For this, these contractors will submit affidavit on non-judicial stamp paper of appropriate value (minimum value Rs. 100) declaring that all their contracts without Performance Security provisions are completed and Final Bills are not MINUS. Immovable/movable property (minimum reserve) shall be exclusively in the name of Contractor and not in the name of family members/relatives/others. In case of Limited companies, immovable/movable property (considered for minimum reserve) shall be exclusively in the name of Company and should be reflected in the Balance Sheet of the Company.
6. "Last two consecutive years" shall mean immediate last two consecutive financial years reckoned from the date of application for upgradation. Two consecutive years for the purpose of fresh enlistment shall mean any of the two consecutive financial years in last Five Financial Years preceding the date of application for enlistment. For documents in support of works experience, TDS certificate for IT/Sales Tax/VAT/GST shall also be asked from applicant firms. All documents related to works experience and turnover (except Form 26 AS and portal generated GST return) shall be got independently verified from the client/issuing authority. Registering Authority may seek clarification from the Chartered Accountant in case of any doubt. Annual turnover to be considered for enlistment purpose shall mean the turnover from all businesses carried out by the applicant firm in relation to construction work related to categories of works for which the enlistment is being sought. It may be total turnover as shown in the audited balance sheet or part thereof. Necessary clarification shall be obtained from the Chartered Accountant whose audited balance sheet is submitted by the applicant firm in case considered necessary by the Registering Authority.
7. Upgradation of enlisted contractor shall be done gradually in stages. Before a contractor is considered for upgradation, he should have worked at least for two years in the present tendering limit and should meet the criteria laid down. Normally upgradation will be done only to one next higher class at a time. However, if performance of any particular contractor is of very high order and Registering Authority considers upgradation of such contractor by more than one class justified, the same shall be done only with prior approval of E-in-C's Branch. Following considerations shall be applied to ascertain whether the performance of contractor is of very high order or otherwise.
 - (a) Contractor has completed works, value of which is more than 1.25 times the requirement in which the upgradation is being considered.

(b) Average Annual Turnover of the contractor is more than 1.25 times the requirement in which the upgradation is being considered.

Example : For a contractor enlisted in class 'C' having tendering limit of 100 lakh, proposed to be upgraded to class 'A' having tendering limit of 7.50 crore, minimum value of works completed and turn over shall be as under :

- (i) Two works completed costing not less than 5.00 crore each (1.25 x 4.00)
Or
One work costing not less than 7.50 crore (1.25 x 6.00)
- (ii) Average annual turnover 7.5 crore (1.25 x 6.00)

(c) Average marks secured in Performance Reports (Stage-II) for works completed in last five years shall not less than 70%. Where report for any work is not available, it will be deemed to contain only 60% average marks.

8. Contractor of 'A' class and above only shall be eligible for enlistment in categories (a) (iii) Runways and Pavements and (a) (iv) Marine and Harbour Works subject to prior approval of E-in-C.

9. The criteria laid down above for enlistment/upgradation may be relaxed in the case of contractors whose performance has been found to be of a very high order. Such relaxation may, however be given only with the prior approval of E-in-C's Branch.

Para 1.5 of MES Manual on contracts 2020

Document required to be submitted by the contractor for enlistment in MES.

(a) Application for enrolment as contractor on IAFW-2190 (Revised 2020). Coloured Photographs affixed on application shall be self-attested.

(b) Affidavit for constitution of firm.

(c) List of works executed during last five years (As per Appendix 1.2) including copies of works orders/work allotment letters. Copies of completion certificates and Form 16 A/TDS certificate for GST (GSTR-7A).

(d) Annual turnover certificate duly supported with audited balance sheet. The turn over certificate must bear the UDIN (Unique Document Identification Number). The turn over certificate and audited balance sheet should be from same Chartered Accountant. In case balance sheets are not audited, Form 26 AS and or Annual GST return shall be forwarded in support of turnover.

(e) Audited balance sheet of last five years in case of Limited companies.

(f) Solvency certificate from scheduled bank as per specimen given in **Appendix-1.3**

(g) Working Capital certificate from scheduled bank as per specimen given in **Appendix-1.3**.

(h) Affidavit from contractor that there is no Government dues/ recovery outstanding against him. If there is any Government due/recovery outstanding from the contractor, enlistment/upgradation shall not be carried out.

(j) Affidavit from contractor giving brief details of arbitration /Litigation cases he was involved in. Registering Authority will critically examine such details and if contractor is considered habitual litigant his enlistment upgradation shall not be carried out. Contractor shall be deemed to be a habitual litigant if he moves the court more than once ignoring arbitration clause and court does not uphold his view.

(k) Two self-attested photographs of Proprietor/Partners/Directors of firm for verification of character and antecedents from the police authorities. Places where online police verification process is available, the contractor will carry out police verification of the Proprietor/Partners/Directors and submit the verification reports for cross verification by the Department. Alternatively, the contractor may submit a copy of valid passport issued by Govt of India.

(l) Copy of partnership deed in case of partnership firm.

(m) Memorandum and Articles of Association in case of Limited Companies.

(n) Copy of Registering Certificate of firm with Registrar of Companies/Register of Firms.

(o) Affidavit that no near relative(s) of the contractor or his/their employees/agents is/are working as Gazetted/Commissioned Officer(s) in MES/Corps of Engineers/Ministry of Defence. If the near relative(s) is/are working in such capacity in any formation upto zonal CE/CCE, he/ they shall furnish details, the contractor shall not be entitled to tender for the works in entire area of CE Zone/CCE.

(p) Affidavit that no near relative(s) of the contractor or his/their employees/agents is/are working as Augior Engineer (s) in MES/Corps of Engineers. If his near relative(s) is/are working in such capacity in

any formation upto CWE/GE(I) office, the contractor shall furnish details. The contractor shall not be entitled to tender for the works in entire area of that CWE/GE(I).

- (q) Copy of power of attorney/Resolution of the Board in favour of any Partner/Director of the firm.
- (r) Copy of immediate last Income Tax Return.
- (s) A separate sheet containing specimen signatures (signed in black ink) and affixed with photographs of Proprietor/Partners/Directors (to be used as Appendix B of enlistment letter).
- (t) Self-attested copy of PAN Card of Proprietor, Partners, Directors and the firm/ Company.
- (u) Self-attested copies of GST registration, EPFO registration and ESIC registration certificates.

Notes:-

- (i) All the documents submitted by the contractor shall be signed by Proprietor/all Partners/all Directors unless specifically authorized to a Partner/Director through POA or Resolution of the Board.
- (ii) Photocopies of documents shall be self-attested. Registering Authority shall ask production of original documents to verify the photocopies.
- (iii) All affidavits shall be given on non-judicial stamp paper of appropriate value duly signed by the contractor and attested by the Magistrate/Notary public.
- (iv) Registering Authority shall cross-verify the genuineness of financial documents at Para (d) & (e) above from issuing Chartered Accountant (CA) and documents at Para (f) & (g) from concerned Bank branch by referring in writing to them alongwith copy of above documents submitted by contractor. Registering Authority is also at liberty to verify the genuineness of all the documents from other reliable/authentic sources.
- (v) All documents related to work experience and turnover (except Form 26AS and portal-generated GST return) shall be got independently verified from the client/issuing Authority. For documents in support of works experience. TDS certificate for IT/Sales/Tax/VAT/GST shall also be asked from applicant firm. Registering Authorities may seek clarifications from the Chartered Accountant in case of any doubt.
- (vi) Documents mentioned at Para 1.5 (a) and 1.5 (s) shall not be applicable for the purpose of documents to be bidding purpose by unenlisted firms.

In lieu of IAFW-1779 (Revised)

(To be used in conjunction with General Conditions of Contracts IAFW-2249) (1989 Print)

MILITARY ENGINEER SERVICES

Tele 020-27673300

Garrison Engineer
Dehu Road - 412101

8094/19/E8

19 May 2026

**ITEM RATE TENDER AND CONTRACT FOR WORKS REQUIRED IN THE EXECUTION OF PROVN OF
FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING
IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD**

A tender/ bidder who is qualified as per the eligibility criteria mentioned in the tender documents and has interalia sound past record is hereby authorised to tender for the above work. **The e-tender/ e-bid (both cover-1 & and cover-2)** shall be submitted/ uploaded on the MES website portal (www.eprocuremes.gov.in) by 1800 hours on 02 Jun 2026.

THE PRESIDENT OF INDIA DOES NOT BIND HIMSELF TO ACCEPT THE LOWEST OR ANY TENDER.

APPOINTMENT: For Accepting officer AGE (Contracts)
(Signature of Officer issuing the documents)

SCHEDULE 'A' NOTE**NAME OF WORK : PROVN OF FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD****NOTES: -**

1. The tenderer shall fill his unit rate under column 6 in figures. The rate will automatically inserted under column 7 in words and the amount will automatically be extended under column 8. In case of any discrepancy, rate filled by the tenderer/ bidder in figure shall only prevail and all other entries (i.e. rates automatically inserted in words and amount automatically extended) shall accordingly be amended.
2. The total amount under column 7 is not firm but will be treated as 'Contract Sum' referred to the General Condition of the Contract IAFW-2249.
3. The unit rates quoted by the tenderer in column 6 shall be inclusive of all taxes and levies prevailed including sales tax on works contract imposed by any Govt. and nothing extra shall be paid on this account.
4. The unit rates quoted shall be deemed to include supply of all new materials and labour as required to complete the work except where specifically mentioned otherwise in the description in item. The rates quoted against each item of the schedule shall include of the full and entire completion of work all as specified.
5. The quantities shown under column 3 Schedule 'A' are provisional (refer condition 6 of IAFW-2249).
6. The contractor are advised to visit the site prior to submission of their tender and on submission of tender he shall be deemed to have satisfied himself as to the nature of site, local facilities access and all matters affecting the execution and completion of work. No extra charges consequent on misunderstanding or otherwise shall be allowed.
7. The entire work under this contract shall be completed within a period of **180 days** form to date of handing over of site as mentioned in work order No 1 issued by the Garrison Engineer.
8. **Defects liability Period** :- The defects liability period as per amended condition 46 IAFW-2249 shall commence from certified date of completion of entire work.
9. Item rates quoted by the tenderer shall be deemed to include for any minor details construction which are obviously and fairly intended, which may not have been included in documents but which are essential for the execution and entire completion of works. The decision the Accepting Officer whether or not any minor details of construction are obviously and in intended to be included in the rates quoted for the items shall be final and binding.
10. If there is any error pertaining to unit in Sch A the same shall be corrected as per latest engineering practice or as mentioned in SSR Part II for which contractor will have no claim to this effect.
10. All the flats/ buildings wherein the subject work is to be carried out are under occupation. Accordingly, the subject work is to be carried out under the said condition. Contractor shall take all precautionary measures to avoid inconvenience to the users. The site shall be left clean and tidy after day's work. No obstruction to passage shall be made by dumping materials.
11. The units of the building will be handed over to the contractor in a phased manner and a programmer of commencement and completion of the work in these quarter's / units shall be arrived before commencement of the work and shall be strictly followed. Contractor shall commence and complete the work as per the programmer and the decision of GE for grouping of the quarters / units of buildings shall be final and binding on the contractor.
2. (a) The rate quoted by the tenderer shall be inclusive of all types of taxes, levies including GST, labour welfare tax etc. As prevailing on the date of submission of tender.
 - (b) Certain taxes such as central excise duty, service tax, additional custom duty, state level value added tax, octroi and other levies which were applicable on interstate transportation of goods are subsumed by GST, thus special condition as per 10 for reimbursement/refund on variation in prices in taxes directly related to contract value of tender shall be deemed to be amended incorporating GST in lieu of taxes mentioned in the condition by subsumed by GST.
13. (Refer Condition 63 of IAFW-2249). No escalation shall be paid. The contractor shall quote considering hike in wages during the contract period.

SIGNATURE OF CONTRACTOR
Dated :

AGE Contract
For Accepting Officer

SCHEDULE OF CREDIT**NAME OF WORK : PROVN OF FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD**

1. The credit rate and value of old materials obtained from dismantling have been assessed by the department and have been indicated in column 5 & 6 respectively. The assessed credit rates of materials shall be taken as firm and the contractor shall not have any claim whatsoever against the Govt if the actual rate of dismantled materials turns out to be different from the rates inserted by the department.
2. Quantities of dismantled materials given in column 5 are approximate and not firm and have been given as a rough guide only. Actual quantities obtained from dismantling at site of work shall be measured in measurement book and abstracted for arriving at the actual credit value.
3. The contractor shall be allowed to remove the dismantled materials only after realization of the full credit value of the materials by the department. The decision of the GE in this connection shall be final and binding.
4. Gross value of work done shall be considered for calculating water recovery without deducting schedule of credit.

S.No.	Items	A/U	Qty	Rate	Amount
NIL					

SIGNATURE OF CONTRACTOR**Dated:****AGE Contract
For Accepting Officer**

SCHEDULE - 'B'**(ISSUE OF MATERIAL TO CONTRACTOR)**

(See condition 10 of IAFW-2249)

Sl No	Particulars	Unit	Rate at which material shall be issued to the Contractor	Place of issue of material	Remarks
1	2	3	4	5	6
NIL					

AGE Contract
For Accepting Officer

Signature of Contractor

SCHEDULE - 'C'**{LIST OF TOOLS AND PLANT (OTHER THAN TRANSPORT) WHICH WILL BE HIRED TO THE CONTRACTOR}**

(See conditions 15, 34 and 35 of IAFW 2249)

Sl no	Quantity	Particulars	Details of MES crew supplied	Hire charges per unit per working day	Standby charges per unit per off day	Place of issue (by name)	Remarks
1	2	3	4	5	6	7	8
----- Nil -----							

AGE Contract
For Accepting Officer

Signature of Contractor

SCHEDULE - 'D'**(TRANSPORT TO BE HIRED TO THE CONTRACTOR)**

(See conditions 16 and 35 of IAFW 2249)

Sl no	Quantity	Particulars	Rate per unit per working day	Place of issue (by name)	Remarks
1	2	3	4	7	8
NIL					

AGE Contract
For Accepting Officer

Signature of Contractor

T E N D E R

To,

The President of India,

Having examined and perused the following documents:-

1. Specifications signed by the Garrison Engineer Dehu Road
2. Particular specifications and list of drawings attached.
3. Schedule 'A', 'B', 'C', 'D' attached hereto.
4. MES Standard Schedule of Rates-2009 (Part-I specifications) and Standard Schedule of Rates 2020 Part-II (Rates) (hereinafter and in IAFW-2249 referred to as the MES schedule) together with errata/amendments as under:-

SSR-2009 (Part-I) : Errata: Nil & Amendment: 01 to 03

SSR-2020 (Part-II) : Errata: Nil & Amendment: 1 to 122 including Section 30

5. General conditions of contract IAFW-2249 (1989 Print) together with Errata Nos 01 to 20 and Amendments Nos 01 to 49 and schedule of Minimum wages.
6. **WATER:** Refer Condition 31 of IAFW-2249 (General Conditions of Contracts 1989 Print. Water will be supplied by the MES and will be recovered at the rate of Rs. 3.75 per ` 1000.00 worth of work done priced at contract rates.

7. Should this tender be accepted I / We agree:-

a) That a sum of **Rs. 86,900.00 (Rupees Eighty Six Thousand Nine Hundred only)** forwarded as Earnest Money shall either be retained on account of Security Deposit or be refunded by the Government on receipt of an appropriate amount of Security Deposit within the time specified in Condition 22 of IAFW-2249.

b) To execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as detailed in General Summary hereinafter and to carry out such deviations as may be ordered vide Condition 7 of IAFW-2249 upto a maximum of **10% (Ten PERCENT)** and further agree to refer all disputes as required by Condition 70 and 71 to the sole conciliator of a serving officer having degree in Engineering or equivalent or having passed final/direct final examination of sub division II of Institution of Surveyors (India) recognized by Govt of India, to be appointed by Chief Engineer Pune Zone Pune-01 or in his absence the officer officiating as Chief Engineer Pune Zone Pune-01.

(c) Further agree to refer all disputes as required by Conditions 70 & 71 to the sole arbitration of a serving officer having degree in Engineering or equivalent or having passed final/direct final examination of sub division II of Institution of Surveyors (India) recognized by Govt of India, to be appointed by Chief Engineer Pune Zone Pune-01 or in his absence the officer officiating as Chief Engineer Pune Zone Pune-01, whose decision shall be final, conclusive and binding.

***TO BE DELETED WHERE NOT APPLICABLE.

Signature of Contractor

**AGE Contract
For Accepting Officer**

In lieu of IAFW-1779(A) (Revised 1947)

Signature _____ in the capacity of _____ duly authorized to sign the tender for and on behalf of M/s _____
(BLOCK CAPITALS)

Name of the Signatory: _____
(IN BLOCK CAPITALS)

Date: _____

Postal Address : _____

Witness _____

Telegraphic Address: _____

Address _____

Telephone: _____

ACCEPTANCE

_____ alterations have been made in these documents and as evidence that these alterations were made before the execution of the Contract Agreement these have been initialed by the contractor and **Shri Anupam Kumar, AEE (QS&C), AGE (Contracts)**. The said officer is hereby authorized to sign and initial on my behalf the documents forming part of this contract.

The above tender was accepted by me on behalf of the President of India for the contract sum of **Rs _____**)
on the day of ____ Mar 2026.

Signature _____ dated this _____ day of _____ 2026.

Appointment:

**GARRISON ENGINEER
DEHU ROAD 412 101
ACCEPTING OFFICER
(FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)**

**GENERAL CONDITIONS OF CONTRACTS - IAFW 2249 (1989 PRINT) FOR
ITEM RATE CONTRACTS- IAFW 1779 A (REVISED 1955)**

- **LUMP SUM CONTRACTS- (IAFW-2159)**
- **TERM CONTRACTS & ARTIFICERS**
- **WORKS(IAFW-1821)**
- **MEASUREMENT CONTRACTS**
- **(IAFW-1779 & 1779-A)**

A copy of the GENERAL CONDITIONS OF CONTRACTS - IAFW 2249 (1989 Print) with errata 1 to 20 and amendment Nos 1 to 49 has been supplied to me/us and is in my/our possession, I/We have read and understood the provisions contained in the aforesaid GENERAL CONDITIONS OF CONTRACTS before submission of this tender and I/We shall abide by the terms and conditions thereof, as modified if any, elsewhere in these tender documents.

It is hereby further agreed and declared by me/us, that the GENERAL CONDITIONS OF CONTRACTS, IAFW-2249 (1989 Print) including condition 70 & 71 thereof pertaining to settlement of disputes by arbitration, with errata 1 to 20 and amendment Nos. 1 to 49 form part of these tender documents.

NOTE: In case of difference in interpretation due to wordings of English and Hindi versions of the General Conditions of Contracts (IAFW-2249) (1989 Print), the English version will prevail.

Signature of Contractor
Dated:

AGE Contract
For Accepting Officer

SCHEDULE OF MINIMUM FAIR WAGES

1. It is hereby agreed by me/us that the schedule of Minimum Fair Wages' as published vide Government Of India Ministry of Labour order No 1 (2) 92 IS-II dated 10 Mar 1992 applicable to Area 'C' containing 08 (Eight) pages shall form Part of these tender documents state Govt / Union territory Notification forms part of these tender documents.

2. It is also agreed by me/us that although latest notification, as available with the Accepting Officer, has been formed part of the contract, in case the Government has further revised the wages, the latest revised wages of labours shall only be applicable.

3. My/our signature (s) hereunder is deemed to my/our having read and understood the provisions contained therein and having signed the aforesaid Schedule of Minimum Wages forming part of this tender and in agreement of provisions of para 2 above * I/we agree that *I/we shall abide by the same and that aforesaid documents form part of the tender.

4. **The latest revised wages of labour as fixed by State Govt/Govt of India/Union Territory as applicable to the work whichever is higher will only be applicable in the contract.**

NOTE: Schedule of Minimum fair wages is available for reference in the office of the Garrison Engineer Dehu Road, Pune-412101.

Signature of Contractor
Dated:

AGE Contract
For Accepting Officer

SPECIAL CONDITION**1. GENERAL**

1.1. The following Special conditions shall be read in conjunction with the General Conditions of Contracts IAFW-2249 including errata / amendments there to. If any provision in these special conditions is at variance with the aforesaid documents, these special conditions shall be deemed to take precedence there over.

1.2. The work under this Contract shall be carried out in accordance with Schedule 'A', Particular Specifications, drawings and other provisions made in MES Schedule.

1.3. The term 'General Specifications' referred to hereinbefore/ hereinafter as well as referred to in IAFW- 2249. (General Conditions of Contracts), shall mean the Specifications contained in MES Schedule.

1.4. General rules, specifications, special conditions and all preambles in MES Schedule shall be deemed to apply to the works under this Contract unless specified otherwise in these tender documents, in which case the provisions in these tender documents shall be deemed to take precedence over the provisions made in MES Schedule.

2. SECURITY OF CLASSIFIED DOCUMENTS: The Contractors special attention is drawn to Condition 2-A and 3 of IAFW-2249 (General Conditions of Contracts). The contractor shall not communicate any classified information regarding the works either to subcontractor or others, without the prior approval of the Engineer-in-Charge. The contractor shall also not make copies of the design/drawings and other documents furnished to him in respect of the work and he shall return all documents on completion of work or earlier on determination of the contract. The contractor shall along with the final bill attach a receipt from the Engineer-in-charge in respect of his having returned the classified documents as per Condition 3 of IAFW-2249 (General Conditions of Contracts).

