

Tender No: 03(4)/2019-Admn


**NOTICE INVITING e-TENDER (NIT)**

Tender No: 03(4)/2019-Admn

Dated 26 August, 2019

**Centre for Development of Advanced Computing (C-DAC), Noida** under the Ministry of Electronics and Information Technology, Govt. of India, invites electronic bids in **two bid system** (Technical Bid & Financial Bid) from well-established experienced Agencies for **“Widening and Repairs of internal concrete roads and developing parking in Academic Campus, C-DAC at Plot No. B-30, Sector-62, Noida – 201309 (U.P.)**

Tender document can be downloaded from the website at URL link: [www.eprocure.gov.in](http://www.eprocure.gov.in) or from [www.cdac.in](http://www.cdac.in)

 [Click to Download the Tender Document](#) (File Format: PDF, File Size: 467KB). The details of tender are as below:

1. **Issue of Tender Document** : 26 August 2019
2. **Pre-bid Meeting** : At 11:00 AM on 04 September 2019
3. **Receipt of Bids** : By 03:00 PM on 19 September 2019
4. **Technical Bid Opening** :At 03:30 PM on 20 September 2019
5. **EMD (Refundable)**: Rs. 35,000/- (Rupees Thirty Five Thousand Only) in the form of DD / Pay Order favoring C-DAC payable at Noida. In case of non-submission of EMD, the bid will be rejected. If the Tenderer is exempted from submitting the EMD, the Tenderer should upload the relevant supporting document (exempting the Tenderer from submitting the EMD) along with the technical bid, without which the bid will be considered invalid and rejected.

**Opening of Technical & Price Bid**

Only the technical bids will be opened on Bid Opening Date. Price bids of short-listed / technically qualified bids would be opened on a later date & time under intimation to all successful Tenderers. No Tenderer is required to be present in C-DAC office for any e-tender opening process. Tenderers can view the status & tender opening statement by logging on to e-procure site. The bids complete in all respects should be uploaded at the given site above by the due date and time.

**Senior Director & Head of Administration**

**Phone: 0120-3063305, 3063386**

**CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING (C-DAC)**

(A Scientific Society of the Ministry of Electronics and IT, Govt. of India)

Anusandhan Bhawan, C-56/1, Institutional Area, Sector-62, Noida-201309.

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**Prequalification Criteria:**

**1. Eligible Tenderer:**

- (i) Should be a Company / Firm / Propriety which has been incorporated/in existence for a minimum period of **5 years** and has a permanent establishment in **Delhi/NCR** (copies of certificate of incorporation and proof of address to be submitted).
- (ii) Average Annual financial turnover during the last 3 years, ending of the previous financial year, should be **at least Rs. 6.00 Lacs**. (Copies of audited balance sheet and PL Statement certified by Chartered Accountant should be uploaded)
- (iii) Should have successfully executed building Road and parking works for a government department/ organization / reputed companies during past five years **(between 2013 and 2018)** with following criteria:
  - a) Three works of minimum value Rs 7.0 Lacs each, or
  - b) Two works of minimum value Rs 8.6 Lacs each, or
  - c) One works of minimum value Rs 13.7 Lacs

(Copy of satisfactory completion certificates issued by the client clearly indicating value of work shall be uploaded)
- (iv) Should have all the necessary registrations (as per the Pre-Qualification details asked in enclosed Pro forma I & II) like GST / PAN etc. and the proofs should be uploaded. In absence of supporting documents, the Bid is liable to be rejected

**2. Earnest Money Deposit:**

The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of Rs. 35,000/- (Rupees Thirty Five Thousand Only) by way of demand drafts / Pay order only in favor of C-DAC payable at Noida.

The original demand draft / Pay order for earnest money deposit must be submitted separately enclosed in the envelope containing the technical bid. Any technical bid is found without the demand drafts of earnest money deposit will be rejected. The C-DAC will not be liable to pay any interest on such an amount. The earnest money deposit shall be forfeited, if the tenderer withdraws its bid during the period of tender validity.

The earnest money deposit of the tenderer, whose tender has been accepted, will be converted in Security Deposit. Earnest money deposit of the successful tenderer shall be forfeited, if it refuses or neglects to execute the order.