3. PERIOD FOR KEEPING THE TENDER OPEN: The tender shall remain open for acceptance for a period of 60 (sixty) days from the date specified for its submission/ uploading on the MES website portal (www.eprocuremes.gov.in).

4. TIME AND PROGRESS CHART USING CRITICAL PATH METHOD

4.1. The time and progress chart to be prepared as per Condition 11 of IAFW-2249 (General Condition of Contracts) shall consist of detailed net work analysis and a time schedule. The critical path network will be drawn jointly by the GE and contractor soon after acceptance of tender. The time scheduling of the activities will be done by the contractor so as to finish the work within the stipulated time. On completion of the time schedule a firm calendar date schedule will be prepared and submitted by the contractor to the GE who will approve it after due scrutiny. The schedule will be submitted in four copies within two weeks from date of handing over the site.

4.2. During the currency of the work the contractor is expected to adhere to the time schedule and this adherence will be a part of the contractor's performance under the contract. During the execution of the work the contractor is expected to participate in the reviews and updating of the network undertaken by the GE. These reviews may be undertaken at the discretion of the GE either as a periodical appraisal measure or when the quantum of work ordered on the contractor is substantially changed through deviation orders or amendments. Any revision of the schedule as a result of the review will be submitted by the contractor to the GE within a week who will approve it after due scrutiny. The contractor shall adhere to the revised schedule thereafter. In case of contractor disagreeing with the revised schedule, the same will be referred to the Accepting Officer whose decision shall be final, conclusive and binding. GE's approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time. Extension of time shall be considered and decided by the appropriate authority mentioned in Condition 11 of IAFW-2249 and separately regulated.

4.3. The contractor shall mobilise and employ sufficient resources to achieve the detailed schedule within the broad framework of the accepted method of working and safety.

4.4. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the department.

5. ELECTRIC SUPPLY: In case the contractor desires to buy electricity from the MES, he shall be charged for the electric energy consumed at the following rates:

- (i) At Rs 23.53 per unit for lighting purpose
- (ii) At Rs 23.53 per unit for power purpose

SPECIAL CONDITION

Electric supply required for works upto maximum of 10 KVA shall be made available by the MES at the incoming terminal of the main switch on the site plan/ decided by the GE. The

main switch and KWH meters to register to electric energy supplied shall be provided and installed by the MES. The contractor shall provide all necessary cables, fittings, etc. from the main switch in order to ensure a proper and suitable supply of electricity for the execution of work.

The MES does not guarantee for continuity of supply and no compensation what so ever shall be allowed for supply becoming intermittent or for breakdown in the system.

GE or his representative shall be free to inspect all the power consuming devices or any electric line provided by the contractor. Any device or electric line provided by the contractor, which is not to the satisfaction of the GE shall be discontinued from the supply if so desired by him.

6. FACILITIES TO CONTRACTORS:

6.1. QUARRIES ON DEFENCE LAND: Reference Condition 14 of IAFW-2249. No quarries on defence land are available.

6.2. SPECIAL CONDITION FOR ALLOTMENT OF LAND FOR STORAGE OF MATERIALS (INCLUDING TEMPORARY SHEDS): Reference condition 24 of IAFW-2249. The contractor shall be permitted to store his materials including erecting temporary sheds therefore at the areas of land marked on the site plan/ as decided by the GE and he shall pay a licence fee of Rs 1/- per year or part thereof in respect of each and every separate area of land allotted to him”.

6.3. SPECIAL CONDITION FOR ALLOTMENT OF LAND FOR ACCOMMODATION OF LABOUR, CANTEEN, FABRICATING WORKSHOP ETC.: Reference condition 24 of IAFW-2249. The contractor shall be permitted to erect his labour camp, temporary workshops, and the like at the area of land marked for this purpose on the site plan/ as decided by the GE and he shall pay a licence fee Rs 1/- per year of part thereof in respect of each and every separate area of land allotted to him.

7. FEMALE LABOUR: If the contractor desires to employ female labour on works be carried out inside the area of a Factory, Depot, Park etc, and a female searcher is not borne on the authorized strength of the Factory, Depot, Park etc, at the time of submission of the tender, he shall be deemed to have allowed in his tender for pay and allowances etc. for a Female Searcher (Class IV servant) calculated for the period female labour is employed by inside the area. If more than one contractor employs female labour during any month and female searcher(s) has/ have to be employed in addition to the authorised strength of Factory, Depot, Park etc, the salary and allowances paid to the additional female searcher(s) shall be distributed on an equitable basis between the contractors employing female labour taking into consideration the value and period of completion of their contracts. The GE's decision in regard to the amount recoverable on this account from contractor shall be final and binding.

8. WORKS INSIDE MILITARY FARMS: The contractor will not make use of bullock/ animal transport for the transport of building materials, etc. and shall employ solely mechanical transport for this purpose.

9. CONDITION 64 OF IAFW-2249-ADVANCE ON ACCOUNT: This clause is applicable if the contract sum is more than ` 50 lakhs.

9.1. Add the following in continuation of Para 8: -

“provided further, the contractor may be paid advance on account to the full value of the under mentioned materials only, brought on the site on his furnishing guarantee bond(s) from a scheduled bank for the amount of the retention money which should otherwise be recoverable from him under contract: -

- (a) Factory made paneled shutter
- (b) Steel windows/ ventilators
- (c) PVC soil/waste/ vent pipes, nahani traps/ gully traps
- (d) Builders hardware (iron mongery)
- (e) Cement tiles, terrazzo tiles, Shahabad stone tiles, Kota stone tiles, granitestone, marble stone, non skid ceramic tile and other floor tiles
- (f) Water supply pipes and fittings/fixtures
- (g) Electric tools/wire/fittings/fixtures
- (h) Pressed steel door frame
- (i) Sanitary fittings
- (j) Steel
- (k) Any other nonperishable materials as decided by GE.

SPECIAL CONDITION

9.2 The bank guarantee bond(s) shall be executed for a period and on a form as directed by the Accepting Officer. The contractor shall further arrange to extend the period of guarantee

9.2. bond(s) if and when necessary, as directed by the Accepting Officer or shall furnish fresh guarantee bond(s) of similar value in lieu.

10. RE-IMBURSEMENT /REFUND ON VARIATION IN TAXES DIRECTLY RELATED TO CONTRACT.

10.1. The rates quoted by the contractor shall be deemed to be inclusive of all taxes (including GST, labour welfare cess/tax etc) duties, royalties, octroi & other levies payable under the respective statutes. No reimbursement/refund for variation in rates of taxes, duties, royalties, octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, royalties, octroi & other levies shall be made except as provided in sub Para here-in-below.

10.1.1. The taxes which are levied by Govt at certain percentage rates of contract sum/amount shall be termed as "taxes directly related to contract value" such as GST, labour welfare cess/tax and like but excluding income tax. The tendered rates shall be deemed to be inclusive of all "taxes directly related to Contract value" with existing percentage rates as prevailing on last due date of receipt of tenders. Any increase in percentage rates of "taxes directly related to contract value" with reference to prevailing rates on last due date of tenders shall be reimbursed to the contractor and any decrease in percentage rates of "taxes directly related to Contract value" with reference to prevailing rates on last due date for receipt of tenders shall be refunded by the contractor to the Govt/deducted by the Govt from any payments due to the contractor. Similarly imposition of any new "taxes directly related to Contract value" after the last due date for receipt of tenders shall be reimbursed to the contractor and abolition of any "taxes directly related to contract value" prevailing on last due date for submission/ uploading of tenders shall be refunded by the contractor to the Govt/deducted by the Govt from the payments due to the contractor.

10.1.2. The contractor shall, within a reasonable time of his becoming aware of variation in percentage rates and/or imposition of any further "taxes directly related to contract value", give written notice thereof to the GE stating that the same is given pursuant to this special condition, together with all information relating thereto which he may be in a position to supply. The contractors shall also submit the other documentary proof/information as the GE may require.

10.1.3. The contractor shall, for the purpose of this condition keep such books of account and other documents as are necessary and shall allow inspection of the same by a duly authorized representative of Govt, and shall further, at the request of the GE furnish, verified in such a manner as the GE may require, any documents so kept and such other information as the GE may require.

10.1.4. Reimbursement for increase in percentage rates/imposition of "taxes directly related to contract value" shall be made only if the contractor necessarily & properly pays additional "taxes directly related to contract value" to the Govt, without getting the same adjusted against any other tax liability or without getting the same refunded from the concerned Govt Authority and submits documentary proof for the same as the GE may require.

11. EMPLOYMENT OF PERSONNEL

11.1. The contractor shall employ only Indian nationals as his representative, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no person of doubtful antecedent and nationality is in any way, associated with the work. If for the reasons of technical collaboration or other considerations the employment of foreign national (s) is unavoidable, the contractor shall furnish full particulars to this effect to the Accepting Officer at the time of submission of the tender. As a proof that the contractor has employed only Indian nationals, he shall render a certificate to the GE within one month from the date of acceptance of the tender to this effect. In case the GE desires, the contractor will have the police verification done of personnel employed by him.

11.2. The GE shall have full powers and without giving any reason to order the contractor immediately to cease to employ, in connection with his contract, any agent, servant or employ to continue employment is, in his opinion, undesirable. The contractor shall not be allowed any compensation on this account.

11.3. The contractor's attention is also drawn to condition 25 of IAFW-2249 in this connection.

12. SUPPLY OF WATER

SPECIAL CONDITION

12.1. Water will be supplied by MES to the contractor at points shown on the site plans from piped system and shall be paid by the contractor @ ` 3.75 per ` 1000/- worth of work done priced at contract rates. The contractor shall arrange at his own expense for storage of water

and lifting, pumping, carrying or conveying water to the site of work as required. In case water points are not marked on the site plan, the water shall be supplied at one point as decided by the GE.

12.2. The supply of water may not be continuous. The contractor shall be deemed to have ascertained the hours of availability of water before submitting his tender. The MES do not guarantee the continuity of water supply and no compensation shall be allowed for intermittent or inadequate water supply and break down in the system. If the supply is not sufficient the contractor shall make his own arrangement to supplement the water supply at his own cost. For this purpose, the contractor shall be allowed to install hand pumps at the site of works at places as directed by the Engineer-in-Charge without any charges from the contractor on this account. The contractor shall remove the hand pumps as and when asked to do so by the Engineer-in-Charge or the GE and in any case on completion of the works. No compensation whatsoever shall be admissible to the contractor if the GE requires him to remove the pumps before completion of the work.

13. INSPECTION OF SITE BY THE TENDERER

13.1. The tenderer advised to contact the Garrison Engineer for the purpose of inspections of site (s) and examination of relevant document other than those sent herewith, who will extend reasonable facilities for the purpose. The tenderers shall also make themselves familiar with working conditions, accessibility of site (s), availability of materials and other cogent conditions, which may affect the entire completion of work under this contract.

13.2. The tenderer shall be deemed to have inspected the site (s) and made themselves familiar with the working conditions etc. whether they actually inspect the site(s) or not.

14. CONDITION FOR WORKING IN RESTRICTED AREA: all works under the contract lie in restricted area. The restrictions for entry to work site and conditions of working in restricted area shall be as under.

14.1. ENTRY /EXIT: The contractor, his agent(s), representatives, workmen etc and his materials, carts, truck or other means of transports etc will be allowed to enter through and leave from only such gate or gates and at such times as the GE or authorities in charge of the restricted area may at their sole discretion permit to be used. The contractor's authorized representative is required to be present at the place of entry and exit for purpose of identifying his workmen, carts, trucks etc to the personnel in charge of the security of the restricted area and shall stick to the specific route directed for them to follow.

14.2. IDENTITY OF WORKMEN

14.2.1. Every workman shall be in possession of an identity card. The identity card shall be issued after a thorough investigation of antecedents of the labourers by the contractor and attested by officer-in-charge of a unit concerned in accordance with the standing rules and regulations of the unit. The contractor shall be responsible for conduct of his workmen, agents or representatives.

14.2.2. IDENTITY CARD OR PASSES: The contractor, his agents and representatives are required individually to be in possession of an identity card or pass which will be examined by a security staff at the time of entry into or exit from the restricted area at any time or number of time inside restricted area.

14.3. SEARCH:Through search of all persons and transport shall be carried out at each gate and for as many times the gate is used for entry or exit and may also be carried out at any number of times at the site within the restricted area.

14.4. WORKING HOURS:The units controlling restricted area, usually work during six days in a week and remain closed on the seventh day. The working hours available to contractor's labour and staff are however, appreciably reduced because of the time of entry and exit during working hours. The exact working hours, working days and number of working days observed for the restricted area, where works are to be carried out, shall be deemed to have been ascertained by the contractor before submitting his tender. The tenderer attention is invited to the fact that number of working hours for a unit are prescribed in regulations and they cannot be increased by the Garrison Engineer of an author controlling the restricted area. The definition of "working days" as given under condition 1(t) of IAFW-2249 does not apply in case where the works area carried out in the restricted area.

SPECIAL CONDITION

14.5. WORKING ON HOLIDAYS:The contractor shall not carry out any work on gazetted holidays, weekly holidays and other non-working days except when he is specially authorised in writing to do so by the Garrison Engineer. The GE may at his sole discretion declare any day as holiday or non-working day without assigning any reason for such declaration.

14.6. FIRE PRECAUTIONS:

14.6.1. The contractor, his agents, representatives, workers etc. shall strictly observe the order pertaining to fire precautions prevailing within the restricted area.

14.6.2. Motor transport vehicles, if any allowed by authorities to enter the restricted area must be fitted with serviceable fire extinguishers.

14.7. FEMALE SEARCHER: If the contractor desires to employ female labour on works be carried out inside the area of a Factory, Depot, Park etc, and a female searcher is not borne on the authorized strength of the Factory, Depot, Park etc, at the time of submission of the tender, he shall be deemed to have allowed in his tender for pay and allowances etc. for a Female Searcher (Class IV servant) calculated for the period female labour is employed by inside the area. If more than one contractor employs female labour during any month and female searcher(s) has/ have to be employed in addition to the authorised strength of Factory, Depot, Park etc, the salary and allowances paid to the additional female searcher(s) shall be distributed on an equitable basis between the contractors employing female labour taking into consideration the value and period of completion of their contracts. The GE's decision in regard to the amount recoverable on this account from contractor shall be final and binding.

15. DAMAGE TO EXISTING STRUCTURES: Any damage to any existing structures, any existing road etc. during the execution of works shall be made good by the contractor at his own expense. Rectification, replacement, making good, touching up, etc. shall be carried out conforming to the materials and workmanship originally provided and to the satisfaction of the Engineer-in-Charge. In case of any dispute on this account, the decision of the GE shall be final, binding and conclusive.

16. APPROACHES: The contractor shall make arrangements for and provide at his own cost all temporary approaches, if required to the site(s), after obtaining approval in writing of the GE to the layout of such approaches.

17. COORDINATION WITH OTHER AGENCIES: Refer Condition 24 of IAFW-2249. The contractor shall permit free access and afford normal facilities and usual convenience to other agencies or departmental workmen to carry out connected works or services under separate arrangements. The contractor will not be allowed any extra payment on this account.

18. RECORD OF MATERIALS AND PURCHASE VOUCHERS:

18.1. The quantity of materials such as cement, steel, paint, water proofing compound, chemicals for anti-termite treatment, and the like (as applicable) and directed by the Engineer - in - charge , (the quantity of which cannot be checked after incorporation in the works), shall be recorded in the Measurement Book as " NOT TO BE ABSTRACTED" and signed by the contractor and the Engineer-in-charge as a check to ensure that the required quantity had been brought to site for incorporation in the work.

18.2. The materials brought to site shall be stored as directed by the Engineer-in-charge and those already recorded in the Measurement Book shall be suitably marked for identification.

18.3. The contractor shall produce original receipted purchase vouchers/ invoices from the manufacturers and/or their authorised agents for the full quantity of the following materials, as applicable as a advances on account of the work done and/or materials collected in accordance with Condition 64 of General Conditions of Contracts – IAFW-2249 bills along with Test Certificates wherever applicable in respect of supplies for the following items (as applicable) to the Engineer-in-charge in addition to any other items as directed by Engineer-in-charge before payment is made in RARs, against material lying as site:-

- (a) Water proofing compound
- (b) Chemicals for Anti-termite treatment
- (c) Paint, Distempers and cement base paints & like
- (d) Cast iron pipes and fitting
- (e) Sanitary fittings
- (f) All grades of bitumen
- (g) Steel windows / ventilators
- (h) Factory made door shutters
- (i) Floor/Wall tiles
- (j) Builders Hardware
- (k) Tarfelt/bituminous products
- (l) Salt glazed stone ware pipe
- (m) Electrical and water supply fittings/fixtures where names of manufacturers/brands are specified or approved
- (n) Cables

SPECIAL CONDITION

- (o) Steel reinforcing bars and structural steel which are not issued under Schedule 'B'
- (p) Cement
- (q) Steel
- (r) PVC pipes
- (s) Any other proprietary articles.

18.4. The contractor shall, on demand, produce to the GE, original receipted vouchers/invoices in respect of the materials other than as stated in sub-Para just hereinbefore. Vouchers/invoices so produced and verified shall be stamped by Engineer-in-Charge indicating contract number. The contractor shall ensure that the materials are brought to site, in original sealed containers/packing, bearing manufacturer's marking except in the case of the requirement of materials (s) being less than smallest packing.

18.5. Bitumen shall be purchased directly from manufacturers' stockiest or their authorised dealers only. These vouchers/ invoices shall be defaced by the GE/Engineer-in-Charge, indicating reference to the contract number, under his dated signature, and CTC thereof shall be kept on record so as to avoid their being used again.

18.6. The vouchers/ invoices will clearly indicate the contract No. and IS No., specific alternative to which the material conforms in case of various alternative in IS.

19. WATCH/ LIGHTING: The contractor shall at his own cost take possible precautions to ensure safety of life and property by providing necessary fencing, barrier, light, watchman, etc., during the progress of work and as directed by the Engineer-in-Charge.

20. CLEANING DOWN: Refer condition 49 of IAFW-2249. The contractor shall clean all floors, remove cement, lime or paint drops, clean joinery, glass panes, etc., touch up all paint works and carry out all necessary items of works in connection with therewith and have the whole premises clean and tidy to the entire satisfaction of the Engineer-in-Charge before handing over the items / works. No extra payment shall be admissible to the contractor for this operation.

21. MINIMUM WAGES PAYABLE

21.1. Refer Condition 58 of IAFW-2249. The contractor shall not pay wages lower than minimum wages for labour as fixed by the Govt. of India/ state Govt. / Union Territory/ local authority, whichever is higher.

21.2. The contractor's attention is also drawn, amongst other things to the 'exploitations' to the schedule of minimum wages referred to above.

21.3. The fair wages referred to in Condition 58 of IAFW-2249 will be deemed to be the same as the minimum wages referred to above as upto date from time to time.

21.4. Schedule of minimum wages are not enclosed along with tender documents. However the contractor shall be deemed to have verified the minimum fair wages payable as on the last due date of uploading/ submission of tender.

21.5. The contractor shall have no claim whatsoever, if on account of local factors and or regulations, he is required to pay the wages in excess of minimum wages as described above during the execution of work.

22. MATERIALS AND SAMPLES:

22.1. Refer Condition 10 of IAFW-2249.

22.2. The materials and articles, which have been specified from certain makers/manufacturers, shall be of make/manufactures as specified. If the manufacturers specified in the tender documents make both ISI marked and conforming to ISI, the materials/ articles shall be ISI marked.

22.3. The materials and articles, which have not been specified in the tender documents by makes/ manufacturers, shall be as under: -

- (i) If ISI marked materials are being manufactured the same shall be ISI marked. For list of ISI marked manufacturers refer website of BIS i.e. www.bis.org.in.
- (ii) If materials are not being manufactured with ISI marked, the same shall be conforming to IS specifications.

22.4. Materials of local origin shall be as specified and conforming to samples kept in GE's office. The tenderer is advised to inspect sample of materials which are displayed in the office of

SPECIAL CONDITION

GE, before submitting his tender. The tenderer shall be deemed to have inspected the samples and satisfied himself as to the nature and quality of materials, is required to incorporate in the work irrespective of whether he has actually inspected them or not.

22.5. The contractor shall not procure materials and articles unless the samples are first got approved by the GE.

HANDING OVER OF SITE: Site for the execution of the work will be available as soon as the work is awarded. In case it is not possible to make the entire site available on the award of the work, the contractor will have to arrange his working programme accordingly. No claim whatsoever, for not giving entire site on award of work and for giving site gradually, will be tenable.

(SIGNATURE OF CONTRACTOR)

**AGE Contract
For Accepting Officer**

PARTICULAR SPECIFICATIONS**1. GENERAL**

1.1. Works under this contract shall be carried out as detailed in Schedule 'A' and in accordance with particular specifications, drawings, Special Conditions, other provisions given in General Summary and General Specifications/Provisions given in MES Schedule of rates 2009 Part I and MES Schedule 2010 of rates Part-II.

1.2. General rules, Specifications, Special conditions and all preambles in the MES Schedule shall be deemed to be applicable to the work under this contract, unless stated otherwise in these documents. In case of variance between provisions in these documents and those given in MES Schedule, the provisions in these documents shall take precedence over the aforesaid provisions in the MES Schedule.

2. MINOR DETAILS

2.1. Rates quoted by the tenderer shall be deemed to include for any minor details/items of work and/or constructions which are obviously and fairly intended and which may not have been included in these documents and but which are essential for the execution and entire completion of the work.

2.2. Decision of the Accepting Officer as to whether any minor detail of work and/or construction is obviously and fairly intended to be included or not in the contract shall be final, conclusive, and binding.

SCOPE OF WORK: The scope of work consists of "**PROVN OF FILTRATION AND DISTRIBUTION OF ACCUMULATED WATER OUT OF RAIN WATER HARVESTING IN GARDEN CITY MAP AREA UNDER AGE B/R (EAST) AT GE DEHU ROAD**" as described in Schedule 'A' and as specified in these particular specifications.

3. MATERIALS:

3.1. Materials supplied by the contractor for incorporation in the work shall unless otherwise specified in the particular specifications comply with the requirement of relevant Indian Standards (IS) latest edition including amendment there to. If not specifically mentioned in specifications hereunder, the Makes of various materials required to be incorporated in the work is attached as Appendix 'B' to particular specifications.

3.2. The contractor shall purchase materials directly from the manufacturer or their authorized dealers only. The materials shall be brought to the site in sealed containers only. The materials like, synthetic enamel paint, acrylic paint, cement base paint etc. brought at site for incorporation into work shall be recorded in MB for "NOT TO BE ABSTRACTED" after verifying the purchase vouchers by the Engineer-in-Charge. This shall be done before such materials are incorporated into work.

3.3. After approval of the samples the quantity of materials to be incorporated in the work shall be brought to the site by contractor along with the purchased vouchers indicating quality and quantity of materials in a single or more number of lots. The contractor shall inform Engineer-in-Charge in writing regarding the quality and quantity brought to site in each lot which will be inspected by the Engineer-in-Charge before incorporation into the work. The work shall commence only after verification and ascertaining correctness/genuineness of quality and quantity of materials brought in each lot.

3.4. The contractor shall take all precautionary measures during execution of work as specified in clause 15.10 of SSR Part-I. The contractor shall open the sealed containers in the presence of Engineer-in-Charge. On physical completion of work the contractor shall obtain all users signatures. The contractor shall produce all purchase vouchers (as applicable for work) for all the materials used in the work as and when demanded by GE/Engineer-in-Charge.

4. DISMANTLING/ DEMOLITION: Demolition/ dismantling/ taking down shall be done where directed by the Engineer-in-charge. Necessary precautions shall be taken as specified in clause 21.6 of MES Schedule Part I. Any damage done to the existing structure shall be made good by the contractor at his own cost & shall not have any claim whatsoever in this regard, failing which the work shall be carried out at the risk & cost of the contractor.

5. EXCAVATION

- (a) Excavation in trenches shall be carried out all as specified in clause No 3.3.4, 3.12. 3.13, 3.16.2, 3.1.8 of MES schedule Part I – 1991.
- (b) All excavation shall be true to the exact dimension and profiles as described in SSR and as directed by Engineer-in-Charge. During excavation Contractor shall take care to avoid damage to existing drains, water mains etc. The bed of excavation shall be formed to the required level or ground shall be made firm. The sides excavation shall be dressed/trimmed to required size and shape. As soon as laying of pipe line/cables and testing has been completed, the trench shall be filled with excavated earth in layes not exc 25 cm thick watered & well rammed with iron hammer.

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- (c) Returning filling shall be carried out with the soil obtained from excavation. The filling shall be well rammed, watered and consolidated in layers. The use of vegetable soil, mud, etc, in filling is not permitted.
- (d) Spoil obtained from excavation, remaining after filling shall be removed and disposed off outside MD land and deposited where directed at place and in the manner as directed by the Engr-in-Charge.
- (e) **MOORUM** : Moorum for filling shall be clean, of good binding quality and shall be obtained from approved pits or quarries of disintegrated rocks which contain siliceous material and natural mixtures of clay of cacavious.
- (f) **HARD CORE** : Hard core shall be all as specified in Clause 3.27 of SSR Part-I. Hard core shall be of broken trap stone of gauge not exceeding 63mm, well graded to provide dense & compact sub grade . Unless otherwise indicated or mentioned in specifications the thickness of hard core shall be 100 mm consolidated. Hard core filling where indicated on Sch 'A' shall be spread, levelled in layers not exceeding 15 cm thick, well rammed, watered & consolidated. Moorum may be used to fill interstices in hard core.

5. CONCRETE WORK**5.1. Material:**

5.1.1. Cement: As per Appendix "A" to the particular specifications.

5.1.2. Fine aggregate

5.1.2.1. Fine aggregate for concrete works shall be natural sand/crushed stone sand/crushed gravel sand or combination thereof and shall be conforming to IS-383 and grading within the limits of Grading Zones II to III all as specified in clause 4.4.7.2 of SSR Part-I: 2009. Fine aggregate conforming to grading zone IV of IS-383 shall not be used for RCC works.

5.1.2.2. The sand shall be hard, dense, strong, durable, clear, free from veins and adherent coatings, and free from injurious amount of disintegrated pieces, alkali, vegetable matters and other deleterious substances. As far as possible, flaky and elongated pieces shall be avoided.

5.1.2.3. Natural river sand/crushed stone sand shall be obtained from the sources as approved by the GE.

5.1.3. Coarse aggregate:

5.1.3.1. Coarse aggregate for all cement concrete work shall be crushed gravel or stone as per IS 383: 1970. Single sized coarse aggregates shall be supplied in the nominal sizes given in Table 2 of IS 383: 1970. For any one of the nominal sizes, the proportion of other sizes, as determined by the method described in IS 2386 (Part I): 1963 shall also be in accordance with Table 2 of IS 383: 1970. Graded coarse aggregates may be supplied in the nominal sizes given in Table 2 of IS 383: 1970.

5.1.4. Water: Water shall conform to the requirement stipulated in IS 456: 2000 and as per clause 4.9 of MES Schedule.

5.2. Nominal mix concrete: Proportions of nominal mix concrete shall be as per Table 9 of IS 456: 2000.

5.3. Batching: Only weigh batching shall be done permitted for proportioning the nominal mix concrete.

5.4. Mixing: Concrete shall be mixed in a mechanical mixer. The mixer should comply with IS 1791 and IS 12119. The mixer shall be fitted with water measuring (metering) devices. The mixing shall be continued until there is a uniform distribution of the materials and the mass is uniform in colour and consistency. If there is segregation after unloading from the mixer, the concrete should be remixed.

5.5. Curing: Curing to concrete surfaces shall be carried out all as specified in clause 4.11.13 of SSR Part-I: 2009.

5.6 WATER PROOFING COMPOUND: Water proofing compound shall be integral water proofing compound conforming to IS-2645: 2003. It shall be mixed with cement concrete or cement mortar in the proportion and manner as given in manufacturer's instructions and if not stipulated specifically at the rate of 3% by weight of cement.

PARTICULAR SPECIFICATIONS**6 CERAMIC GLAZED TILES IN DADO/SKIRTING**

6.1 Wherever shown on drawing / indicated in schedule of finishes ceramic tiles in dado/skirting shall be conforming to IS – 13712 grade B-II(a).

6.2 Tiles shall be of 'matt' finish and of colour/shade as approved by GE.

6.3 The size of tiles shall be 300 x 200 mm 7 to 8 mm thick, as approved by GE.

6.4 Designed coloured decorative border tiles 75mm height shall be provided in toilets dado at top and bottom to stair case and around mirror in the pattern shown on drgs.

6.5 The tiles shall be laid over 10 mm thick bedding / backing layer in CM 1:4 and shall be as specified in clause No 13.40 of SSR Part I.

6.6 The tiles shall be tested at the sampling rate given in I.S. – 13712.

6.7 The make of tile shall be as given in Appendix 'C'.

6.8 Tile shall be of first quality.

6.7 CERAMIC TILE FLOORING

6.7.1 Wherever shown on drawing / indicated in schedule of finishes ceramic tiles in flooring shall be conforming to IS. – 13712, grade B-II-(a).

6.7.2 Tiles shall be of nonskid (matt finish) as approved by G.E.

6.7.3 The size of tiles shall be 300 x 300 x 7 mm to 8 mm and colour/shade shall be as approved by GE.

6.7.4 Irrespective of what is mentioned in schedule of finishes, the tiles shall be laid over 20 mm thick bedding layer in CM 1:6. Tiles shall be laid over 75mm thick PCC subbase over 100mm thick hard core over consolidated earth/ moorum in Ground floor. In case of first floor, tiles shall be laid over 20mm thick bedding layer in CM 1:6 over roof slab irrespective of what is mentioned in schedule of finished and shall be as specified in clause No 13.40 of SSR Part I. Border shall be provided in the pattern shown on drawing.

6.7.5 The tiles shall be tested at the sampling rate given in I.S. –13712.

6.7.6 The make of tile shall be as given in Appendix 'C' and as approved by GE.

i.Tile shall be of first quality.

6.8 NON SKID CERAMIC TILE FLOORING

(a) Tiles in flooring shall conforming to IS-13712, grade B- 11 (a).

(b) Tiles shall be (matt finish) as approved by GE

(c) The size and colour shall be as approved by GE.

(d) Tiles shall be of 1st quality.

7 PLASTERING**a. GENERAL**

- i. Plastering/rendering shall be carried out as specified in section 14 of MES Schedule of rates Part I to the extent applicable to the relevant items of Schedule 'A'.
- ii. Thickness of cement plaster mentioned in schedule 'A' items shall be finished thickness exclusive of dubbing. Dubbing may however be done in one operation with plaster if so ordered.
- iii. Particular attention of the contractor is invited to take note of local practices and local availability of materials like bricks/stones, form work etc. for any extra quantity of mortar required for rendering smooth, extra dubbing required to level the surfaces etc. touching up properly and achieving smooth and even surfaces which shall be carried out by the tenderer & no separate payment will be admissible on this account.

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1. The contractor shall give the manufacturer's test certificate along with paid voucher for factory made cement mortar. The department shall also carry out independent testing for factory made cement mortar from the government engineering college/NABL accredited Lab. The independent testing shall be carried out twice during the currency of the works. Testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

8 DESIGN MIX CONCRETE:

8.7.1 Design mix concrete shall be as per clause 4.11.2.1 of SSR Part-I and IS-456. Proportions of cement and aggregates with water to obtain required strength specified shall be determined by weight by the contractor. The contractor shall prepare a trial mix and get the same tested to verify the required workability and characteristic strength. The contractor shall ensure the achievement of the defined strength of the concrete and no laxity shall be allowed on this account.

8.7.2 LABORATORY MIX DESIGN AND TESTS

As soon as possible, after receiving the order to commence work, the contractor shall procure sufficient quantities of required type of aggregates, cement and water and find their characteristics for suitability of the specifications. Based on the result of such verification, he shall carry out number of trials to determine the optimum mix to produce the specified slump and 28 days target mean strength. Each of these cubes shall also be tested simultaneously for 7 days result as guidance for job user. If the contractor so desires, he may commence the works based on test results of 7 days strength to be commensurate with the corresponding 28 days strength at his own responsibility. The trials shall be jointly carried out in the laboratory as detailed below. The mix shall finally be approved by GE. Cost of materials, labour and other incidental including transportation charges for all test including the routine work test specified hereinafter shall be borne by the contractor. However the departmental laboratory facilities where available will be extended with the payment of specified charges. Following data and results thereof shall be submitted to the GE by the contractor for approval of mix design prior to commencement of the actual works:-

- (a) Grading and density of coarse and fine aggregates proposed to be used.
- (b) 7 & 28 days compressive strength of the cement concrete.
- (c) Mix proportion of aggregates, cement, any admixture and water for consistency (slumps) tests and their results.
- (d) Strength characteristics obtained both for 7 and 28 days compressive strength for the selected trial mixes, using minimum water cement ratios
- (e) Results of additional trials till the desired slump value was reached and the target mean strength is obtained to achieve the specifications.

8.7.3 For design mix, it will be express condition that only weigh- batching shall be followed and no conversion of weights into volumes shall be permitted.

8.7.3.1 MIX PROPORTION AND STRENGTH FOR DESIGN MIX CONCRETE

- (i) Characteristic compressive strength to be as strength at 28 days achieved as per IS-456-2000 for M-25 and M-30 design mix concrete respectively. : 25 N/Sqmm and 30 N/Sq mm
- (ii) Type of Cement : As specified here-in before
- (iii) Aggregate/cement ratio by weight : As per mix design based on IS-10262 & IS-456.
- (iv) Workability : As per clause 7 of IS-456.
- (v) Water cement ratio : As per mix design based on IS-10262 and IS-456
- (vi) Degree of quality control : Good (Refer IS-10262)
- (vii) Minimum cement content : As per IS-456: 2000
- (viii) Maximum size of aggregate : 20 mm graded.
- (ix) Max water cement ratio : As per table 5 of IS-456 2000

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8.7.4 For design mix, it will be express condition that only weigh-batching shall be followed and no conversion of weights into volumes shall be permitted.

9. BRICK MASONRY WORK**9.1 MATERIALS**

9.1.1 BRICKS: Bricks shall be kiln burnt best quality locally available without frog conforming to the samples

kept in GE's office. Unless otherwise specified in BOQ bricks shall have average compressive strength of not less than 35 kg/sq cm. The nominal sizes of bricks shall be 230mm long, 115 mm wide and 75mm high. The permissible tolerance in dimensions of bricks shall be Plus or Minus 8 percent. Water absorption of bricks shall not exceed 20 % when tested in accordance with IS-3495. Sampling and testing of bricks shall be carried out as per IS-5454 and IS-3495. With reference to special conditions 5.1.1 to 5.1.4 MES Schedule Part I, thickness of brick walls in one brick thick and above upto 3 bricks thick shall be measured in multiples of half brick thick including thickness of joints. For the purpose of pricing deviation orders, the brick shall be deemed to be sub class "B" old size bricks.

10. SOLID BLOCK MASONRY

10.1 The concrete mix proportions to be used for solid block shall be as under:-
Solid Blocks PCC 1:3:6 (Type C1 using 20mm graded aggregate)

10.2 The mixing shall be done in mechanical mixer only. Manufacturing shall be carried out in Block making machine with vibrating arrangement so as to give dense block. The placing, compacting and curing shall be carried out as per requirements of IS 2185.

10.3 The nominal dimensions of concrete block shall be 400mm x 200mm or 100mm. Testing and sampling shall be as per requirements of IS 2185. Minimum average compressive strength of solid block shall be 52 Kg/Sqcm.

10.4 Concrete block masonry shall be provided with CM 1:6 for wall thickness exceeding 100mm CM 1:4 for 100mm thick walls and work shall be carried out all as specified in clause 4.23 to 4.23.15 of MES Schedule Part I.

11.0 FLOORING**11.1 GENERAL**

11.1.1 Refer Clause 13.25 of SSR Part – I.

11.1.2 Exposed edges of floor shall be finished to match with top surfaces of floors.

11.1.3 Augction between floor and walls shall be as directed by Engineer-in-Charge at site.

11.1.4 Floors shall be laid to level or to slope or sunk as shown on drawings or as directed by Engineer-in-Charge. The finished surfaces shall be free from any authorizedd rise or hollows.

11.1.5 Floors shall be carried through all the openings in walls and over dwarf wall of passage verandah etc. In case of openings in between rooms etc with different floor finishes, the dividing line of floors of each type shall be, unless otherwise indicated in drawings, the internal edge of the rebate of the door.

11.1.6 For type of floors refer Schedule of finishes/drawings including notes thereon.

11.1.7 PCC floors shall be laid in alternate bays adopting panel dimensions specified in Clause No. 13.32.1 of SSR Part – I. Floor bays shall be so arranged that the bays shall be of equal width not exceeding 1200 mm.

11.1.8 Sub base of ground floors shall be laid over hard core and consolidated approved earth filling unless otherwise specified here-in-after.

11.1.9 Sub base need not be laid in bays. No price adjustment shall be made on this account.

11.1.10 Separate formwork need not be provided for flooring when dividing strips are provided. No price adjustment shall be made on this account.

11.2 SUB BASE

11.2.1 Sub base under all ground floor finishes shall be of cement concrete PCC (1:4:8) type D2 (40 mm graded stone aggregate). Thickness of the sub base shall be 75mm unless otherwise specified. Top surface shall be prepared to receive finish covering above.

11.3 PCC FLOORING

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11.3.1 PCC floor of thick as specified (1:3:6) Type C-2 (using 40 mm graded stone aggregate) shall be provided finished fair with a float without using extra cement, all as per clause No. 13.3.2 of SSR Part – I.

12. Precast Interlocking Paver blocks

Precast concrete Paver blocks shall conform to IS 15658:2006, Specification for Precast concrete blocks for paving. Paver blocks shall be sound and free from cracks or other visual defects. The tolerance on length or breadth of paver blocks shall be +2mm and tolerance on thickness of tiles shall be +3mm. Water absorption shall not be more than 6 percent by mass. Shapes shall be triangular, Zigzag, Hexagon or other shape as indicated. Colour of paver blocks shall be as indicated or as decided by GE. Thickness and grade of concrete of paver blocks is decided based on intensity of traffic, which is as under (Refer Table 1 of IS 15658): -

Traffic Category Paver Block Grade of concrete

Thickness

Light Traffic 60mm M-35

Medium Traffic 80mm M-40

Heavy Traffic 100mm M-50

13. KOTA STONE FLOORING :-

13.1 Provide polished hand dressed Kota stone in floors / partition all as described in relevant item of Sch 'A'. Kota stone shall be selected quality, hard, sound, dense and homogeneous texture and free from cracks, decay. They shall be hand cut to requisite thickness. Kota All angles and edges of slab shall be true, square and free from chippings and the face shall be true and plain. For stair case steps treads and risers slab shall be of full width and of suitable length. The nosing shall be chamfered and two parallel grooves ten by ten immediately behind the nosing shall be provided to avoid skidding. The Kota stone shall be laid and polished as specified in relevant item of Sch 'A' and all as specified in MES SSR Part-I.

14.0. NON SKID CERAMIC TILES :

14.1 Ceramic tiles in flooring shall be conforming to IS-13712, grade B-II(a) and as per clause 14.5.2 of SSR Part-I

14.2 Tiles in floors of WC, bath & toilet shall be of with 'non-skid finish' as approved by GE.

14.3 The size of tiles in floors shall be as specified in Sch 'a' & of pattern/design/colour as approved by GE.

14.4 Screed bed and sub base shall be as per Sch 'A'.

15.0 CERAMIC GLAZED TILES IN DADO/SKIRTING

15.1 Ceramic tiles in dado/skirting shall be conforming to IS – 13712 grade B-II (a).

15.2 Tiles shall be of 'matt' finish and of colour/shade as approved by GE.

15.3 The size of tiles shall be as indicated in BOQ, as approved by GE.

15.5 The tiles shall be laid over 10 mm thick bedding / backing layer in cement mortar (1:4) and shall be as specified in clause No 13.40 of SSR Part I.

15.6 The tiles shall be tested at the sampling rate given in I.S. – 13712.

15.7 The make of tile shall be as given in list of makes and approved GE

15.8 Tile shall be of first quality

16. VITRIFIED TILES: Vitrified Porcelain tiles shall be all as specified in Clause 13.15 of MES Schedule Part I. The colour of tiles shall be as approved by the GE. The tiles shall be procured from any of the manufacturers as listed in list of manufacturers here-in below. Bedding and laying shall be all as specified in BOQ and in Clause 13.41.1 and 13.41.2 of MES Schedule Part I.

17. CUDAPPAH STONE. Provide Cudappah stone slab flooring as under :-

(a) This shall be as per Sch 'A'/BOQ as approved and all as per applicable clauses of SSR Part I, 2009.

(b) Laying, polishing and finishing shall be carried out all as specified in clause No 13.47.4 of MES schedule Part-I -2009 and polishing shall be carried out all as directed

18. GRANITE STONE FLOORING :-

Provide granite stone slab flooring as under :-

(a) The slab shall be of selected quality, hard sound, dense, homogeneous in textures, free from crack, decay, weathering and flaws. The stone shall be hand cut to required/size & thickness & shall be of colour approved by GE. The slab shall have top face polished before being brought to site.

(b) Every slab shall be cut to required size and shape and fine chisel dressed on sides to full depth so that straight edge laid alongside to the stone shall be in full contact with it. The sides

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(edges) shall be table rubbed with coarse sand or machine rubbed before laying. All angles shall be free from chippings and surface shall be true and plain.

(c) Laying, polishing and finishing shall be carried out all as specified in clause No 13.47.4 of MES schedule Part-I -2009 and mirror polishing shall be carried out all as directed.

19.0 PLASTERING AND POINTING**19.1 GENERAL**

19.2 Preparation of mortar for plastering and pointing of mixes indicated here-in-after shall be as per Clauses 14.13 and 14.13.3 of SSR Part I.

19.3 The preparation of surface and application of plaster shall be as per Clause 14.14 of SSR Part I as applicable to new work.