After the award of the contract to the successful tenderer, the earnest money deposit of the unsuccessful tenderer(s) will be refunded within 30 days.

**3. Validity:**

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Quoted rates must be valid for a period of 120 days from the date of the closing of the tender. The overall offer for the assignment and tenderer quoted price shall remain unchanged during the period of validity. If the tenderer has quotes the validity shorter than the required period, the same will be treated as unresponsive and it may be rejected.

In case the tenderer withdraws, modifies or changes his offer during the validity period, the tender is liable to be rejected and the earnest money deposited shall be forfeited without assigning any reason thereof. The tenderer should also be ready to extend the validity, if required, without changing any terms, conditions etc. of their original tender.

**4. Liquidated Damages (LD):**

Timely execution is the essence of the work order; therefore, in case of any delay in work completion beyond the stipulated period for reasons attributed to the bidder, Liquidated Damage @0.5% per week or part thereof subject to maximum of 10% of the balance value of work will be deducted.

**5. Bid Submission:**

**Note: Before submission of the bid, the Tenderers must verify the eligibility criteria and also ensure fulfilling all the terms and conditions. In the absence of scanned uploaded copies of documents / certificates under eligibility criteria above, the bid is liable to be rejected.**

**(A)** Bids must be uploaded on e-tender site of NIC- [eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app) along with scanned copies of related documents.

The bid must be uploaded in two parts as:

**(B) Part No. 1 (Technical Bid)** shall contain:

(i) Earnest Money Deposit (EMD) of **Rs. 35,000/- (Rupees Thirty Five Thousand Only)** in the form of DD / Pay Order favoring C-DAC payable at Noida. The scanned copy of DD/Pay order for EMD should be uploaded with the Technical Bid. In case of non-submission of EMD the tender will be considered invalid and will be rejected. The original DD/Pay orders deposited/posted in sealed cover super-scribing tender number with work detail- **“Widening and Repairs of internal concrete roads and developing parking in Academic Campus, C-DAC at Plot No. B-30, Sector-62, Noida – 201309 (U.P.)”**. The name of Tenderer and tender number should be clearly written on back of DD/Pay order to avoid mixing/loss of instrument. Similarly if Tenderer is exempted from submission of EMD, necessary documents must be submitted in lieu of original DD / Pay order and must reach on before the due date and time of bid opening as given in NIT of this tender.

(ii) Technical bid with full details including description of Makes of the materials for technical assessment of the proposal. The Tenderer must quote only for reputed and ISI Mark materials.

(iii) An Undertaking as mentioned under Eligibility Criteria.

(iv) The Tenderers should upload Pre-Qualification Proforma –I (as given at page No. (18) duly filled with proper seal and signatures of authorized person.

(v) The Tenderers should upload Pre-Qualification Proforma –II (as given at page No. (19) duly filled with proper seal and signatures of authorized person.

(vi) The Tenderers should upload documentary proof in support of satisfactory completion of similar work

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- (vii) All the documentary proof of applicable standards and bench marks should be uploaded along with the technical bids.
- (viii) The onsite defect liability services for a period of one year from date of completion of work.
- (ix) Tender acceptance letter (**Annexure-C**) on Tenderer's letter head in token of acceptance to the terms and conditions as laid down in the tender document. A scanned copy of the bid document duly signed by the Tenderer's authorized representative is to be uploaded in token of acceptance of the same. Any deviation in the general terms and condition may lead to the rejection of the bid.

**Important Note:**

- a) If the bid is incomplete and / or non-responsive it will be rejected during technical evaluation. The Tenderer may not be approached for clarifications during the technical evaluation. So Tenderers are requested to ensure that they provide all necessarily details in the submitted bids.
- b) If any price details are found in the Technical Bid, the offer will be summarily rejected.