19.4 The Augction of skirting/dado and plaster shall be as directed by Engineer-in-Charge/specified herein after..

20. GLAZING :

20.1 SHEET GLASS : Sheet glass for glazing shall be plain, clear, good quality, free from specks, bubbles smoke wanes, air holes and other defects and shall confirm to IS-2835. The thickness of sheet glass shall be 3 mm nominal thickness for the panes not exceeding 0.5 Sqm each and 5mm (nominal thickness) for panes exceeding 0.5Sqm each. Glazing shall be done with sheet glass to all windows except in situations where pin headed glass has been directed. Figured glass shall be 4mm thick as specified in SSR Part-I.

21.0 WHITE WASHING/COLOUR WASHING :

21.1 White wash/colour wash shall be provided as specified in Section 15 of MES Schedule Part - I.

22.0 DISTEMPER :

22.1 Where specified, provide two coats of oil emulsion distemper over one coat of primer all as specified in clause Nos. 15.5 and 15.13 of SSR part – I

21.0 PAINTING :**21.1 GENERAL**

21.1.1 Painting shall be of quality not inferior to those required by the relevant IS and as per Clause 17.2 of SSR Part – I.

21.1.2 Workmanship and preparatory works shall be as per Clause 17.6 of SSR Part – I as applicable for new works. Painting shall be with priming coat, under coat and one finishing coat unless mentioned otherwise. Primer for wood work shall be pink primer and for steel shall be red oxide generally. Priming coat shall be redone if more than six months have lapsed before executing the under coat.

21.1.3 The final finish of paint shall be glossy suitable for, internal / external use as approved by the GE. Galvanised steel articles (sheet, pipes etc and wire cloth) and builders hardware shall be left untreated. All coats of paint shall be synthetic enamel paint and shall be obtained from any one of the manufacturers listed in Appendix 'C' and shall be of first grade/first quality. In case of deviations, SSR rates shall be applied adjusted by the contractor's percentage. Exposed surface of all steel and wood items shall be painted with two coats of synthetic enamel paint over a coat of primer unless otherwise specified elsewhere.

22. SYNTHETIC ENAMEL PAINT:

(a) The synthetic enamel paint shall be of make as listed in list of makes of quality grade-I as specified in clause 17.2 of SSR Part-I. The thinner shall be added as per clause 17.3.6 of SSR Part-I if directed by Engineer-in-charge. The paint shall be ready made paint brought in company packed scaled containers.

(b) The surfaces of wood and steel shall be cleaned as prepared to receive the paint as specified in clause No. 17.6.1, 17.,6.1.1, 17.6.1.2, 17.8.1, 17.9 & 17.10 of SSR Part-I.

(a) The paint shall be applied by brush as specified in clause No. 17.5 to 17.5.4 of SSR Part-I. Generally painting work shall be carried out as specified in clause No.17.3 of SSR Part-I. Provide scaffolding wherever required as specified in clause No.15.11 & 17.4 of SSR Part-I. The rate quoted for each item shall be inclusive of the scaffolding and No extra payment shall be admissible.

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23.1 Two coats of cement based paint over one coat of primer shall be applied to surfaces where shown in schedule of finishes. Cement based paint shall conform to IS – 5410 and shall be applied as specified in clause 15.15 of SSR Part - I. Colour/shade of cement paint shall be approved by GE.

23.(A) DISTEMPER OIL EMULSION :

(a) Distemper of required colour and shade shall be obtained ready mixed conforming to IS-428-1969 specification for distemper oil emulsion. It shall be in form of homogeneous paste free from odour of putrefaction when mixed with water.

(b) The surfaces shall be prepared as specified in clause No. 15.14.1 of SSR Part-I.

(c) The distemper paste shall be thinned with water in the proportion to prepare oil emulsion distemper as specified in clause No. 15.14.4 of SSR Part-I.

(d) Distemper shall be applied with brush to obtain uniform finish as specified in clause No. 15.14.5 of SSR Part-I

24.0 BLOCK BOARDS

24.1 Block boards shall be as specified in Schedule 'A' / BOQ. In absence of specification there in, the same shall be as specified in Clause 12.12 of SSR Part I.

24.2 VENEERED PARTICLE BOARD

24.2.1 Veneered particle board shall be as specified in Schedule 'A' / BOQ. In absence of specification there in, the same shall be three layered flat pressed solid core interior grade BWR type with decorative veneer both sides and shall be BWR grade bonded with phenol formaldehyde synthetic resin adhesive conforming to IS-3097 as specified in Clause 12.14 of SSR Part I.

25.0 PRE-LAMINATED PARTICLE BOARD

25.1 Pre-laminated particle board exterior grade both side with decorative face veneers and shall be provided as mentioned in relevant items of Schedule "A".

26. PVC (SWR) PIPE & FITTINGS :-

PVC (SWR) soil pipes and fittings shall be rigid PVC and all waste pipes as specified in relevant item of schedule 'A' and specified herein after. PVC Pipes shall confirm to IS-13592 and shall have ISI mark on them. PVC fittings shall be provided as per manufacturer's recommendations. Also refer clause 18.27A, 18.27A-1, 18.27A.2, 18.27A.3, 18.27A.4 of SSR Part-I 2009

27.0 CAST IRON FITTINGS AND PIPE : All CI pipes and fittings shall be contractors own supply unless otherwise specifically mentioned. Cast iron pipes and fittings shall be centrifugally cast spigot and socket type class 'LA' and flanged pipes & fittings class 'A' confirming to relevant IS. CI pipes shall be laid and jointed with runlead/rubber tyton joints as applicable and all CI fittings shall be as per Sch 'A'. Laying of CI pipes & fittings shall be in accordance with IS 3114 and as per section 18 of SSR Part-I. Necessary purchase vouchers and manufacturers test certificates shall be produced by the contractor.

27.1 CAST IRON PIPE WORK :

(a) The work shall be executed as specified in MES Schedule Part-I and as per IS-3114

(b) While loading/unloading the CI pipe proper care shall be taken to avoid damages to the pipes and especially to the spigot end. Pipes should be not dragged along the concrete and similar pavement with hard surfaces.

(c) The pipes shall be inspected for defects and defect suspected cracks it shall be rum with light hammer, if doubt persists further confirmation may be obtained by pouring little Paraffin on the inside of the pipe at the suspected spot, if a crack is present the paraffin sweeps through and shown on the outer surface.

(d) All lumps blisters and excess coating material shall be removed from the socket and spigot and end of each pipe. Outside of the spigot and the inside of the socket shall be wire brushed, wired clean, dry and free from oil and grease before the pipe is laid.

(e) Every precaution shall be taken to prevent foreign materials from entering the pipe is being placed in the location if the pipe cannot be laid without earth entering the connections is made with the abject pipe. During laying Upsatia it, heavy tightly wovan canvas bag of suitable size shall be placed over match end and left it there until into the no debris, tools clothing or other materials shall be placed in pipe.

(f) After placing of length of pipe in the trench, spigot shall be connected in the socket and the pipe aligned top gradient. The pipe shall secure its place with approved back full materials temped, under except at the socket. Pipe and fitting which do not allow a sufficient and uniform space for joints shall be removed and replaced with pipe and fitting of proper dimensions. To

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ensure such j uniform space precautions shall be taken to prevent dirt from entering the joint space. At times when pipe laying is not in progress the open end of pipe shall be closed by water tight plug or other means approved by Engr-in-charge.

(g)The cutting of pipes for inserting valves, fittings collar pieces shall done in a neat and a workman like manner without damage to the pipe so as to leave a smooth end at right angles to the axis of pipe cutting machine is recommended. The cutting of pipes by means of any oxyacetylene torch shall not be allowed.

(h)The CI pipes class 'A and 'LA' shall be jointed with tyton joints and other fittings/specials with a spigot and socket ends shall be laid and jointed with run load joints.

(j)If the certain situations in the CI pipe line, pieces are required for adjustment of length, pipes may be cut with prior permission from the Engineer-in-charge. Minimum number of pipes shall be used in the work and the sch. Rates shall be deemed to be inclusive of cost of cutting the pipes. Use of load wool is strictly prohibited.

(k) The quantities of pipes, special fittings etc. given in Sch 'A' are approximate. Contractor shall ascertain the exact requirement of pipes, special fittings etc as per site conditions before placing the firm supply order. No claim whatsoever for excess quantities brought at site Sch 'A' and all surplus stores shall be removed from the site after completion of work and before handing over site to the department

27.2. LAYING OF CI PIPE LINE :

- (a) The routes for laying the pipes lines will be actual layout shall be as directed by the GE and no claim whatever on this account shall be admissible.
- (b) Cast iron pipes shall be laid and jointed with titan joints etc and bends fittings with flanged joints as described in Sch 'A'.
- (c) The laying of CI pipes shall be in accordance with IS-3114 or latest IS and as specified in MES Sch Part-I clause No. 18.46

27.3 JOINTING OF PIPES AND FITTINGS AND TESTING : Run Lead joints/Tyton joints/flanged joints/mechanical joint shall be provided as indicated in Sch 'A' for general specifications refer MES schedule section 18 clause 18.48 of SSR Part-I 2009. Jiffy collar coupling shall be provided as specified in and as directed & manufacturers instructions.**28. SLUICE VALVE :-** Sluice valve shall confirm to IS 14846:2000 and fixing shall be done as specified in clause 18.57 of MES Sch Part I -2009.**29. TESTING OF MAIN UNDER HUDRAULIC PRESSURE:**

- (a) As the work of laying of the pipe progresses the testing of the sections of the main already laid and completed shall be carried out as early as possible, All the equipment and accessories required to carryout the test successfully shall be arranged by the contractor under his own arrangement
- (b) The length of the section to be tested shall be as decided y the Engineer-in-charge.
- (c) The trench is temporarily filled on central portion of the pipes keeping joints exposed to find leakage therein, any of during testing operation. The closing arrangement at the free ends of the section to be tested will have to resist the end of the rust call on test pressure.
- (d) Filling of the pipe, if done by a pump it shall be placed at a lower level of the section. However, if the filling is done manually, it shall be done from a higher point in the section near the air valve.
- (e) CI pipe will be tested to full pressure as per provisions in IS-3114-65 and 5822-70 and as per 18.2.1 of MES schedule Part-I pressure test and leakage test shall be carried out as per para of MES Sch art-I. The test pressure shall reached gradually raising about 1 Kg per Sqcm the pressure will be maintained in the line till such time carefully check is carried out by pipe and joint. Any leakage found in joints shall be rectified and test shall be repeated to the full satisfaction of Engr-in-charge. During the testing if any pipe bursts against the test procedure the bursted pipe will be replaced and the cost of such replacement deemed to be included in rates quoted.
- (f) Water will be supplied for testing by MES for pipe line. The installation and other connection work shall be taken over only if the aforesaid tests are satisfactorily carried out and a certificate issued by the GE or his nominated representative, in addition to a certificate by him, that the whole work has been carried out the specifications laid down.

30 SALT GLAZED STONE WARE PIPES

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Salt glazed stone were pipes and fittings shall be all as described in Sch 'A' and conforming to IS-651 and shall be laid in trenches on PCC bed as specified in Sch "A" over compacted earth all as directed and as described in clause 18.68 of MES Schedule Part I. Concrete bed to pipes and the hunching or encasing to the pipes shall be provided as indicated in the Schedule "A" concrete bed sheet be provided all as described in clause 18.68 of MES Schedule Part I and as described in Schedule "A" SGWSW pipes shall be of makes as approved by GE.

31. WATER TANKS :- Rotational moulded polythene water storage tanks, dual layered, (cylindrical vertical with closed top) shall be conforming to IS and of approved make. Water tanks shall be provided with ball valve as specified.

32 PVC DOOR FRAME/DOOR SHUTTERS (FOR WC/BATH/TOILET)

32.1 PVC door shall be factory made solid PVC moulded door shutter with factory made solid PVC door frame. The size of the door opening shall be as per schedule 'A' (BOQ) and as directed by Engineer-in-Charge

32.2 The chowkats shall be of solid PVC of size 50mmx47mm made out of 5mm thick plain coloured PVC sheet reinforced with MS square tube, edges shall be painted to match with PVC sheet. The details of the door frame shall be all as shown on drawing given at Sl. Page No. 160 of SSR Part-II-2010 and as specified in clause 8B.3.1 of SSR Part-II-2010.

32.3 The shutter shall be factory made 30mm thick (stiles) with 2 panels all as specified in Item No 879 of MES Schedule Part-II of 2010. The details of the door shutter shall be all as shown on drawing given on Sl. Page No. 146 of MES Schedule Part-II-2010 and as specified in clause 8B.2.1 of SSR Part-II-2010.

32.4 The door frame shall be fixed to the wall by 6 Nos. expandable fastener bolts of 100mm long. The shutter shall be fixed with 03 Nos. stainless steel butt hinges of 100mm long. The door shutter shall be fitted with 02 Nos. aluminium anodized handles 100mm long and 02 Nos. aluminium anodized tower bolts 100mm long.

32.5 PVC door shutters and frames shall be of make approved list of makes hereinafter and as approved by the GE.

33. BUILDERS HARDWARE: -

33.1 Provide builders hardware items all as described under relevant item of Sch A'.

33.2 All articles of builders hardware shall be as per IS specifications and or as per the specifications given in the MES Schedule. Articles shall bear ISI mark.

33.3 Screws used for fixing items of builder's hardware shall be of cadmium coated & as specified in clause 9.2.6 of MES Schedule Part I.

33.4 Articles of builders hardware, where specified of Aluminum these shall be anodized aluminum.

33.5 Builders hardware shall be procured from any one of the following makes:-

- (i) M/s crown, (ii) M/s Ajanta (iii) M/s Shalimar Bombay, (iv) M/s Jyoti brand Hyderabad, (v) M/s Bharat Bombay, (vi) M/s CIEF, M/s Argent, (vii) M/s Mowjee/Classic..

34. ALUMINIUM WINDOWS, VENTILATORS AND DOORS:

34.1 Quality and chemical / mechanical properties of aluminium sections and workman ship of windows / ventilators/ doors shall be all as per relevant IS and details mentioned in clause No. 10.37 of SSR Part- I 2009.

34.2 Aluminum window shall be provided with extruded aluminum sections anodized of 2 mm thick (Minimum) for windows and ventilators. For aluminum doors the thickness of sections shall be 3 mm (Minimum) for frames and 2mm for shutters. Anodization shall not be less than 15 micron with natural matt finish. The shutter of windows shall be as directed by engineer in charge.

34.3 All fittings to aluminum doors, windows and ventilators shall be as required and shall be as per manufacturer instructions.

34.4 Aluminium Doors, Windows and Ventilators shall be from any one of the standard manufacturer i.e.

- (a) M/s Hindal & Co.
- (b) M/s Indal & Co.
- (c) M/s Bharat Aluminium Co Ltd.
- (d) M/s Jindal Aluminium Co. Ltd.
- (e) M/s Associated profiles and Aluminium Ltd.

35 ALUMINIUM SECTIONS:

PARTICULAR SPECIFICATIONS

- 35.1 Aluminum shall be provided with extruded aluminum sections anodized for aluminum doors the thickness of sections shall be 3 mm (Minimum) for frames and 2mm for shutters. Anodization shall not be less than 15 microns with natural mate finish. The shutter of door shall be as directed by engineer in charge.
- 35.2 All fittings to aluminum doors / partitions and ventilators shall be as required and shall be as per manufacturer instructions.
- 35.3 Aluminium sections including fly proof mesh for Doors, partitions shall be from any one of the standard manufacturer i.e. ASSOCIATE PROFILES AND ALUMINIUM LTD, JINDAL, INDAL, INDALCO, and HINDALCO.

36. ALUMINIUM FALSE CEILING:

36.1 False ceiling shall be provided at locations wherever directed by Engineer-in-Charge. 12mm thick fibre insulation boards shall be provided at All the locations wherever false ceiling has been shown. Boards shall be of uniform thickness free from wrap cracks and other damages. The fiber cement ceiling board shall be of size 600 mm x 600mm x 12mm thick.

36.2 Aluminum frame work shall be all as specified in Sch 'A'. The aluminum section shall be standard aluminum section manufactured by M/s JINDAL/M/s HINDALCO/M/s INDALCO. The aluminum section shall conform to relevant IS. All aluminum section shall be anodized before incorporation in the work, material and workmanship shall be all as per clause 10.38.1 (a) & (b) of SSR Part I. The unit rate includes this provision also & nothing extra is admissible on this account.

37 ZINC COATED ALUMINIUM SHEETS (GALVALUME)

37.1 Zinc coated aluminium sheet shall be 0.5 mm thick having XRW colour coating on exterior side, having cover width of minimum 1000 mm and crest height of minimum 28 mm and pitch of maximum 250 mm and minimum 190 mm. However, stiffener ribs 2 Nos between ribs shall be provided if pitch is more than 200 mm. The length of sheet shall be upto 12-13 m to suit site requirements. The material shall be cold rolled steel 550 Mpa Yield stress with hot dip metallic coating of aluminium zinc alloy (Galvalume 150 gms / Sqm total of both sides, AZ 150 as per ASTM A 653 or AS 1392). The painting shall be colour baked enamel polyester with silicon coating of film thickness 25 microns nominal on the exposed face/ exterior side and on the reverse side (interior face) shall be white with 15 microns film thickness, over a coat of 5 microns nominal thickness primer.

38. FIBRE INSULATION BOARDS

38.1 Fibre insulation boards shall conform to the requirements of I 3348-1965, specifications for fibre insulation boards. The boards shall be ordinary type all as specified in SSR Part I clause No 12.3. Workmanship shall be all as specified in SSR Part I clause No 12.22.

39. GI TUBING & FITTINGS : GI tubing and fitting shall conform to relevant IS. Tubing shall be light/medium grade as specified in Sch 'A'. The permissible tolerance in weight shall be (+) 10 percent or (-) 8 percent. Pipes and fitting shall be clearly finished, well galvanised, in and out reasonably straight and shall be free from scale, cracks, surface flaws and other defects. Zinc coating shall be uniformly adherent, reasonably smooth & free from impurities such as flux, pimples, lumping etc. GI tubing's shall be fixed with clamps all as specified in SSR Part-I.

40. MIRROR :

40..1 Mirror shall be selected quality sheet glass not less than thickness specified in Sch 'A' with edges rounded or beveled as specified in Clause No. 18.38 of MES Schedule Part-I. The mirror shall be of approved make and size shall be as indicated in Schedule 'A'.

41. (a) TOWER RAIL (TR) : Provide tower rail 20mm dia, 600mm long including fitting complete as described in Schedule 'A'/BOQ.
(b) TOILET FITTINGS : All toilet fittings shall be of best quality as described in Sch 'A'/BOQ

42. SANITARY AND TOILET FITTINGS :-

42.1 All sanitary fittings shall be white/coloured (as indicated in Sch 'A') glazed vitreous china first quality with ISI markings unless otherwise specified. All sanitary/toilet fittings shall be provided as described in Sch 'A' and directed by Engineer-in-Charge.

43. BIB TAP / PILLAR / STOP VALVES: These shall be screwed down & shall conform to the sample kept in the sample room or superior. The spindles glands, crutches, washer plates etc shall be of brass. Bib taps, pillar taps and stop valves shall be provided all as described in relevant item of Sch 'A' & as described in clause 18.13 , 18.14,18.15,18.19, 18.20,18.23, 18.24, 18.25, 18.27 & workmanship shall be as specified in clause No. 18.62 to 18.67 of MES Sch Part-I

44 STEEL:

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- a. **General:** Steel required for the work under the contract shall be procured, supplied and incorporated in the works by the contractor under his own arrangement. Steel shall comply with the requirements mentioned in the drawings, SSR, IS Specifications as amended and particular specifications given hereinafter.
- b. **Grade and type of steel: -**
- i. **Reinforcement steel:** Steel bars for concrete reinforcement wherever shown/mentioned on drawings shall be high strength deformed steel bars produced by thermo mechanical process. The grade of steel bar shall be Fe 500/ Fe 500D/ Fe 550/ Fe 550D. If a reinforcement of any other type is mentioned elsewhere, the same shall be amended to read as high strength deformed steel bars produced by thermo mechanical process having grade equivalent to Fe 500/ Fe 500D/ Fe 550/ Fe 550D. The steel bar conforming to the requirements of IS 1786: 2008 for chemical and physical properties shall be acceptable except minimum elongation percent, which shall be minimum 18 for all grade of steel bar.
- ii. **STRUCTURAL STEEL:**
1. **Structural steel (ordinary quality): Structural steel (ordinary quality) shall be as per IS 15911: 2010:** The structural steel (ordinary quality) is intended for general purposes such as door and window frames, window bars, grills, steel gates, hand railing, building hardware, fencing post and tie bars and shall not be applicable for dynamic loading other than wind loads.
2. **Hot rolled medium and high tensile structural steel:** Hot rolled medium and high tensile structural steel shall be as per IS 2062: 2011.
3. **Steel tube for structural purposes:** Steel tube for structural purposes shall be as per IS 1161: 2014 and a grade of steel shall be as per IS 10748: 2004.
4. **Structural steel (ordinary quality):** Structural steel (ordinary quality) shall be as per IS 15911: 2010. The structural steel (ordinary quality) is intended for general purposes such as door and window frames, window bars, grills, steel gates, hand railing, building hardware, fencing post and tie bars and shall not be applicable for dynamic loading other than wind loads.
- iii. **PROCUREMENT:** Steel shall be procured by the contractor from any of the sources mentioned here in after for entire completion of the work.
- iv. **Reinforcement steel:** Reinforcement steel shall be procured directly from the following manufacturers approved by E-in-C's Branch as primary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013): -
- (a) Steel Authority of India Limited, Central Marketing Organization, Northern Region, 17th Floor, scope Minar Laxmi Nagar Distt., Centre, Delhi – 110092
 - (b) Tata Iron & Steel Company (TISCO, or Tata Steel), Bombay House, 2, 4 Homi Modi Street, Mumbai - 400001, India, Tel: (91-22) 2049131, Fax: (91-22) 2049522/2870840, Email: corpcomm@sr.tatasteel.com,
 - (c) Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam Steel Plant, Visakhapatnam - 530031. India, Tel: (91-891)518226/518376, Fax: (91-891)518316, Email: cmdvsp@itpvis.ap.nic.in
 - (d) M/s SRMB Srijan Ltd, Srmb House, 7, khetra das lane, Kolkata-700012, Tel : 033 - 6600 6600, Fax: 033 - 2211 0483
 - (e) M/s Jindal Steels and Power Ltd., Plot No 2, Sector- 32, Gurgaon-122001, Haryana, Tel- +91 1662 222471-84, Fax- +91 1662 220476
 - (f) M/s Steel Exchange India Ltd., My Home Laxminivas Apartments, Ameerpet, Hyderabad-500016, A.P., Tel-040-23403725, Fax-040-23413267, E-mail-info@seil.co.in
 - (g) M/s Jai Balaji Industries Ltd, 1401-1402, Nirman Tower, 14th Floor, 26 Barakhamba Road, New Delhi-110001, Ph 033-22489808/22488173, Fax: 033-22430021/22426263, E-mail-info@jaibalajigroup.com
 - (h) M/s SPS Steel Rolling Mills Ltd., 68, Ballygunge Circular Road, Kolkata-700019, Ph-033- 2895160/67, Fax- 033-22894386, E-mail- spsdelhi@spsgroup.co.in
 - (i) M/s Shyam Steel Industries Ltd, Shyam Towers EN-32, Sector-V, Salt Lake, Kolkata-700091, Tel-033-40074007, Fax-033-40074010, E-mail-marketing@shyamsteel.com
 - (j) M/s Concast Steel & Power Ltd, Kolkata, 21 Hemant Basu Sarani, Suit Nos - 511 & 512, 5th floor, Kolkata - 700001, Tel — 91- 33 - 2213 0481- 87,

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- (k) M/s Adhunik Metaliks Ltd, Orissa, Lansdowne Towers. 2/1A Sarat Bose Road,, Kolkata- 700020
- (l) M/s Shri Bajrang Power & Ispat Ltd,, Raipur, Chhatisgarh, Vill - Borjhara, Urla Industrial Area,, Raipur-493 221, Chhattisgarh., Tel I 0771 4289079 / 29 / 39
- (m) M/s JSW Steel Ltd, Karnataka, Jindal Mansion, 5A Dr G Deshmukh Marg, Mumbai-400026
- (n) M/s Electrosteel Steels Ltd, Bokaro, Jharkhand, G K Tower, 2nd& 3rd floor, 19 Camac Street,, Kolkata, WB — 700017, Board No: 91-33-2283-9990

v. Structural steel:

a. Structural steel shall be procured directly from the following manufacturers approved by E-in-C's Branch as primary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013): -

- (a) SAIL
- (b) TISCO
- (c) RINL
- (d) M/s Jindal Steels and Power Ltd., Plot No 2, Sector- 32, Gurgaon-122001, Haryana, Tel- 01246612000, Fax- 01246612125

b. In case of non-availability of structural steel with primary producers, the same can be procured directly from the following manufacturers approved by E-in-C's Branch as secondary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013): -

- (a) M/s Kashi Vishwanath Steel Ltd., Kashipur, A-80, Vivek Vihar, Phase-I, Delhi – 110095
- (b) M/s Shri Badrinarain Alloys and Steel Ltd, 95 Stephen House, 4 BBD Bag, Kolkata-700001
- (c) M/s KL Steel Pvt Ltd, Post Box No. 61, LalKuan, Bulanshahar Road, Ghaziabad, UP-2867917
- (d) M/s Ambala Shakti Ispat Ltd, Plot No. 6, Phase-II, Industrial Area, Kala Amb, Sirmour-30
- (e) M/s Pushpak Steel Industries Pvt Ltd, Gate No.-119, Alandi, Markal Road, Dhanore, Tah, Khed, Pune

However, the price shall be adjusted by reducing the contract rate of structural steel (including all factors e.g. material, labour, etc.) associated with the items by 5% (five percent).

2. In case the desired section of structural steel is not rolled/ manufactured by the primary producers, the same can be procured directly from the above-mentioned manufacturers approved by E-in-C's Branch as secondary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013) without any price adjustment.
3. Structural steel (ordinary quality) as per IS 15911: 2010 shall be procured from primary producers/ secondary producers/ BIS marked manufacturers or their authorized dealers at the option of the contractor without any price adjustment.
4. Pre painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 shall be procured from primary producers/ BIS marked manufacturers or their authorized dealers at the option of the contractor without any price adjustment.
5. Steel tube for structural purposes as per IS 1161: 2014 shall be procured from primary producers/ BIS marked manufacturers or their authorized dealers at the option of the contractor without any price adjustment.
6. Notwithstanding above, reinforcement steel, structural steel and galvanized steel sheets can be procured from the authorized dealers of primary producers as mentioned above if the total requirement of any of reinforcement steel, structural steel and galvanized steel sheets is less than 5 tonnes.

vi. **Schedule of procurement:** The activity for schedule of supply shall be made distinctively/ specifically in the CPM chart. The procurement shall be ensured as per the activity and any hindrance/ lagging shall be brought to the knowledge of the GE.

c. Testing of steel:

i. **Manufacturer's test certificate:** The manufacturer is to carry out inspections and testing of steel in accordance with the relevant BIS provisions. The contractor shall submit the manufacturer's test cer-

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tificate in original along with the test sheet giving the results of each mechanical test and the chemical composition of the steel as applicable or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details for steel in Steel Acceptance Register, as given at Annexure-II to V as applicable after due verification and send a certified true copy of test sheet to GE for his records.

ii. Independent testing:

1. **Steel procured from primary producers:** Independent testing of steel shall be optional at the discretion of GE in case of procurement of steel from primary producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.
2. **Steel procured from secondary producers:** Independent testing of steel shall be mandatory under the scope of contract in case of procurement of steel from secondary producers or BIS marked manufacturers and testing charge shall be borne by the contractor irrespective of the outcome of test results. All facilities (material for sample, transportation of samples to the approved laboratory / test house, getting tests done etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the outcome of test results.
3. **Structural steel (ordinary quality) as per IS 15911: 2010 procured from any producers.** Independent testing of steel shall be optional at the discretion of GE in case of procurement of structural steel (ordinary quality) as per IS 15911: 2010 from any producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.
4. **Pre-painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 procured from any producers.** Independent testing of steel shall be optional at the discretion of GE in case of procurement of Pre-painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 procured from any producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.
5. **Steel tube for structural purposes procured from any producers.** Independent testing of steel shall be optional at the discretion of GE in case of procurement of Pre-painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 procured from any producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.
6. **Frequency of testing:** - Frequency of testing to be done by the manufacturer shall be as per the relevant Indian Standards.
7. **Definition of consignment:** The quantity of steel for any individual grade, type, size etc. received under the same paid voucher with the same manufacturing test certificate shall be treated as one and the same consignment. The quantity of steel for any individual grade, type, size etc. received with the same manufacturing test certificate but under the different paid voucher shall be treated as different consignment.
8. **Rejection:** A consignment of steel shall be rejected if it does not comply with any of the requirements of the relevant IS established through both the manufacturer's test certificate and the independent testing.
- d. **Storage:** All steel shall be stacked above ground level by at least 150 mm. A coat of cement wash shall be given to prevent scaling and rusting. Steels of different classification, sizes and lengths shall be stacked/stored separately. For details IS 4082: 1996 shall be referred. If the GE has any uncertainty regarding the quality of steel to have been deteriorated in the storage to the extent below the acceptable limits as per the relevant IS, he may order for any test/ tests to determine the acceptability of the steel as per the relevant IS. The testing charges shall be borne in accordance with condition 10A of IAFW-2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of

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samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

- e. **Documentation:** The contractor shall submit original purchase vouchers from the manufacturer or authorized dealer as applicable for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by the GE and documents verified before acceptance. The original purchase vouchers and test certificates shall be defaced by the Engineer in Charge and kept on record in the office of the GE duly authenticated and with cross reference to the consignment number recorded in the steel acceptance register. The steel acceptance register will be signed by the JE, the Engineer in Charge, the GE and the contractor. The entire quantity of steel items shall also be suitably recorded in the measurement book for record purposes as "Not to be abstracted" before incorporation in the work and shall be signed by the Engineer in Charge and the contractor. The Accepting Officer may order a Board of Officers for random check of steel and verification of connected documents.
- f. **MEASUREMENTS OF STEEL AND PAYMENT OF ADVANCE ON ACCOUNT OF STEEL (REFER CONDITION 64 OF IAFW 2249)**
- i. The payment of advance on account of steel as per condition 64 of IAFW-2249 shall only be allowed after production of original purchase vouchers, certified copies of test certificates from the manufacturer for each consignment and reports of independent testing if applicable.
- ii. The mass of steel shall be calculated on the basis that steel weighs 7.85 g/cm³.
- iii. The nominal mass conversion factor for various steel sections/size of finished bars as given in the relevant IS codes shall be considered for measurement.
- iv. The sampling to check nominal dimension or nominal mass shall be as per the relevant IS.

45 SANITATION AND PLUMBING

- (a) All sanitary fittings shall be white glazed/coloured vitreous china first quality with ISI markings as described in Sch 'A' and as specified.
- (b) **SQUAT PATTERN WATER CLOSET ORISSA TYPE** : Squat pattern water closet Orissa type shall be of size 580mmx440mm with 'P' or 'S' trap. White and shall interalia include the following :-
- (i) 32mm dia PVC flush pipe of required length including all fittings and connected to WC as per manufacturer's instructions.
- (ii) 10 litres capacity ceramic white/coloured high level flushing cistern with certifications mark IS 774 or PVC high level flushing cistern conforming to IS 7231 as indicated in schedule 'A' complete with internal fittings and necessary fixing arrangement and fixing to wall.
- (iii) WC pan and trap shall be set in cement concrete (1:5:10) all as specified in Schedule 'A' and as directed by Engineer-in-Charge and finished just below the level of rim of pan to receive the specified thickness of floor finishes. The joints between pan and soil pipe shall be as directed by Engineer- in-Charge.
- (d) **NAHANI TRAP** : Cast iron nahani traps shall conform to the sample kept in the sample room or superior. Nahani traps shall be not less than 5.5 Kg and 6.5 Kg for traps with outlet dia of 50mm and 75 mm respectively. Nahani traps shall be provided with cast iron grating.
- (e) **PVC AUTOMATIC FLUSH CISTERN**
Automatic flushing cistern shall conform to IS 2326-1987. High/low level automatic flushing cistern 10 lits capacity PVC shall be provided and shall include connecting up inlets and outlets etc all as directed by Engineer-in-Charge including pair of CI brackets. All working parts shall operate smoothly and efficiently.
- (f) **PVC PIPES & FITTINGS:** PVC pipes of sizes as indicated shall conform to IS 4985 (4 Kg/cm²). PVC (SWR) fitting shall be provided as per recommendations of the manufacturer of the pipes. Laying and jointing of the pipe shall be all as specified in MES Schedule.
- (n) **RCC HUME PIPE** : Reinforced concrete pipe for drains shall be non-pressure class NP-2 as indicated & shall conform to IS-458 of 1971. The ends concrete pipe shall be capable of with standing the same pressure as the pipes. The concrete pipes shall be straight & free from cracks, excepting craze cracks. The ends of the pipes shall be square with their longitudinal axis so that when placed in a straight line in the trench, no opening between ends in contact shall exceed 3 mm in pipes upto 600 mm dia & 6 mm in pipes greater than 600 mm in dia. The pipes shall be free from defects resulting from imperfect grading of the aggregate. Pipes shall be free

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from local dents or bulges greater than 3mm in depth & extending over a length in any direction greater than twice the thickness of barrel.

(o) **GULLY TRAPS:**

Gully traps shall be stone ware with grating conforming to IS – 651-1992. Size of gully trap shall be as indicated in Sch 'A' shall be all as specified in Clause No. 18.28 of MES Schedule Part-I

30.0 **CLEANING OF SEPTIC TANK AND SEWAGE LINE** :- Cleaning of septic tank and sewage line shall be carried out as described in BOQ.

46 INTERNAL ELECTRIFICATION**46.1. GENERAL**

(a) The materials, workmanship and the installation as a whole will generally be governed by specifications, and rules and the principles laid down in MES Schedule Part I Section 19, Specifications given here under are in amplification and modifications, the specifications given here under will take precedence.

(b) Items of electrical work shall be deemed to include interalia minor items to make the installations in the building complete in all respects, duly tested and certified as fit for switching electric supply on the taking in side the buildings.

(c) Due regard be given for the door and windows, openings, location of water taps, locations of sinks etc. in fixing the run of cables and positions of fittings and control switches and outlet points.

(d) The installation shall strictly comply with the provisions contained in the latest edition of Indian Electricity Rules and latest edition of the Indian Standard Electrifications as applicable to the work, except where such regulations and rules are modified by the specifications. It shall be of high standard and approved construction used in modern electrical works as regards design as well as workmanship. Complete works shall be suitable in all respects for the type of voltage indicated in the relevant items Sch'A'./BOQ

(e) All electrical works shall be executed by skilled licenced workers, only licenced supervisors and workers will be employed, and the contractor on demand by the Engineer- in-charge shall produce such evidence of qualifications for his workers/supervisors either at the commencement of the work or any time there after.

(f) PVC casing capping/concealed conduits shall be marked on the walls/ structure and approval of the GE obtained in writing before fixing etc as applicable.

(g) All the electrical fittings, accessories, wiring and runs of cable shall be clear of doors, windows, built in cupboards, opening etc.

(h) Looping in system of wiring shall be used through out installation. Connectors may, however be used at the discretion of Engineer-in-charge due to unavoidable practical difficulties.

(j) All metallic items e.g. fan regulator, switch boxes etc are to be properly earthed with 1.50 sqmm copper conductor green colour FRLS PVC insulated cable earth wire.

(k) Separate conduit casing/capping shall be provided for light and power circuit.

47.2 MATERIALS AND SAMPLES : All materials incorporated in the electrical Installations works shall generally be indigenous make conforming to relevant ISS/BSS as applicable. All materials incorporated in the work shall have ISI mark on them before starting the work, the contractor shall produce to GE samples of all materials for his approval and such approved types, make and quality materials shall only be incorporated in the work. One set of sample shall be retained by the GE duly signed by him and the contractor, till the completion and final acceptance of the work.

47.3 SCOPE OF WORK :

Scope of work shall be as described in Sch 'A'(BOQ) and as specified herein below.

47.4 CABLES : Cables or internal wiring for light shall be with copper conductor and shall be of Following type:-

(a) Wiring with PVC insulated single core multi-stranded unsheathed cable upto 1100 volts conforming to IS-694.(All as specified in Schedule 'A').

(b) Cable shall be delivered at site in maker's wrappers etc the seals intact and shall not be installed unless approved by the E-in-Charge. If cable of size specified in Sch 'A' Part I as per relevant IS are not available cable of equivalent size with identical current carrying capacity & with multi strands shall be got approved from GE before incorporation in work without extra cost to the Govt. System of wiring shall

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be as specified in clause 19.102 of MES Schedule, Schedule Part I. Cable for internal wiring for light, power and submain shall

be as specified in clause 19.25 of MES Schedule Part I.

47.5 **PVC CASING AND CAPPING** :- Provide PVC Casing & Capping wiring all as described in Sch A'. PVC Casing & Capping shall be rigid PVC conforming to relevant IS and shall be ISI marked. PVC casing shall be screwed to wall/soffit of roof slab using mild steel chromium plated screws and rawl plugs. PVC casing & capping shall be adequate size to draw required No of cables.

47.5.1 System of wiring: Wiring shall be carried out with PVC insulated cable and shall run as far as possible on walls, ceiling so as to be easily accessible and capable of being inspected. Power wiring shall be kept apart at minimum distance of 2mm unless they are enclosed in earthed metal conduit suitably marked to indicate the risk of dangerous shock due to voltage in conductor.

47.5.2 **PLUG, SCREWS AND FASTENINGS** All as specified in clause 19.30 and 19.31 of MES Schedule Part I.

47.5.3 **SUNK TYPE BOXES**. These shall be of cast iron pressed steel conforming to IS-5133 (Part I) and as specified in clause 19.38 of MES Sch.

47.5.4 **CEILING ROSE** These shall be as specified in Clause 19.32 of MES Schedule.

47.5.5 **LIGHT FITTINGS** These shall be as specified in Schedule 'A' and as specified in Clause 19.35 of MES Schedule

47.5.5.1 LED light fitting :

LED light fittings and accessories shall be provided all as specified in BOQ

47.5.6 **PAINTING**: Unless otherwise specified all exposed surface of steel works like terminal boxes LT panel board MS clamps etc shall be painted with 2 coats of synthetic enamel paint over a coat of red oxide primer. Metallic suspenders of tube light fittings shall be black painted.

47.6 CONTROL GEAR

(a) Control gear as far as it is related to internal electrical work in building comprises of :-

(i) Distribution Board : Distribution board MCB/TPNL/SPNL, 415/240 volts of ways as described in Sch 'A' shall be provided flush with walls. The sheet metal enclosures shall be factory fabricated of the same manufacturer.

(ii) Miniature circuit breaker (MCB's) of ratings as mentioned in BOQ shall be provided in MSB / SMB's in all the buildings. The MCB shall have breaking capacity all as specified in BOQ. The MCB's shall have ISI mark on them.

47.7 EARTHING

(a) Earthing shall be all as per ISS, IEE Regulations. The contractor shall obtain the approval of GE for layout of earthing before the commencement of work and the same shall be executed in the presence of concerned Executive.

(b) Earthing shall be provided all as described in respective item as specified in BOQ and as shown in Electrical Plate and specified in clause Nos. 19.13.7 and 19.13.7.2 to 19.14.5 of MES Sch Part I.

(c) The charcoal dust and returning, filling shall be done in layers not exceeding 150 mm thick and shall be properly watered and rammed. Surplus soil shall be disposed off and site left clear and tidy on completion to a distance not exceeding 50 m.

(d) All earth electrodes shall be tested for earth resistance by means of standard earth meggar. The test shall take place in months preferably after a protracted dry spell.

(e) The resistance of earth shall not exceed one ohm. In case the resistance of earth exceeds one ohm due to soil conditions, then the earthing shall be carried out through another method as per IS- 3043.

(f) Earth mat shall be provided to ensure absolute protection to the men working at places where isolators and switches are to be operated manually.

(g) Cost of excavation and earth work in any strata shall be deemed to be included in the unit rate quoted for earthing.

47.8 TESTING OF ELECTRICAL INSTALLATION

(a) All the electrical installation shall be tested by the contractor in presence of Engineer-in-Charge as specified in MES Schedule Part-I. Test results shall be recorded duly signed by the contractor and Engineer-in-Charge of the following:-

(i) Earth test

(ii) Continuity test

(iii) Insulating resistance test

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- (a) The installation shall be taken over only when the Engineer-in-Charge has ensured that the installation has been certified as per the laid down rules of the Indian Electricity Act and IE rules.

47.9 **MCB / MCCB**: - This shall be all as per Sch 'A' and as specified in clause 19.46 of SSR Part-I.

47.10 **DISTRIBUTION BOARD, ENCLOSURE FOR MCB/ISOLATORS** :-These shall be confirming to IS-13032,IS-8623 and shall be of same make as MCB and isolators. These shall be factory fabricated made of special grade CRCA (Cold rolled cold Annealed) sheet not less than 1.2 mm thick using polyester and polyester resin based powder paints and shall provision for fixing the MCB's, isolators, and common neutral bar and earth dolly with nickel plated brass screw. The enclosure shall have suitable size knock out holes at top and bottom for entry of cable.

Minimum ingress protection shall be IP 20. Label indication shall be provided over all incoming and outgoing circuits.

47.11 **PAID VOUCHERS AND TEST CERTIFICATES**:

Paid vouchers and test certificates as applicable for all items to be produced by the contractor under his letter and duly signed by him giving cheque No with date under which payment made before claiming payment for items. Genuineness of paid vouchers and test certificate will be checked by Engineer-in-Charge before completion of work by method as suitable for major items. Decision of GE regarding major items shall be final and binding. No claim on account of these provisions shall be admissible.

48. LIST OF BUILDINGS : The Engineer-in-charge shall order the work in the following buildings or may order the work in other buildings also. The contractor shall have no claim whatsoever in change in list of buildings.

49. TAKING DOWN/DEMOLITION/ DISMANTLING

49.1 Materials obtained from taking down/ demolition /dismantling etc listed in credit schedule shall be the contractor's property. The contractor shall store the materials to be incorporated in the work away from the boundary of building/Location in which the work shall commence and the materials obtained from demolition/ demolishing shall be removed from the building/Location daily before closing the work. The contractor shall not be allowed to remove the credit materials shown in Sch 'A' from the site of work unless the credit amount is deducted from payment of RAR. Further recovery of old retrieved materials at the Rates fixed in credit schedule shall be made from the respective RAR's (Advance payment) even if the material has not been removed from site.