**(C) Part -II (Price Bid):**

**i. The price bid (BOQ) in excel sheet format as per Annexure-B shall be uploaded online only. PRICE BID SHOULD NOT BE SUBMITTED IN A SEALED ENVELOPE.**

ii. The PRICE PART shall contain only schedule of rates duly filled in. No stipulation, deviation, terms & conditions, presumptions etc. is permissible in price part of the bid. CDAC shall not take any cognizance of any such conditions and may at its discretion reject such price bid.

iii. Prices should be given in INR in figures only.

iv. Tenderers are advised to fill the BOQ file as per following instructions:

a) The Tenderer has to download the BOQ file along with tender documents and subsequent corrigendum, if any.

b) Tenderer to note that there are WHITE cells in BOQ file, which should not be modified by the Tenderer. Tenderers are advised to fill the GREY cells meant for the rates, which are to be entered by the Tenderers.

c) Tenderers are advised strictly not to alter or change the BOQ format /contents. Tenderers are also advised not to paste any image file with BOQ.

d) The Tenderer shall submit the tender online on e-tendering site [eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app) on or before the due date & time of bid submission. Tender submitted by any other form (fax/email/courier/post/hard copy) will not be accepted.

e) Price offered by the Tenderer shall not appear anywhere in any manner in the technical bid.

**INSTRUCTION TO e-TENDERER (ITB)**

**(A) Pre-bid meeting:** C-DAC shall organize a pre-bid meeting at **11.00 AM** as per prescribed date in tender at Anusandhan Bhawan, C-DAC Noida to address the queries of the Tenderers. All the Pre-bid queries must reach C-DAC, Noida before the date of Pre-bid Meeting. Based on the feedback / suggestions from the Tenderers, modified Tender (including list of sections where corrections have been made) will be hoisted on the website ([www.cdac.in](http://www.cdac.in) / [www.eprocure.gov.in](http://www.eprocure.gov.in)), if required. C-DAC may also make changes in the RFP on its own; therefore Tenderers are requested to visit the said website on

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regular basis for checking necessary updates. The decision of C-DAC regarding acceptability of suggestion (or otherwise) shall be final or shall not be called upon to question under any circumstances.

**(B) Offer Validity:** Offers should be valid for minimum One Hundred and Twenty (120) Days from the date of opening the Technical Bid. A bid, valid for a shorter period, is liable to be rejected. C-DAC, Noida may ask the Tenderers to extend the period of validity, if required.

**(B) Time of Completion:** The Schedule time of completion for the work is within **Three Months** from the date of Work Order

**(C) Product Specifications & Compliance Statement:** The Tenderer should quote rates using the materials strictly as per the tender specifications and only of technically reputed brands / makes with ISI Mark. Complete technical details along with brand, specification, technical literature etc. highlighting the specifications must be supplied along with the technical bid. Each page of the bid and cuttings / corrections shall be duly signed and stamped by the authorized signatory. Failure to comply with this requirement may result in the bid being rejected.

**(G)** Earnest Money Deposit is liable to be forfeited and bid is liable to be rejected, if the Tenderer withdraw or amends impairs or derogates from the tender in any respect within the validity period of the tender.

**(H)** The Earnest Money of all unsuccessful Tenderers shall be returned as early as possible within the Bid Validity period but not before 30 days from the date of Work Order. No interest will be payable by C-DAC on the Earnest Money Deposit. The Earnest Money of successful Tenderer shall be adjusted against S.D. of the work.

**(I)** if any material or part thereof is lost or found defective during execution, the Tenderer shall immediately arrange to bring the materials or part thereof, as the case may be, at no extra cost.

**(J)** The rates should be quoted in **Indian Rupees**, for the entire work to be done at site, both IN WORDS & FIGURES. All the quoted prices shall be fixed and shall not be subject to escalation.

**(K)** GST shall be paid as per actual, Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the Contractor and C-DAC shall not entertain any claim whatsoever in this respect.

**(L)** C-DAC, Noida reserves the right to accept / reject the offers or cancel the whole tender proceedings without assigning any reason whatsoever. Late / Delayed offers shall not be accepted under any circumstances. Incomplete offers will be rejected. In case the specified date for the submission of offers being a holiday or declared holiday for C-DAC, the bid-closing deadline shall stand extended to the next working day up to the same time.

**(M)** C-DAC shall not be responsible for delayed submission or non- submission of bid due to any reason whatsoever. The Tenderers are requested to submit the bid online much before date & time of submission, failing which C-DAC shall not be responsible for any such technical problem.

**(N)** *E-tender Tenderers are requested to note that all communication will be made through procurement portal only. C-DAC reserve the right not to take cognizance of the communication made outside procurement portal.*

**(O)** Any attempt of direct or indirect negotiations on the part of the Tenderer with the authority to whom the bid has been submitted or authority who is competent to finally accept / reject the same after the tender has been submitted or any endeavor to secure any interest for an actual or prospective Tenderer or to influence by any means the acceptance of a particular tender will render the tender liable to be rejected.