50.0 POINT WIRING

50.1 A point (other than socket outlet point) shall include all work necessary in complete wiring to the following outlets from the controlling switch or MCB. The scope of wiring for a point shall however, include the wiring work necessary in tapping from another point in the same distribution circuit.

(a) Ceiling rose or connector (in the case of points for ceiling/ exhaust fan points, prewired light and call bells)

(b) Ceiling rose.

(c) Back plate.

NOTE: In case of call bell points, the words "controlling switch or MCB" shall be read as "from the ceiling rose

meant for connection to bell push".

50.2 Following shall be deemed to be included in point wiring.

(a) Supplying and fixing/ drawing of cables including connections.

(b) Metal switch boxes for control switches, regulators, sockets etc. recessed or surface type,

(c) Laminated sheet covers over the same for piano type switches.

(d) Modular covers over the same for modular type switches and MCBs.

(e) Supplying and fixing all accessories such as screws, clips, plugs, clamps etc. as specified for securing, cables, battens, conduits etc. to walls, steel joists etc.

(g) Supplying and fixing of bushed conduit or porcelain tubing for wiring to pass through walls, floors, etc.

(h) Supplying and fixing of joint and Augction boxes.

(i) Control switch piano type, modular type, MCB as specified in the Sch „A“.

(j) Cutting holes in or through walls, taking up and re-fixing floor boards, notching or drilling holes thorough

joists and making good all disturbed work to match the existing.

(k) Shellac varnishing as specified to wood battens, wood blocks and other wood fittings and fixtures.

(l) Pointing of battens and cables or surface conduits along with painting of walls.

(m) Testing as specified.

(n) The rates for wiring includes for:-

(i) Cutting chases for conduits and sinking"s for boxes and making good to walls; floors etc. in case of

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recessed or concealed conduit wiring.

(ii) Supplying and fixing terminal boxes for power plugs, fan regulators, Switches, socket outlet etc., fixed flush to the walls, as specified for surface wiring on wood battens.

50.3 MEASUREMENT**(a) POINT WIRING (OTHER THAN SOCKET OUTLET POINT)**

(i) Unless otherwise specified there shall be no linear measurement for point wiring, light points, fan points, exhaust fan points & call bell points. These shall be measured on unit bases by counting.

(ii) No separate measurement shall be made for interconnections between points in the same distribution circuits & for the circuit protective (loop earthing) conductors between metallic switch boxes.

(b) POINT WIRING FOR SOCKET OUTLET POINTS

(i) The light plug 5A/ 6A & power plug 15A/ 16A points wiring shall be measured on linear basis/ on unit bases by counting, as per SCHEDULE „A“, from the respective tapping point of live cable viz switch box, another socket outlet points, or the sub distribution board as the case may be up to the socket outlet. The metal box with cover, switch/ MCB, socket outlet & other accessories shall be measured and paid as a separate item.

(ii) The power point outlet may be 15A/ 15A or 16A/ 16A six/ three pin socket outlet, where so specified in the tender documents.

(c) GROUP CONTROL/ LOOP POINTS WIRING

(i) In the case of points with more than one point controlled by the same switch, the same point shall be measured in parts i.e. (a) from the switch to the first point outlet as one point and (b) for the subsequent points, shall be treated as separate point(s).

(ii) No recovery shall be made for non provision of more than one switch/ MCB.

(d) TWIN CONTROL LIGHT POINTS WIRING

(i) A light point controlled by 2 Nos. of two way switches shall be measured as two separate points from the fitting to switches on either side.

(ii) No recovery shall be made for non provision of more than one ceiling rose or connector in such cases.

(e) MULTIPLE CONTROLLED CALL BELL POINTS

(i) In the case of call bell with a single call bell outlet, controlled from more than one place, the points shall be measured in parts i.e. (a) from the call bell outlet to the nearest ceiling rose meant for connection to bell push treated as one point and (b) from that ceiling rose to the subsequent points, shall be treated as separate point(s).

(ii) No recovery shall be made for non provision of more than one ceiling rose connector for connection to call bell in such cases.

50.4 PVC insulated copper conductor cable as mentioned in Schedule shall be run in the conduit as continuous earthing and connected to all light fittings, ceiling fans, socket points and regulators. The cost of the same shall be deemed to be included in the unit rates of point wiring.

50.5 OUTLET BOXES

The switch box shall be made of metal on all side except on the front. In the case of cast iron boxes, wall

thickness shall be at least 3 mm and in case of welded mild steel/ G.I. boxes the wall thickness shall not be less than 2 mm for boxes upto a size of 20 x 30 cm and above this size 2 mm M.S. boxes shall be used. Clear depth of the box shall not be less than 50 mm and this shall be increased suitable to accommodate mounting of fan regulators in flush pattern. All fitting shall be fitted in flush pattern. Outlet boxes shall be suitable for light & power accessories as specified elsewhere. Cost of outlet boxes, modular cover plates (for modular switches/ sockets & MCB points) & laminated sheets (for piano type switch/ sockets) shall deemed to be included in the rate of points wiring. In case of piano type switches 3 mm thick laminated sheet shall be fixed on the front with brass screws.

51. PANEL BOARD :-

(a) Panel offered shall be suitable for trouble free and efficient service and suitable for tropical humid climate with an ambient temperature of 45 deg C and RH of 100%.

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(b) Each switch gear/MCCB/MCB shall be housed as an individual unit in a not less than 1.6mm thick sheet steel housing having the bus bars, current transformer etc. On the top side control termination shall be accessible and from the front side, outgoing bus bars shall be accessible. Removable lift off type hinge panel doors shall be on the read side.

(c) The bus bar entries from one panel to another panel shall be seals off suitably by providing insulated panels so that fire does not spread from one panel to the other panel. Panels shall be self contained, including the GI grid resistance mounted in or mounted on the top of the panel to dissipate heat. Indicating instruments, collector and selector switches, indicating lamps shall be accessible on the door and be adequately protected from the safety point.

(d) All bus bars and current carrying connection shall have the same cross-sectional area throughout their length. Provision shall be made for adjustment for changing in lengths of bus bars and connection due to changes in temperatures.

(e) Where the bus bars are taken through the partitions of cubicle, sealing shall be provided to prevent spread of fire from one unit to next. Bus bars and connections shall be secured in such manner that insulators are not subjected to bending forces under short circuit conditions.

(f) All bus bars and connections shall be capable to withstand the maximum permissible short circuit current.

(g) Single line diagram and drawings of the panel board shall be got approved from GE well in advance.

(h) Indicating lamps, power contactors etc shall be as specified in Sch 'A'

51.1 Each unit shall be constructed to endure satisfactory electrical continuity between all metal parts not intended to be alive and the earth terminal of the unit.

(a) Ventilation it shall be properly verification by providing suitable fans inside the panel

(b) LT Panel control to protect from lizard, misc vermin's or any other creeping insects, panel opening shall be protected with proper screens.

51.2 LT panel boards shall have protection class minimum IP 43 (indoor) & IP 54 (Outdoor type) and as specified in Sch 'A'

51.3 Contractor shall furnish complete details / literature pertaining to the CPRI approved manufacturer before seeking approval of this office.

52. STEEL TUBULAR POLES

(a) Poles to be used in the work shall be of sizes as mentioned in Schedule 'A' the pole shall conform to IS-2713 (Part-II) (Revised). Necessary test certificate is to be furnished by the tenderer .

(b) The poles should be swaged type and shall be made of tubes of suitable length, swaged together when hot and may be either electrically welded or seamless. The poles shall be well finished, clear and clean from harmful defects; ends of poles shall be cut square. They shall be straight smooth and cylindrical of the designations as mentioned in Sch 'A'. The bottom of the poles shall be run welded continuously with 30cm x 30cm x 6mm thick MS base plated and top of the poles shall be painted with two coats of approved aluminium paint over a coat of red oxide primer on exposed portion (One coat before erection and the other after erection) portion requiring to be embedded in PCC/excavation shall be painted with two coats of approved bituminous paint over on coat of approved red oxide paint.

(c) All the poles while erecting shall be kept in truly vertical position in the pit till the PCC foundation is laid and set properly. All strut, poles shall after lowering in the pit be fixed to the main pole with MS clamps bolts, nuts and washers and concrete shall be laid after fixing the strut / poles in position. The entire work of erection of poles shall be carried out in accordance with IS -5613(Part-II. Code of practice for design, installation and maintenance of overhead power line

(d) Tensile strength of the poles shall not be less than 42 Kg/Sq cm.

53. UNDER GROUND CABLES/ HT CABLES XLPE

53.1 The depth of trench for the purpose of excavation in trenches shall comply to clause 19.74.1 of SSR Part-I. The depth of the trench as specified there in may however be altered to suit site

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condition. The width of the trench shall be authorized width as specified in clause 3.2.3 of SSR Part-II (2020).

- 53.2 The method of laying cable shall be as specified in clause 19.75 of SSR Part-I. The PCC cable covers shall be laid on the sand cushion.
- 53.3 Excavation and earthwork shall be measured and paid for separately under relevant items of Schedule 'A'/BOQ.

54. WATER PROOFING TREATMENT TO RCC ROOF SLABS & SUNKEN FLOOR TREATMENT:

- a. Water proofing treatment to RCC roof slab including roof projection, gutters shall be provided all as specified here-in-after.
- b. The APP modified bituminous water proofing membrane with polyester reinforcement and plain/ mineral finish as indicated in schedule "A" shall be used for the water proofing treatment.
- c. The requirement of non-woven polyester mat reinforcement shall be as under:

Sl No.	Characteristics (2)	Requirement for membrane 3 mm & above	Method of Test, Reference
1	2	3	4
1.	Weight, grams per sqm	160 ± 15%	ISO 9073 Part 1
2.	Tensile Strength, N/5 cm, Longitudinal	550 ± 10%	ISO 9073 Part 3
	Transverse	300 ± 10%	
3.	Elongation, % Longitudinal	30 ± 10%	ISO 9073 Part 3
	Transverse	30 10%	

- d. **Bitumen:** Straight grade bitumen shall be used and polymerized with adequate quantity of polymer to achieve the complete phase inversion.
- e. **Mineral Filler:** It shall consist of finely divided suitable inert mineral matter which passes through 75 microns IS sieve [See IS 460 (Part 1)]. The proportion of mineral inert filler will depend upon the type and the weight of membrane manufactured, but shall not exceed 50 percent by weight of the coating material.
- f. **Finishing Material:** APP membrane polyester plain finish shall be finished both side with 10 to 15 micron thick thermo fusible polyethylene. APP membrane polyester mineral finish shall be finished lower side with 10 to 15 micron thermo fusible polyethylene and upper face finished with mineral granule
- g. APP membrane shall be procured in standard width of 1 m and of suitable length to minimize the number of joints.

i. APP membrane when tested in accordance with the appropriate tests as mentioned below shall conform to the requirements as given below: -

Sl No.	Test	Requirement for plain membrane	Requirement for plain membrane	Unit	Test method
1	2	3	3	4	5
1.	Thickness of membrane including finish	± 5% or max ±0.2 mm	± 5% or max ±0.2 mm	mm	Measurement
2.	Cold Flexibility, °C	Does not crack at 2 ^o C	Does not crack at 2 ^o C	°C	IS: 13826 Part 2
3.	Softening Point	≥ 150 ^o C	≥ 150 ^o C	°C	IS 1205
4.	Tensile Strength Longitudinal	650 ± 20%	650 ± 20%	N/ 5 cm @ 23 ^o C	IS: 13826 Part 1
	Transverse	400 ± 20%	400 ± 20%	N/ 5 cm @ 23 ^o C	
5.	Elongation Longitudinal	40 ± 15%	30 ± 15%	%	IS: 13826 Part 1
	Transverse	35 ± 15%	25 ± 15%	%	
6.	Tear Strength Longitudinal	500, min	500, min	N	ISO 9073 Part 4

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7.	Transverse Heat resistance	300, min No flow	300, min No flow	N 120 ^o C 2 hour s dmm	IS: 13826 Part 5
8.	Penetration @ 25° C, 100 g, 5 sec	15 ± 5	15 ± 5		IS 1203
9.	Water absorption	0.2 Max	Not applicable	%	IS: 13826 Part 6
10.	Dimension stability				Measurement
	Longitudinal	± 0.5	± 0.5	%	
	Transverse	± 0.5	± 0.5	%	

ii. APP membrane as specified hereinbefore shall be procured from the following manufacturers: -

- (a) M/s Texsa India Ltd., Gurgaon (HR)
- (b) M/S Tiki Asphalt Ltd., Mumbai
- (c) M/s Shalimar Tar Products, Gurgaon (HR)
- (d) M/s IWL India Ltd., Chennai
- (e) M/s Hydro Tech Ltd, Hyderabad (AP)
- (f) M/s Percept Engineers Pvt. Ltd., Kochi.

iii. Contractor shall submit the original purchase voucher and the test certificate of the manufacturer correlating the date of manufacturer and batch number. The test certificate shall indicate all the parameters of polyester and APP membrane as mentioned hereinbefore. The membrane shall contain the name of manufacturer logo and sticker (which should specify the same and the details of original product) which will be verified by the GE before incorporation in the work. The firms imparting the membrane and rebranding with their own name should invariably intimate the name and documentary evidence of original product etc. while seeking approval.

iv. GE shall carry out independent testing of the material from NABL Laboratories as national test house, SEMT wing CME, regional research laboratories IITs, MES zonal laboratories, government engineering college and national institutes of technology as per relevant BIS. Independent testing of APP membrane shall be mandatory under the scope of contract and the testing charge shall be borne by the contractor irrespective of the outcome of test results. All facilities (material for sample, transportation of samples to the approved laboratory / test house, getting tests done etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the outcome of test results.

v. **Rejection:** A consignment of APP membrane shall be rejected if it does not comply with any of the requirements as mentioned hereinbefore established through both the manufacturer's test certificate and the independent testing.

vi. All water proofing work using APP membrane shall be carried out through manufacturer or their authorized applicator or respective manufacturers only & record to that effect shall be maintained. Contractor shall produce valid certificate from respective manufacturer regarding authentication & adequate experience of applicator. GE should verify correctness of material, manufacturer & applicator, contractor intend to engage in the work. Each stage of treatment shall be approved by the GE in writing to ensure full-proof of the treatment.

vii. The overlap for APP membrane shall be 75 mm on longitudinal direction and 100 mm on transverse direction.

h. At the Augction of parapet and RCC roof, PCC benching in M15 (Nominal Mix) using 12.5 mm nominal size crushed stone aggregate shall be provided to drain of rain water before laying water proofing treatment over the roof slab. The water proofing treatment shall be extended upto a full height and width of parapet/curb wall. APP membrane shall be adequately grooved at the end into the wall for preventing in grace of water.

i. Water proofing membrane shall be laid as specified in clause 11.44.5 of SSR Part-I: 2009.

j. The main Contractor shall furnish guarantee to the government for a period of TEN years from the date of taking over the completed building for the efficiency & effectiveness of the treatment carried out. The main contractor shall furnish a written guarantee in favour of GE on a non-judicial stamp paper of value ` 100/- along with a guarantee certificate from manufacturer in favour of Garrison Engineer immediately on completion of the work.

k. For this particular contract guarantee amount calculated as applicable to individual security deposit on the amount of water proofing treatment and sunken portion of water proofing work at contract rates subject to minimum of **Rs.5000/- respectively**. This amount shall be retained by the Govt as Security Deposit for the entire guarantee period from the contractor's dues. The amount shall be released after successful expiry of the

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guarantee period. The amount so withheld shall not carry any interest. The contractor may however, furnish a fixed deposit receipt in lieu, from a Nationalised or Schedule Bank pledged in favour of Garrison Engineer.

- l.** The Security Deposit referred to in Condition 22 of General Conditions of contract IAFW-2249 is independent of the Guarantee amount referred herein before. Condition 46 and 68 of the General Condition of contract (IAFW-2249) shall be deemed to be amended to the extent mentioned above.
- m.** Should the GE at any time, during the construction or prior to the expiry of said guarantee period of 10 years, find that the buildings have been found leaking the contractor, on demand in writing from the GE, will forthwith under take to carry out such repairs/rectification to the entire satisfaction of the GE.
- n.** In the event of Contractor's failure to comply with the GE's directions within the stipulated period, the work shall be carried out at the risk and cost of the contractor. The liability of the contractor under this condition shall not however, be extended beyond the period of 10 years from the date of completion, unless the notice was served to the contractor previously to rectify such defects.

o. Bituminous aluminium paint:

i. Bituminous aluminium paint shall be bituminous based solvent and aluminium pigmented finish coat paint. The specific gravity shall be 1 ± 0.05 .

ii. Rate of spray shall be 0.125 litre/ sqm uniformly on a surface.

iii. Bituminous aluminium paint shall be procured from the following manufacturers.

- (g) M/s Texsa India Ltd., Gurgaon (HR)
- (h) M/S Tiki Asphalt Ltd., Mumbai
- (i) M/s Shalimar Tar Products, Gurgaon (HR)
- (j) M/s IWL India Ltd., Chennai
- (k) M/s Hydro Tech Ltd, Hyderabad (AP)
- (l) M/s Percept Engineers Pvt. Ltd., Kochi.
- (m) M/s Jenson Nicholson
- (n) M/s Asian paints
- (o) M/s Berger Paints Ltd
- (p) Shalimar Paints Ltd

iv. Bituminous aluminium paint shall be applied as per a manufacturer's instructions."

- p.** The contractor shall provide a plaster plate of requisite size in location as decided by the Engineer-in-Charge on the wall of each of the building. The plate shall be 10 mm thick in cement mortar (1:4) to indicate the details such as water proofing treatment done vide CA No, date of expiry of guarantee period and name of contractor by engraving and printing (black). The cost of plaster plates is deemed to be included in the rated quoted by the tenderer.

GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS.

This agreement made this _____ day of _____ two thousand _____ between _____ (son of _____) (hereinafter called guarantor on the one part) and the PRESIDENT OF INDIA (hereinafter called the Government on 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 GOVERNMENT on the other part where by the contractor interalia, undertook render the buildings and structures in the said contract recited completely water and leak proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to effect that the said structures will remain water leak proof for ten years from the certified date of completion.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given 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 certified date of completion. Provided that the guarantor will not be responsible for leakages caused by earthquakes or structural defects or misuse of roof and sunken floor slabs or alterations and for such purpose.

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- a) Misuse of and sunken floor slabs shall mean by operation which will damage roofing treatment, like chopping of firewood and things of the same nature which might cause damage to the roof.
- b) Alteration shall mean construction of any additional storey or any part of roof or construction adjoining to existing roof, where by roofing treatment is removed in parts. And removal of finishes of sunken portion of slabs.
- c) The decision of the Garrison Engineer with regard to cause of leakage shall be final and binding.

During this period of guarantee the guarantor shall make good all defects and in case of any defects being found, render the building water proof and finish the disturbed surfaces as existed to the satisfaction of Garrison Engineer at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Garrison Engineer 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 risk and cost. The decision of the Garrison Engineer as to the cost, payable by the Guarantor shall be final and binding.

That if the Guarantor fails to execute the water proofing or commit breach there under then the Guarantor will indemnify the Principal and his successors against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of GUARANTOR in performance and observing of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Government, the decision of the Garrison Engineer will be final and binding on the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator _____ and by _____ for and ON BEHALF OF THE PRESIDENT OF INDIA on the day month and year first above written.

SIGNED sealed and delivered by OBLIGATOR in the presence of: -

- 1.
- 2.

Appendix 'A' to Particular Specification**1. CEMENT**

1.1. GENERAL: Cement required for the work under the contract shall be procured, supplied and incorporated in the works by the contractor under his own arrangement. Cement shall comply with the requirements mentioned in the drawings, SSR, IS Specifications as amended and particular specifications given hereinafter.

1.2. Type of cement for the subject work to be procured and incorporated in work shall be ordinary Portland cement grade 43 in accordance with IS 8112: 2013.

1.3. Procurement, Testing, Rejection, Storage, Documentation & Consumption

1.3.1. Procurement. Cement supplied by the contractor will be procured from the main producers of cement. However, where estimated requirements of cement is less than 300 bags and in all terms contracts, the contractor can procure cement from the authorized distributors/ dealers of the approved firms but the contractor will have to submit test certificate of the batch issued by the main producers. The particulars of the manufacturers of cement along with the date of manufacture shall be obtained from the Contractor for each lot of cement separately. The documents in support of the purchase of cement shall be recorded and verified by the Engineer-in-Charge and the GE.

1.3.2. Schedule of procurement: The activity for schedule of supply shall be made distinctively/ specifically in the CPM chart. The procurement shall be ensured as per the activity and any hindrance/ lagging shall be brought to the knowledge of the GE.

1.3.3. Manufacturers: The followings are the list of producers of cement for the type of cement as mentioned under column "remarks". The cement shall be procured from the manufacturers if they are in the list for the type of cement as specified for the works.

Sl no.	Company	Address	Remarks
1.	M/s Cement Manufacturing Company	Mayur Garden, 2 nd Floor, Opp-Rajuv Bhawan, GS Road, Guwhati-781005, Ph: 0361-2462215/216/513 Fax:	OPC 43, 53 Grade & PPC

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	Ltd	0361-2462217, Email: cmclghy@cml.co.in	
2.	M/s Ultra Tech Cement Ltd	'B' Wing, 2nd Floor, Mahakali Caves Road, Andheri (East), Mumbai-400093, Ph: 022-66917800	PSC
3.	M/s OCL India Ltd	Rajgangpur, Dist-Sundargarh, Orissa, Pin- 770017 Ph: 0361 2668504, Fax: 0361-2662131 Website: www.calcom.co.in	OPC 43 Grade & PPC
4.	M/s Dalmia Cement (Bharat) Ltd	Dalmiapuram Dist-Tiruchirappalli, Tamil Nadu – 621 651	OPC 43 Grade & PPC
5.	M/s Chettinad Cement Corporation Ltd	4 th floor, Rani Seethai Hall Building, 603, Anna Salai Hall, Chennai – 600 006, Tel No. 044-42951800 Fax No. 044-28291558, Email: info@chettinadcement.com Web: www.chettinadcement.com	OPC 43 Grade, PPC & PSC
6.	M/s Heidelberg Cement India Ltd	9 th floor, Infinity Tower 'C', DLF Cyber City, Gurgaon, Haryana-122 002 Ph: 0124-4503700, Fax: 0124-4147698	PPC
7.	M/s My Home Industries Pvt Ltd	9th Floor, Block-3, My Home Hub Madhapur, Hyderabad-500081, Ph-04066929696, Fax: 040-66929797/98	OPC 43 Grade, PPC & PSC
8.	M/s Parasakti Cements Ltd	123/3RT, Plot #8-3-214/21, Srinivasa Nagar Colony (West), Hyderabad-500 038, Tel: 040- 44119100/200 Fax: 040-23747562	OPC-43 Grade& PPC
9.	. M/s Zuari Cement Ltd	No 6 MC Nichols Road, Chetpet Chennai- 600031 Ph: 044-28363958, 28365047	OPC 43 Grade& PPC
10.	M/s Toshali Cements Pvt Ltd	123/3RT, 2 nd floor Sanjeeva Reddy Nagar Hyderabad-500038, Ph : 040-2300675 CORPORATE OFFICE 9-14-13, CBM Compound, Near Mehar Apartment, Visakhapatnam – 530 003	OPC 43 Grade, PPC& PSC
11.	M/s Saifco Cement Pvt Ltd	Opposite post office Batwara, Srinagar-190 004 (J&K), Ph : 0194-2466061	OPC 43 Grade
12.	M/s Prism Cement Ltd	3/113 Vivek Khand Gomto Nagar Lucknow-226010, Ph : 0522-2396847, 2397589	OPC 43 Grade& PPC
13.	M/s Shree Guru Kripa Cement (Pvt) Ltd	4/4 Trikuta Nagar Jammu Ph : 0191-2472043	OPC 43 Grade& PPC
14.	M/s Barak Valley Cements Ltd	Debendra Nagar Badarpur Ghat Dist Karimganj Assam-788803, Ph : 03845- 269258	OPC 43 Grade
15.	M/s Dhruv Industrial Company Ltd	49/27 Sinha Market General Ganj Kanpur-208001	OPC 43 Grade
16.	Ultra Tech Cement	'B' Wing, 2 nd floor Mahakali Caves Road, Andheri (East) Mumbai-400093	OPC 43 Grade& PPC
17.	Madras Cement	Auras Corporate Centre, 98-A, Dr Radhakrishnan Salai Mylapore, Chennai-600 004, Ph : 044-28478666	OPC & PPC
18.	Saurashtra Cement	Gala No A-1, Ground Floor Udhyog Sadan No 3 MIDC, Central Road Andheri (East) Mumbai- 400 093 Ph : 022-32955557/67, Mob : 9320290081	OPC & PPC
19.	Lafrage Cement (Lafarge India Pvt Ltd)	Crescenzo 1004, B-Wing 10th floor C-38/39 G Block Bandra Kurla Complex Bandra (East) Mumbai-400051	OPC & PPC
20.	The Associated Cement Companies Ltd	414-421, Splendor Forum (4th Floor), 3, District Centre, Jasola, New Delhi – 110044, Ph : 011 46583600	OPC & PPC
21.	Grasim Industries Ltd	Birlagram, Nagda, Madhya Pradesh, Pin-456331, Ph : 07366-246760/246766	OPC & PPC
22.	The India Cement	Dhun Building, 287, Anna Salai Chennai – 600002	OPC & PPC

PARTICULAR SPECIFICATIONS

23.	Andhra Cement Ltd	Durga Cement Works, Durgapuram, Dechepalli Guntur Andhrapradesh – 522414 Ph : 0863 257429	OPC & PPC
24.	Century Cements	Industry House, 159 Church Gate, Reclamation, Mumbai- 400020 Ph : 022 22023936	OPC & PPC
25.	Binani Cement Ltd	Mercantile Chambers, 12, JN Heredia Marg, Ballard Estate, Mumbai-400001 Ph : 022 22690506/10	OPC & PPC
26.	Mangalam Cement Ltd	PO Adityanagar, Morak, Dist-Kota, Rajasthan- 326520 Ph : 9351468076	OPC & PPC
27.	Birla Corporation Ltd	Birla Building (3rd & 4th Floor) 9/1, RN Mukherjee Road, Kolkata – 700001 Ph 033-30573700	OPC & PPC
28.	Orient Cement	5-9-22/57/D, 2nd & 3rd Floor, GP Birla Centre, Adarsh Nagar, Hyderabad – 500063 Ph : 044-23688600	OPC & PPC
29.	Shree Cement	Bangur Nagar, Beawar, Dist-Ajmer, Rajasthan- 305901 Ph : 01462 228101-06	OPC & PPC
30.	JK Lakshmi Cement Ltd	Jaykaypuram, Dist-Sirohi, Rajasthan Ph : 02971244409/10	OPC & PPC
31.	Jaypee Rewa Cement		OPC & PPC
32.	Ambuja Cement Ltd	Kodinar, PO-Ambujanagar, Taluka-Kodinar, Dist-Augagadh, Gujarat-362715 Ph : 02795-237000	OPC & PPC
33.	M/s Cement Corporation of India Ltd (For AP & Adjoining states only)	PO-CCI Tandur Dist-Ranga Reddy, Andhra Pradesh- 501158 Ph : 08411-247240	OPC Grade 43

1.3.4. **Testing of cement:** The manufacturer will carry out inspections and testing of cement in accordance with the relevant BIS provisions. The contractor shall submit the manufacturer's test certificate in original along with the test sheet giving the result of each physical test as applicable and chemical composition of cement or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in cement acceptance register, as given at Annexure-I after the verification. The GE shall also organize independent testing of random samples of cement drawn from the various consignments from NABL Laboratories as national test house, SEMT wing CME, regional research laboratories IITs, MES zonal laboratories, government engineering college and national institutes of technology as per relevant BIS and shall be recorded in the respective portion of Annexure-I. Independent testing shall be carried out for the characteristics as mentioned in Table 2 & 3 of IS 8112: 2013 and shall be done as per IS: 4031 (Parts 1 to 15) (Methods of physical tests for hydraulic cement) and IS 4032: 1985 (Methods of chemical analysis of hydraulic cement). The sampling of cement to be tested shall be done as per IS 3535: 1986.

1.3.5. **Definition of consignment:** The quantity of cement received under the same paid voucher with the same manufacturing test certificate shall be treated as one and the same consignment. The quantity of cement received with the same manufacturing test certificate but under the different paid voucher shall be treated as different consignment.

1.3.6. **Rejection:** A consignment of cement shall be rejected if it does not comply with any of the requirements of IS 8112: 2013 established through both the manufacturer's test certificate and the independent testing.

1.3.7. **Testing Charges:** An independent testing of cement shall be mandatory under the scope of the contract and condition 10(A) of IAFW-2249 shall accordingly be applicable. All facilities (material for sample, transportation of samples to the approved laboratory / test house, getting tests done etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the outcome of test results.

1.3.8. **Storage:** Cement shall be stored over dry platform at least 20 cm high in such a manner as to prevent deterioration due to moisture or intrusion of foreign matters. In case of store rooms, the stack should be at least 20 cm away from floors and walls. The stacking of Cement shall not be more than 10 bags high. It shall be ensured that tested and untested cement are segregated and stored separately with distinct identification. Each cement consignment shall be stacked separately and removal shall be made on the basis of 'First In First out'. For details IS 4082: 1996 shall be referred. If the GE has any uncertainty regarding the quality of cement to have been deteriorated in the storage to the extent below the acceptable limits as per the relevant IS, he may order for any test/ tests to determine the acceptability of the cement as per the relevant IS. The testing charges shall be borne in accordance with condi-

PARTICULAR SPECIFICATIONS

tion 10A of IAFW-2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

1.3.9. **Documentation:** The contractor shall submit original vouchers from the manufacturer for the total quantity of cement supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by GE and documents verified before acceptance. The original vouchers and the Test Certificates shall be defaced by the Engineer-in-Charge, signed by contractor and kept on record in the office of the GE duly authenticated and with cross reference to the control Number recorded in cement Acceptance Register. This register will be signed by the JE, the Engineer-in-Charge, the GE and the Contractor. The Accepting Officer may order a Board of Officers for random check of cement and verification of connected documents. The entire quantity of cement shall also be suitably recorded in the measurement book for record purpose as "Not to be abstracted" before incorporation in the work and shall be signed by the Engineer-in-Charge and the Contractor.

1.3.10. **Consumption:** Cement shall be removed from the store only according to daily requirement with the knowledge of both the parties and daily consumption of cement shall be recorded in cement consumption register which shall be signed by the Engineer-in-Charge and the contractor.

1.4. MEASUREMENTS OF CEMENT AND PAYMENT OF ADVANCE ON ACCOUNT OF CEMENT (REFER CONDITION 64 OF IAFW 2249)

1.4.1. The payment of advance on account of cement as per condition 64 of IAFW-2249 shall only be allowed after production of original purchase vouchers, certified copies of test certificates from the manufacturer for each consignment and reports of independent testing. 7 days test report for compressive strength may be considered only for payment of advance.

1.4.2. Cement shall be supplied in a bag and the net quantity of cement per bag shall be 50 kg subject to provisions and tolerance given in Annex B of IS 8112: 2013. The sampling shall be done as mentioned under the said Annex B.

SIGNATURE OF CONTRACTOR**Dated:****AGE Contract
For Accepting Officer**

PARTICULAR SPECIFICATIONS

CEMENT SUPPLY & ACCEPTANCE REGISTER

1. CA No & Name of work
2. Control No. (to be allotted serially by GE consignment wise)
3. Name of manufacturer/brand name/grade of cement (A) Manufacturer..... (B) Brand.....(C) Grade.....
4. Quantity of cement and lot No/ week No (in bags): (A) Quantity.....(B) Lot No/ week No.....
5. Manufacturer's test certificate No
6. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
7. Details of physical and chemical properties

	Physical requirements (As per IS 4031)									Chemical requirements (As per IS 4032)								
	Fineness (m ² / kg)	Soundness by Le Chatelier test method (mm)	Soundness by autoclave test method (percent)	Initial setting time (minutes)	Final setting time (minutes)	Compressive strength (Mpa)			Temperature during testing °C	Standard consistency (%)	Ratio of percentage of lime to percentages of silica, alumina and iron oxide, when calculated by the formula: $CaO - 0.7SO_3$ $2.8SiO_2 + 1.2Al_2O_3 + 0.65Fe_2O_3$	Ratio of percentage of alumina to that of iron oxide	Insoluble residue, percent by mass	Magnesia, percent by mass	Total sulphur content calculated as sulphuric anhydride (SO ₃), percent by mass	Loss on ignition, percent by mass	Chloride content, percent by mass	Alkali content
As per IS	Min 225	Max 10	Max 0.8	Min 30	Max 600	72 hours ± 1 hour Min 23	168 hours ± 2hours Min 33	672 hours ± 4 hours Min 43 Max 58			0.66-1.02	Min 0.66	Max 4.0	Max 6.0	Max 3.5	Max 5.0	Max 0.1	Max 0.6
As per manufacturer's test certificate																		
As per independent test certificate																		

Remarks with signature

Accepted/ rejected

Contractor

Augior Engineer

Engineer-in Charge

Garrison Engineer

PARTICULAR SPECIFICATIONS

STEEL SUPPLY & ACCEPTANCE REGISTER

1. CA No & Name of work
2. Control No. (to be allotted serially by GE consignment wise)
3. Manufacturer's test certificate No
4. Name of manufacturer/brand name/grade of steel (A) Manufacturer..... (B) Brand.....(C) Grade.....
5. Quantity of steel (in kg): (A) Quantity.....
6. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
7. Details of physical and chemical properties

Physical requirements (As per IS 15911)

Chemical requirements (As per IS 15911)

Tensile strength, Mpa

Yield stress, Mpa

Percentage elongation
A at gauge length $L_0 = 5.65 \sqrt{S_0}$, where S_0 is the cross sectional area of the test piece

Internal bend diameter

Carbon

Manganese

Sulphur

Phosphorous

As per IS 15911: 2010

As per manufacturer's test certificate
As per independent test certificate
Remarks with signature

Accepted/ rejected

Contractor

Augior Engineer

Engineer-in Charge

Garrison Engineer

PARTICULAR SPECIFICATIONS

STEEL SUPPLY & ACCEPTANCE REGISTER

1. CA No & Name of work
2. Control No. (to be allotted serially by GE consignment wise)
3. Manufacturer's test certificate No
4. Name of manufacturer/brand name/grade of steel (A) Manufacturer..... (B) Brand..... (C) Grade.....
5. Quantity of steel (in kg): (A) Quantity.....
6. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
7. Details of physical and chemical properties

Physical requirements (As per IS 1786)

Chemical requirements (As per IS 1786)

0.2 percent proof stress/
yield stress, N/mm²

Ratio of tensile strength
and yield stress

Tensile strength N/mm²

Elongation percenton gauge
length $5.65 \bar{A}$, where A is
the cross sectional area of
thetest piece

Total elongation at maxi-
mum force, percenton
gauge length $5.65 \bar{A}$,
where A is the cross sec-
tional area of the test piece

Bend test

Rebend test

Carbon

Sulphur

Phosphorous

Sulphur & phosphorous

As per IS 1786: 2008

As per manufacturer's test
certificate

As per independent test cer-
tificate

Remarks with signature

Contractor

Augior Engineer

Accepted/ rejected
Engineer-in Charge

Garrison Engineer

PARTICULAR SPECIFICATIONS

STEEL SUPPLY & ACCEPTANCE REGISTER

8. CA No & Name of work
9. Control No. (to be allotted serially by GE consignment wise)
10. Manufacturer's test certificate No
11. Name of manufacturer/brand name/grade of steel (A) Manufacturer..... (B) Brand..... (C) Grade.....
12. Quantity of steel (in kg): (A) Quantity.....
13. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
14. Details of physical and chemical properties

Physical requirements (As per IS 2062)

Chemical requirements (As per IS 2062)

Tensile strength, Mpa	Yield stress, Mpa	Percentage elongation A at gauge length $L_0 = 5.65 \sqrt{S_0}$, where S_0 is the cross sectional area of the test piece	Internal bend diameter	Temperature	Charpy impact test Impact energy on a notched test piece	Carbon	Manganese	Sulphur	Phosphorous	Silicon	Carbon equivalent	Mode of deoxidation
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As per IS 2062: 2011

As per manufacturer's test certificate
As per independent test certificate
Remarks with signature

Accepted/ rejected

Contractor

Augior Engineer

Engineer-in Charge

Garrison Engineer

LIST OF MAKES TO BE INCORPORATED IN THE WORK**Appendix 'B' to Particular Specification****LIST OF MAKES:**

List of Makes to be incorporated in the work is given as under.

Sl. No	Name of product	Make / Name of firm		
1	2	3		
1.	Factory made panelled/ gauzed shutters	(a)	M/s Joinery Manufacturing Co. Jaipur	
		(b)	M/s Goel Brothers, Raipur.	
		(c)	M/s. Sarab Enterprises, Pathankot (PB)	
		(d)	M/s Goyal Industrial Corporation New Delhi	
		(e)	M/s Geeta Enterprises, MIDC Waluj, Aurangabad	
		(f)	M/s MP Wood Products, Indore (MP), (M.No. 09827024211)	
		(g)	M/s Indian Timber Products (P) Ltd, Hyderabad	
		(h)	M/s Pioneer Timber Products, Chandigarh.	
		(i)	M/s A- 1 Teak Product (Mob No 9827030092)	
		(j)	M/s Jain Builders	
2.	Steel windows/ventilators (flash butt welded)/ Press steel frame (Remarks: Name of manufactures who do not manufacture steel windows with flash butt welding shall be treated as deleted.)	(a)	M/s Sen Harvic, Bombay	
		(b)	M/s Agew Steel Manufacturing Industries, Ahmedabad	
		(c)	M/s Godrej & Boyce Steel Manufacturing, Bombay	
		(d)	M/s Anant Industries, Ahmednagar	
		(e)	M/s Shiv Mular, Ahmedabad	
		(f)	M/s Steel Plast Machines, Ahmedabad	
3.	PVC doors/window	(a)	M/s Poly windows - Pune	
		(b)	M/s Rajshree Plastwood Ltd	
		(c)	M/s Sintex	
		(d)	Janik Developers Pvt Ltd for "Elegence FRP DOORS, FRAMES, WINDOWS & Ventilators"	
		(e)	M/s Ashish Plast	
4.	Flush Shutters	(a)	M/s Kalpataru	
		(b)	M/s Green Leaf	
		(c)	M/s A- 1 Teak Products (Mob No 9827030092)	
5.	FRP Doors/Windows	(a)	M/s Advance FRP, Mumbai	
		(b)	M/s Syntax Industries Ltd.	
		(c)	M/s Titan Enterprises.	
		(d)	M/s Delux Poly FAB Pvt Ltd.	
6.	Stainless steel/GI Powder coated puff filled doors	(a)	M/s Diamond Steel flush doors	
		(b)	M/s Basic Arch Products Pvt Ltd, Pune	
7.	Steel Rolling Shutters/grills & collapsible gates.	(a)	M/s. Darshan Rolling Shutters Panchavati Nasik.	
		(b)	M/s. Swastik Rolling Shutters Bombay	
		(c)	M/s Prakash & Co New Delhi	
8.	Water proofing compound	(a)	Scott No. 1	
		(b)	Pidilite	
		(c)	ARGUS	
9.	Hydraulic door closer	(a)	Everite	(b) Dyana
		(c)	Hardwin	(d) Prabhat door King (Delhi)
		(e)	Universal	(f) Ranjan
		(g)	Kelin	(h) Perfect Hydraulic Pvt. Ltd
ROOF AND PARTITION				
10.	Plain or trapezoidal shaped galvalume sheet	(a)	M/s Roof India Ltd (CRIL) Khopoli Dist Raigadh (MH)	
		(b)	M/s Tracdek Colours, B- 30, Sector 57 Noida, Delhi	
		(c)	TATA	
		(d)	ISI marked	
11.	AC Plain Sheets/ Corrugated Sheets	(a)	Charminar	
		(b)	Everest	
		(c)	UP Asbestos	
		(d)	Rohtas Industries	
		(e)	Swastik	
		(f)	Kangaroo	
12.	PGI Sheet/CGI Sheet	(a)	TATA	
		(b)	Jindal	
		(c)	M/s National Steel & Agro Industries Ltd. Indore(MP)	
13.	Laminated Sheets.	(a)	Sungloss	(b) Formica
		(c)	Sunmica	
14.	Plywood	(a)	Kitply	(b) Tower
		(c)	Archid	
		(d)	Green ply	(e) Century
15.	Aluminium sections	(a)	Jindal Aluminium Ltd	
		(b)	Indal	
		(c)	Hindalco	
16.	Prelaminated Particle Boards / veneered Particle board.	(a)	Novopan	(b) Kitlam
		(c)	Anchorlam	
		(d)	Bhutan Board	(e) ASIS
		(f)	Eco Board	
17.	Building Board/ Gypsum Board	(a)	Anchor Bombay	(b) Indian Plywood
		(c)	Mangalam Timber Products	(d) Gypsum Board
18.	Block board	(a)	Charminar	(b) Lotus
		(c)	Swastik	
19.	Putty	(a)	Golden Mohar	
FLOOR/CEILING TILES				
20.	Ceramic Tiles (Group BIII and B II)	(a)	Orient -Bell Limited	(b) Euro
		(c)	Nitco	(d) Somany Pilkington
		(e)	Asian Tiles	(f) H & R Johnson
		(g)	KAJARIA	(h) Naveen Tiles