**(P) Disclaimer:** This Tender is not an offer by C-DAC, Noida, but an invitation for Tenderer's response. No contractual obligation whatsoever shall arise from the tender process.

**(Q) Declaration:** The Tenderer would be required to give a certificate as below in his commercial bid.

**“I/WE UNDERSTAND THAT THE QUANTITY PROVIDED ABOVE IS SUBJECT TO CHANGE. I/WE AGREE THAT IN CASE OF ANY CHANGE IN THE QUANTITIES REQUIRED, I/ WE WOULD BE EXECUTING THE WORK AT THE RATES AS SPECIFIED IN THIS PRICE BID. I /WE AGREE TO ADHERE TO THE PRICES GIVEN ABOVE EVEN IF THE QUANTITIES UNDERGO A CHANGE”.**

**SIGNATURE OF THE TENDERER WITH STAMP**

**CHECK LIST FOR SUBMISSION OF TENDER**

Sl. No.	List of documents ( to be uploaded as scanned copies)	(Please Tick Mark)	Proof of Document: Page No.
1.	Demand Draft for EMD of Rs. 35000/-		
2.	Documentary proof for exemption from payment of EMD such as appropriate registration with NSIC etc. (if applicable)		
3.	Copy of Registration with Registrar of Companies or Partnership deed or other applicable documents.		
4.	Copy of GST		
5.	Copy of last three years Audited Balance Sheet: 2015-16, 2016-17 & 2017-18		
6.	Copy of last Five years Income Tax Return: for A.Y. - 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19.		
7.	Copy of work Orders		
8.	Copy of Performance Certificates		
9.	Copies of duly filled Performa –I and Performa -II		
9.	Copy of Tender Acceptance Letter as per ANNEXURE C		

**6. Tender Evaluation:**

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The C-DAC will evaluate the entire tenders, strictly on the basis of the terms & conditions incorporated in the tender enquiry document and terms, conditions etc. as stipulated by the tenderer(s) in their tender to determine whether these are compliance in all respects, as specified in the tender enquiry document.

During the evaluation / scrutiny of the tenders, at any stage, if it is found that any of the tenderer(s) terms and conditions are not compliance with tender enquiry document, C-DAC may seek the clarification within the specified target time and if the tenderer has fails to reply / or not agree / accept the terms and conditions, their tender will be treated as unresponsive and it is liable for rejection.

If the schedule of requirements contains more than one schedule, then offers for each schedule are to be evaluated and ranked separately, if it is in the benefit of the C-DAC, order may be awarded accordingly.

Evaluation of the proposals shall be done as under:

**Technical Evaluation:**

- C-DAC will examine all the bids to determine whether these are qualifies the essential pre-qualification criteria, whether tenderer have submitted the EMD with technical Bid, whether all the documents as mentioned / or required in the tender document to be submitted with technical bid have submitted, whether all the documents are in prescribed format and has been properly signed & stamped and whether the bid are completed and generally in order.
- Tender who will not qualify technical evaluation shall be rejected.

**Financial Evaluation:**

- Financial bid(s) of the only technically qualified tenderer will be opened for financial evaluation.

**7. Award of Contract:**

After due evaluation of the financial bids, the C-DAC will award the contract to the lowest evaluated responsive tenderer (hereinafter referred to as the “Contractor”).

**8. Force Majeure:**

Any delay due to Force Majeure will not be attributable to the Tenderer. Force Majeure events shall mean one or more of the following acts or events: Acts of God or events beyond the reasonable control of the Affected Party which could not reasonably have been expected to occur, exceptionally adverse weather conditions, lightning, earthquake, cyclone, flood, volcanic eruption or fire or landslide; Radioactive contamination or ionizing radiation; Strikes or boycotts (other than those involving the Contractor or its employees / representatives or attributable to any act or omission of any of them) interrupting supplies and services of the Project for a period exceeding a continuous period of 7 (seven) days; An act of war (whether declared or undeclared),

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invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage which prevents rendering of supplies or specified services by the Contractor for a period exceeding a continuous period of 7 (seven) days.