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm			
1	2	3			
21.	Vitrified tiles / Porcelain tile (Group B Ia and B Ib)	(a) Orient -Bell Limited	(b) Euro		
		(c) Nitco	(d) KAJARIA		
		(e) Asian Tiles	(f) H & R Johnson		
		(g) SOGO	(h) Naveen Tiles		
		(i) Somany Pilkington	(j) Western Marbo Mumbai		
22.	Mangalore tiles	(a) Charminar	(b) Raja Tiles	(c) Recho	(d) Prajapat
23.	Cement / Terrazzo Tiles (Plain/chequered)	(a) NITCO			
		(b) Ceme Tile			
		(c) Mehtab Tiles, Rani Shopping Cente, Bhanwar Kuan Main Road, Indore (MP)-452006			
		(d) M/s SWAMI Tiles			
		(e) M/s Ultra tiles			
		(f) Topaz tiles			
		(g) Renuka Tiles			
		(h) M/s Shree Tiles, F-6, MIDC Nagar, Manmad Road , Ahmednagar (Maharashtra)			
24.	Stainless steel sink / Kitchen Sink	(a) Blue Star of Anupam Industries	(b) Nirali	(c) Diamond	
25.	Inter locking concrete tiles	(a) M/s ULTRA Tiles Pvt Ltd			
		(b) Mehtab Tiles, Rani Shopping Cente, BhanwarKuan Main Road, Indore (MP)-452006			
		(c) M/s Topaz Tiles Pvt			
26.	Ceiling Tiles	(a) M/s. Anchor Bombay			
		(b) M/s. Jolly Board Bombay			
		(c) M/s. Indian Plywood			
		(d) Mangalam Timber Product			
		(e) Indian Gypsum Product			
		(f) Boral Gypsum India Pvt Ltd			
		(g) Aerolite Ceiling Syetem			
PAINT AND DISTEMPER					
27.	Synthetic Enamel Paints				Brand
		(a) Jenson Nicholson			Borolac
		(b) asian paints			Apcolite
		(c) Bergar Paints Ltd			Luxol
		(d) Shalimar Paints Ltd			Superlac
		(e) Good Lass Nerolac			Nerolac
		(f) JSW			
28.	Cement Base Paint	(a) Super Snowcem			
		(b) Duro Cem			
		(c) Aquacem			
		(d) M/s Nitco Paints Pvt Ltd, Mumbai			
		(e) JSW			
29.	Weather proof exterior emulsion	(a) Asian paints			(b) Berger paints
		(d) Pidilite weatherproof paint			(c) JSW
30.	Dry/Oil bound distemper and emulsion (1 st Quality).	(a) Asian			(b) Nerolac
		(c) Berger			(d) Jenson & Nicholson
		(e) JSW			
SANITARY FITTINGS					
31.	Sanitary Fittings.	(a) Hindustan Sanitary Ware Industries (1 st quality) (Hindware only).			
		(b) Parry Ware (Super fine)			
		(c) Neycer (1 st quality)			
		(d) Cera (1 st quality)			
		(e) Prayag			
		(f) Shakti Enterprises			
32.	PVC Seat & Cover for EWC and flushing cisterns.	(a) Commander			
		(b) Simline (Parryware)			
		(c) Speed flow from blue polymers			
33.	Mirrors/Glass	(a) Kohinoor	(b) Atul	(c) Swastik	(d) Modi Guard
INTERNAL AND EXTERNAL WATER SUPPLY					
34.	GI Pipes / GI Tubing	(a) Tata	(b) Swastik	(c) Jindal	
		(d) Surya Prakash	(e) Zenith	(f) BST	
		(g) Indian Tube Company.	(h) GST (Gujrat Steel Tube)	(i) Nidhi	
35.	CI Pipes (Spigot, socket end and flanged end)	(a) Tisco	(b) Electro Steel	(c) Kesoram	
		(d) Kalinga	(e) Kejriwal	(f) M/s Kapilansh dhatu Udyog (P) Ltd.	
36.	CI Pipes (Soil, waste and vent pipes) and Nahani trap	(a) NECO	(b) BECO	(c) M/s Kapilansh	
37.	DI Pipe	(a) Jindal	(b) SAW Pipes	(c) Electro Steel Castings	
		(d) LANCO	(e) M/s Tata Metaliks	(f) Kubota Pipes Ltd.	
38.	Sluice Valves	(a) VENUS	(b) L & T	(c) Audco	
		(d) Leader	(e) Mather & Platt	(f) Upadhaya	
39.	Gun Metal Gate valve	(a) BIR	(b) KARTAR	(c) VIP ISI Marked	
		(d) BALAJI			
40.	Reflux Valve	(a) Kirloskar	(b) Sant	(c) Bir	

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm		
1	2	3		
		(d) Varun	(e) Venus	
41.	High Pressure SV/RV	(a) L&T	(b) Audco	
42.	Air release Valve	(a) BIR	(b) Venus	(c) Enus
		(d) Leader	(e) Kirloskar	(f) Upadhaya
43.	RCC Hume Pipe	(a) Everest		
		(b) Himalaya		
		(c) Indian Hume Pipe		
		(d) Dhare Concrete Product, Smruti 849, Budhwar Peth, Pune - 30		
		(e) Vardhaman Concrete Product Pvt Ltd., 996 Abhinav Apartment, Navi Peth, Pune		
		(f) Poona Concrete Product Co.		
44.	PVC/HDPE pipes and fittings (SWR Grade) and rain water pips & fittings / PVC pipes & fittings	(a) Infra		
		(b) Supreme		
		(c) Amogh Plast Pvt Ltd (for fitting only)		
		(d) Prince		
		(e) Astron Plastic.		
		(f) Gaurav Agro Pipes		
45.	CI SWR Grade pipe & fittings (centrifugally cast).	(a) UNECO	(b) BECO	(c) Kapilansh Dhatu Udyog Pvt.(P) Ltd.
46.	AC rain water pipes	(a) Everest	(b) Charminar	(c) Asbestos Cement Ltd (ACL)
47.	Foot Valve	(a) Sant	(b) BIR	(c) Varun
		(d) Venus	(e) Leader	(f) Kartar
		(g) Balaji		
48.	Stop valve (Gun Metal Gate/ Globe valves).	(a) Gem	(b) Leader	(c) Hindustan Metal Industries
		(d) Zolota	(e) Jaypee	(f) Kingston
		(g) Hansa	(h) GMP	(i) Elite Metal Industries
		(j) SEIKO	(k) Symet	
49.	Brass/PVC stop cocks & Bib taps/Ball (Float) valves.	(a) Jaypee	(b) GMP	(c) Neta
		(d) Zolota	(e) Prayag Polymers	(f) GEM
		(g) Hansa Kingston	(h) SEIKO	(i) Symet
50.	Bib cock /Stop cock/Pillar tap/Ball valve PTMT	(a) Symet	(b) Prayag	(c) Polytuf
51.	Fancy type bib tap, stop valves, shower rose and pillar taps (Chromium plated)	(a) Jaquar	(b) ESS-ESS	(c) Marc
		(d) Dripless	(e) SOMA	(f) Parko
		(g) Hansa	(h) Emsons	
52.	Pumps	(a) Jyoti	(b) Kirloskar	(c) Beacon
		(d) Crompton	(e) Mather and Platt	(f) Calama
		(g) KSB/WASP		
53.	Water Meter	(a) Capital	(b) Anand	
		(c) Capston	(d) Dasmesh	
54.	Water treatment plant (a) Chlorinomes (b) Filter plant	(a) Aquapura	(b) Patterson candy	
		(c) ION exchange	(d) Aquapura	
		(e) Maic-India Ds		
55.	HDPE Water Tanks / PVC water storage tank (ISI mark)	(a) Sintex		
		(b) Infra		
		(c) M/s Ashish Plast		
		(d) M/s Yash Engineering Works, Pune 09422007879		
55 A.	PPR pipes		KPT dehra dun	
INTERNAL ELECTRIFICATION				
56.	MCB/ISOLATORS(SPN/DP/TP N/ FOUR POLE), MCB DB	(a) MDS	(b) Havells	(c) Standard
		(d) ABB	(e) GE Controls	(f) Datar
		(g) Indo Asian (Indo Kopp)	(h) C&S	(i) HPL
		(j) Schinder	(k) L & T	(l) Plaza
57.	FTL, Fittings & fixtures, other light fittings (Street light fitting)	(a) Crompton	(b) WIPRO	(c) Bajaj
		(d) M/s Shakti fitting & fixtures	(e) C&S	(g) Philips
			(f) Benlo	(h) Halonix
58.	Capacitor	(a) Crompton	(b) Bajaj	(c) Asian
59.	Tubular Fluorescent lamp(TFL)	(a) Philips	(b) Crompton Greaves	(c) GE lighting
		(d) Wipro	(e) Osram	(f) Surya
		(g) Bajaj	(h) M/s Shakti Fixture Industries	
60.	Sodium vapour lamp	(a) Philips	(b) GE lighting	(c) Wipro
		(d) Osram	(e) Bajaj	
61.	Compact fluorescent lamps fittings	(a) Philips	(b) Osram	(c) Surya
		(d) Crompton Greaves	(e) Bajaj	(f) Indo Asian
		(g) Plaza	(h) GE lighting	(i) M/s Shakti Fixture Industries:
62.	House wiring (ISI Marked)	(a) Finolex	(b) ECKO	(c) RPG
		(d) Indo-Asian	(e) Anchor	(f) Paragaon
		(g) Plaza	(h) Havells	(i) Primecab
		(j) Polycab	(k) INDIANCAB	(l) Empire
		(m) Bentec		
63.	Thermostat	(a) Indofoss	(b) Annapurna	
64.	Heating element	ISI Marked		

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm			
1	2	3			
65.	PVC Conduits & Accessories.	(a) Avon	(b) Infra		
		(c) Garware	(d) Asian		
		(e) Precision	(f) Modi		
		(g) Supreme	(h) Finolex		
		(i) Amogh plast	(j) BEG		
		(k) Prince	(l) Plaza		
		(m) M/s. CAP Plastic & Tubes, Lucknow	(n) Prestoplast		
		PRESSFIT(M/s Menka Electrical) 590/B, Budhwar Peth, Pune - 411002			
66.	PVC casing/capping or PVC Conduit	(a) Modi	(b) Prestoplas	(c) Prince	
		(d) Precision	(e) Pressfit	(f)	
67.	Rigid Steel Conduits.	(a) Jindal	(b) Kalinga	(c) GB	
		(d) Supreme	(e) Bharat	(f) Plaza	
		(g) BEC Industries	(h) Marina		
68.	Bearing	(a) SKF		(b) NBC	
69.	Piano type switches/flush type sockets/switch socket combi/bell push/ceiling rose/call bells/ buzzer/ ceiling rose and lamp holders	(a) Anchor (Delux)	(b) Standard	(c) Leader	
		(d) SK-555	(e) Kay	(f) Vinay	
		(g) Lisha	(h) Anlex	(i) Ellora	
		(j) CPL	(k) Kinjal	(l) Elleys	
		(m) Plaza	Benlo		
70.	Fan regulator electronic step up type	(a) Anchor (Delux)	(b) Vinay	(c) Armour	
71.	PVC Flexible conduit	(a) Bharat		(b) UMC	
72.	Telephones/TV wiring	(a) Finolex	(b) RR cables	(c) ECKO	
		(d) Plaza	(e) RPG	(f) Indo-Asian	
		(g) Anchor	(h) L & T	(i) Rallison	
		(j) Paragaon	(k) Indian Cable Company	(l) Dalton cables	
73.	Monoblock Pump	(a) Crompton	(b) Kirloskar	(c) Tecmo	
74.	SUCTION SWEEPER PUMP	(a) Modi/equivalent			
75.	Utility Light fittings.	(a) Jecmo	(b) Dayal	(c) Vikas	
		(d) Prakash			
76.	Bed side lamp	(a) Jecmo	(b) Dayal	(c) Vikas	
		(d) Prakash			
77.	Copper ballast /Capacitor/Ignitor	(a) Crompton	(b) WIPRO	(c) Bajaj	
		(d) Asian			
78.	Ceiling fan	(a) Polar	(b) Usha	(c) Crompton Greaves	
		(d) Almonard	(e) Bajaj	(f) Khaitan	
		(g) Orient	(h)		
79.	Exhaust fans.	(a) GEC	(b) Bajaj	(c) Crompton Greaves	
		(d) Khaitan	(e) Usha	(f) Orient	
		(g) Almonard			
80.	Geysers	(a) Pearl	(b) Racold	(c) Bajaj	
81.	Energy meters	(a) Jaipuria	(b) Havells	(c) SMS meters	(d) Bentec (e) Benlo
EXTERNAL ELECTRIFICATION					
82.	HRC Fuse	(a) Havells	(b) L&T	(c) Standard	
		(d) C&S			
83.	Main switch iron clad	(a) Havells	(b) HPL	(c) Standard	
		(d) Indo Asian			
84.	LT (ACB, OCB)	(a) ABB	(b) L&T	(c) C&S	
		(d) Schneider	(e) Siemens		
85.	MCB single pole & neutral enclosure with a two pin and earth plug & socket complete	(a) MDS	(b) Havells	(c) Standard	
		(d) ABB	(e) GE Controls	(f) Datar (g) Benlo	
		(g) Indo Asian	(h) Schinder	(i) L & T	
		(j) C&S	(k) Plaza	(l) Bentec	
86.	MCCB, Change over switches	(a) Havells	(b) Standard	(c) C&S	
		(d) Schneider	(e) HPL	Benlo	
87.	Porcelain fuse	Anchor			
88.	Steel Tubular Poles.	(a) Kalinga Tubes	(b) Singh Profiles.	(c) KL Industries	
		(d) Jindal Tubes	(e) Metal coats, Chennai	(f) Bombay Tubes	
89.	LT Panel/Feeder pillar Box	(a) Maheshwari	(b) M/s SUJOY Mahati	(c) M/s Switch Build Engineer (India) Pvt Ltd	
		M/s Ganesh Electrical & Engineers/ Approve Make of MSEDCL			
90.	HT/LT Cables/ PVC LT XLPE CABLE	(a) CCI	(b) INCAB	(c) Universal	
		(d) Asian	(e) Gloster	(f) Prime Cab	
		(g) Polycab	(h) Bentec		
91.	LT underground cables	(a) Gloster	(b) INCAB	(c) CCI	
		(d) Asian	(e) Universal	(f) Prime Cab	
		(g) Polycab	(h) Indian cab	(i) Vishal	
		(j) Empire	(k) HPL		
92.	PCC Cable Covers (HT/LT) (Pre-cast cable cover)	Mehtab Tiles, Rani Shopping Cente, Bhanwar Kuan Main Road, Indore (MP)-452006 (Mob No :09827014564)			(a) Topaz
93.	HPSV lamp	(a) Crompton Greaves	(b) Bajaj	(c) Osram	
94.	LT/HT Heat shrinkable joints.	(a) Densons	(b) M Seal	(c) Raychem	

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm		
1	2	3		
	Epoxy sealing compound	(d) Siemens	(e) Yamuna gases & Chemicals	(f) Mahindra & Mahindra
95.	Metal halide lamp (CFL)	(a) Crompton Greaves (d) Osram	(b) Philips	(c) Bajaj
96.	Insulators.	(a) Bengal Potteries (d) Jaysree Insulators (g) Modern Insulators	(b) BHEL (e) WS Insulators	(c) National (f) Mysore Porcelain
97.	Measuring Instruments/Panel instruments, relays, Ammeter/Volt meter P/F meter/Frequency meter, selector switch etc	(a) English Electric (d) BICCO Lawire (g) DIP (j) HPL ECE (m) L&T (p) UE	(b) Havells (e) AEI (h) GE Power Controls (k) The Control Group Siemens (n) Easaun (q) NIPPON	(c) Automatic Electrical (Pvt.) Ltd. (f) IMP (i) Crompton (l) Alsthom (o) Minilec (r) MECO
98.	HT ISOLATOR(OSF)	(a) MEI	(b) Southern Switch Gears	(c) ANDREW YULE
		C G LUCY SWITCHGEAR LTD (Marketed by Crompton Greaves)		
99.	HT (VCB) switch Gear	(a) Crompton Greaves Ltd (d) ABB (g) Schneider	(b) Alsthom (e) Andrew Yule	(c) BHEL (f) SIEMENS
100.	LT Switch gear	(a) English Electric (d) Schinder (g) C&S	(b) L & T (e) Controls & system	(c) Crompton Greaves Ltd (f) ABB
101.	Single Phasing preventer	(a) L & T	(b) Crompton Greaves	(c) Havell's
102.	Capacitor Bank / Power capacitor	(a) Alstom (d) L&T (g) Seimens	(b) Crompton greaves (e) Madhav (h) Epcos	(c) ABB (f) Datar (i) Neptune
103.	Starters (Automatic oil immersed / Air break star Delta, DOL and manual type)	(a) L & T (d) MEI	(b) Jyoti (e) Kiburn	(c) Siemens (f) C&S
104.	Gang operated air break switches/Drop out fuse./GOD	(a) Pactil (d) BHEL	(b) Southern Switchgear (e) ELPRO	(c) Universal (f) Jaipuria Bros
105.	L.T. Voltage stabilizer	(a) AE (d) APLAB	(b) Vinitec (e) Alstom	(c) Brentford (f) Integ
106.	Lightning arrestors.	(a) BHEL (d) Alstom	(b) Elpro (e) Rashtriya	(c) Oblum (f) Crompton Greaves
107.	Compressor	(a) Emersion (d) Godrej	(b) Tecumseh	(c) Whirlpool
108.	Batteries	(e) Exide (h) Prestolite	(f) Standard	(g) Amarraja
109.	DG Sets (With Acoustic sEnclosure)	(a) Kirloskar green	(b) Greaves cotton	(c) Cummins
110.	Kilo Watt Hour Meter (Electronic, Electro Mechanical).	(a) Alsthom	(b) Jaipuria Bros	(c) Havells (d) Benlo
111.	Automatic street light timer switch	(a) L&T (d) HPL	(b) English Electric (e) Indo Asian	(c) Havells
112.	Power Contactor	(a) L&T (d) C&S	(b) Standard	(c) Havells
113.	Contactor	(a) L&T (d) C&S	(b) Siemens	(c) BCH
114.	Air Curtain	(a) Snehavardhana	(b) Filtrox	(c) Technocrat
115.	Fuse switches/change over switches LT	(a) GE Power Controls (GE) (d) English Electric (Alstom) (g) Siemens	(b) Havells (e) ECE (h) L&T	(c) Schneider (f) Standard (i) C&S
116.	Transformer oil	(a) Motor Oil - M/s Penzol Ltd.,	(b) Power Oil - M/s Apar Industries	(c) Savita Oil - M/s Savita Transformer Oil Industries Ltd.
117.	Transformers <u>33/11KV or 22/11KV</u>	(a) Alstom (d) NGEF (g) BHEL	(b) Crompton Greaves (greaves Cotton) (e) Kirloskar, Power Equipment	(c) SEEMENS (Bharat Bijlee) (f) Voltas
118.	Transformers <u>11/0.433KV, 22/0.433KV, 33/0.433KV</u> Up to & including 400 KVA capacity: -	(a) URJA (d) INDO TECH	(b) MAHATI (e) PACTIL	(c) PATSON

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm		
1	2	3		
119.	Transformer Above 400 KVA capacity: -	(a) AREVA	(b) CROMPTON GREAVES	(c) KIRLOSKAR POWER EQUIPMENT
		(d) VOLTAMP	(e) ITL	(f) SIEMENS
120.	SF 6 (RMU)	(a) ABB	(b) SCHNEIDER	(c) Kirloskar
		(d) C G LUCY SWITCHGEAR LTD(Marketed by Crompton Greaves)		
121.	ACSR Conductor	(a) Alind	(b) ICC	(c) Bharat Conductors
		(d) VK conductors	(e) NICCO	
122.	CT & PT (Current Transformer and Potential Transformer)	(a) Pragatil	(b) Prayag	(c) Kappa
		(d) Crompton	(e) C&S	(f) AE
		(g) L & T		
123.	Gaseous type gravity feed chlorinator	(a) Sathya Sai	Candy filter Bombay	
124.	Chlorine gas Cylinder	(a) JMC	(b) ASCO	(c) JAC
125.	Electronic Energy Meter (Temper proof)	(a) L & T	(b) HPL	(c) SECURA
126.	Pre stressed concrete poles.	(a)	M/s Beton Concrete Products Ltd, Auranagbad	
		(b)	Precto ind area, Chandigarh	
		(c)	Hindustan Prestressed Concrete, Faridabad	
		(d)	Cement Fabric Industry, Chandigarh	
127.	Flameproof and Explosion proof Electrical light Fitting and Switch Gears Equipments	(a)	Flexpro Electricals (Sales), Nasik.	
		(b)	M/s Sudhir	
		(c)	M/s Baliga	
		(d)	M/s Shyaam Switchgears Pvt Ltd, Mumbai	
128.	Solar water heaters	(a)	Bharat Heavy Electricals Ltd, 16 th floor, Hindustan Times House, 18-20 Kasturba Gandhi Marg, New Delhi-110001	
		(b)	Novel Energy (P) Ltd, 119 DSISCO SHEDS, Okhla Industries, Phase-I, New Delhi.	
		(c)	Solar Equipment Manufacturing Co, C-3, Sector 6 NOIDA, Gautam Budha Nagar (UP).	
		(d)	M/s Solchrome system India (Ltd), 61 Sector V, Parwanoo (HP).	
		(e)	M/s Surya Jyoti Devices India Ltd, Village Chanalon, PO Kurali, Distt Ropar.	
		(f)	M/s SU Solartech Systems (P) Ltd, Sec -7C, Chandigarh	
		(g)	M/s Surya Shakti, Chandigarh.	
		(h)	M/s Tata BP Solar Systems	
		(i)	M/s Best & Crompton, Solar Energy Division, 39, SIDCO Industrial Estate, Ambattur, Madras - 600098)	
		(j)	Inter Solar System, Chandigarh	

Note - Materials to be incorporated in the work shall be superior/1st quality of the makes given above.

(SIGNATURE OF CONTRACTOR)

**AGE Contract
For Accepting Officer**