**9. Arbitration and Laws:**

In case of any dispute or difference arising out of or in connection with the tender conditions / order and Contract, the C-DAC and the Contractor will address the dispute / difference for a mutual resolution and failing which, the matter shall be referred for arbitration to a sole Arbitrator to be appointed by the C-DAC. The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Noida (U.P) only. The resolution of the Arbitrator shall be final and binding on both the parties.

**10. Jurisdiction:**

The courts at Noida (U.P) alone will have the jurisdiction to try any matter, dispute or reference between parties arising out of this tender / contract. It is specifically agreed that no court outside and other than Noida (U.P) Court shall have jurisdiction in the matter.



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**LETTER SUBMITTING TENDER**

To

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Dear Sir,

With reference to the tender invited by you for the **Widening and Repairs of internal concrete roads and developing parking in Academic Campus, C-DAC at Plot No. B-30, Sector-62, Noida – 201309 (U.P.)**

I/We do hereby offer to execute the works under “contract at the respective rates mentioned in the Schedule of quantities. I/We have examined the site and read the articles of agreement, conditions of contract, special conditions forming part of the schedule of quantities. I/We agree to finish the whole of the works within 3 months from the date of getting possession of the site or order to start work whichever is later.

I/We have deposited as Earnest Money Rs. \_\_\_\_\_ (Rupees ..... only) by a Bank draft in favour of \_\_\_\_\_ which shall be returned to the unsuccessful Tenderers. The same shall be adjusted against S.D. for the successful Tenderer.

I/We understand that you are not bound to accept the lowest or any tender that you receive.

Yours faithfully,

Place:

Date:

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**CONDITIONS OF CONTACT**

1. The tenderer shall make his own arrangement for procurement of all materials required for the work. Quality to be verified by the Consultant/Engineer-in-charge.
2. 10% of the value of work done from each bill will be retained as Security Deposit, which shall be released only after the defect liability period of 12 months. No interest shall be paid on the retention amount.
3. The defect liability period of the work shall be 12 months from the date of completion of the work as certified by the Employer based on the recommendation of the consultant and this date will be as indicated in the provisional completion certificate. If any damage or defect occurs in the work during this period then the contractor shall rectify the damage or defect at his own expense to the satisfaction C-DAC. If the contractor fails to do so, then the C-DAC shall have the authority to get the work done by other means and the expenditure incurred shall be recovered from the contractor.
4. The successful tenderer is bound to carry out any items of work necessary for the completion of the job even though such may not have been included in the schedule of probable quantities or rates.
5. All duties, levies and taxes, including all taxes as applicable shall be payable by the contractor. The contractor shall submit to the employer necessary documentary proof of deposit of GST, ESI, EPF, etc. to the concerned department from time to time as and when required.
6. The contractor shall observe all the formalities related to the contract labour (Regulations and Abolition Act 1972)
7. The contractor shall observe all the formalities related to the contract labour, as the contract is short termed contract.
8. The proposed project site is situated at Plot No. B-30 Sector 62 Noida (UP)
9. The contractor must see the site conditions drawing and take all the aforesaid factors and the forgoing factors stated under various trade sections while quoting the rates, as no extra will be allowed on any ground arising out of, or relating to the aforesaid and foregoing factors.
10. On the completion of the works the contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workmanlike condition to the full satisfaction of the Employer/authorized representative not later than 15 days from the virtual completion of the works or by such other later date as fixed by the employer/Consultant.
11. The quoted rate shall remain firm and no escalation shall be considered and paid on these rates till the entire work complete satisfactorily.
12. During execution of the contract, the contractor shall furnish weekly progress reports to the C-DAC and in the format as specified by the C-DAC indicating the progress achieved during the week and the total progress up to the week as against scheduled and anticipated completion dates in respect of key phases of the work. The Contractor shall also furnish any other information in order to

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ascertain progress, if called for by C-DAC.

### **SPECIAL CONDITIONS**

1. **WATER & ELECTRICITY:** Water & Electricity is available at site & shall be supplied free of cost.
2. **SITE OFFICE:** The contractor shall accommodate his store, Office within the office building. The contractor is not allowed to use space outside the Office building wherein the work has to be done.
3. **LABOUR HUTMENTS:** The contractor is not allowed to make labour hutments inside the building premises. No labour / worker are allowed to be night stay in the premises.
4. **RATES:** The quoted rate shall remain firm and **no escalation** shall be paid on these rates during the construction period and during the extended period if any.
5. **TIME OF COMPLETION:** Entire work shall be completed in 03 Months (Three months) from the date of commencement of work which shall be reckoned from the 7th day of date of issue of work order date of taking possession of site, whichever is earlier.
6. **PAYMENTS:** The minimum value of monthly running bills shall not be less than Rs.7.0 Lacs. The payment of R.A. bills after deduction of applicable taxes shall be released within 20 days after duly checked and certified by the Authorized Representative of C-DAC.
7. **Cement:** The cement used for the work shall be OPC 43 grade IS: 8112 of approved make as approved by C-DAC.
8. **Reinforcement Steel:** The Reinforcement Steel used for the work shall be deformed steel bars as per IS: 1786 of approved make as approved by the C-DAC.
9. The successful tenderer is bound to carry out any items of work necessary for the completion of the job even though such may not have been included in the schedule of probable quantities or rates.

#### **10. SCOPE OF WORK**

The scope of work shall include:

- (i) To carry out widening of existing concrete road by 4 feet approximately on both left and right sides of Academic Campus.
- (ii) Developing two wheelers parking along two side wings of Academic Block by laying interlocking block tiles.
- (iii) Repairs to the damaged and settled portions of internal existing roads at required locations.
- (iv) Raising of drainage chambers, manholes, Rain Water chambers, Water supply chambers etc. to required level and miscellaneous allied works.

### **TECHNICAL SPECIFICATIONS**

The work shall be executed in accordance with the specifications and drawings enclosed, the working drawings, the Bill of quantities and instructions issued from time to time. Wherever these specifications are found wanting in any way, the C.P.W.D. specifications shall apply.

#### **1. REINFORCED CEMENT CONCRETE WORK**

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### **1.1 GENERAL**

Reinforced cement concrete work may be cast-in-situ or Precast as may be directed by Engineer-in-Charge according to the nature of work. Reinforced cement concrete work shall comprise of the following which may be paid separately or collectively as per the description of the item of work.

(a) Form work (Centering and Shuttering)

(b) Reinforcement

(c) Concreting: (1– Cast-in-situ), (2 – Precast)

(d) IS 456- 2000 Code of Practice for Plain and Reinforced Concrete (as amended up to date) shall be followed in regard to Concrete Mix Proportion and its production as under:

Concrete shall be manufactured in accordance with clause 10 of above mentioned IS 456 covering quality assurance measures both technical and organizational, which shall also necessarily require a qualified Concrete Technologist to be available during manufacture of concrete for certification of quality of concrete.

### **1.2 Machine Mixing:**

The mixer shall be tested under normal working conditions in accordance with the method specified in IS 4643 with a view to check its ability to mix the ingredients to obtain concrete having uniformity within the prescribed limits. The mixer drum shall be flushed clean with water. Measured quantity of coarse aggregate shall be placed first in the hopper. This shall be followed with measured quantity of fine aggregate and then cement. In case fine aggregate is damp, half the required quantity of coarse aggregate shall be placed in the hopper, followed by fine aggregate and cement. Finally the balance quantity of coarse aggregate shall be fed in the hopper, & then the dry materials are slipped into the drum by raising the hopper. The dry material shall be mixed for at least four turns of the drum. While the drum is rotating, water shall be added gradually to achieve the water cement ratio as specified or as required by the Engineer-in-Charge. After adding water, the mixing shall be continued until concrete of uniform colour, uniformly distributed material and consistency is obtained. Mixing shall be done for at least two minutes after adding water. If there is segregation after unloading from the mixer, the concrete should be remixed. The drum shall be emptied before recharging. When the mixer is closed down for the day or at anytime exceeding 20 minutes, the drum shall be flushed cleaned with water.

### **1.3 Hand Mixing:**

When hand mixing has been specifically permitted in exceptional circumstances by the Engineer-in-Charge in writing, subject to adding 10% extra cement, it shall be carried out on a smooth, clean and water tight platform of suitable size. Measured quantity of sand shall be spread evenly on the platform and the cement shall be dumped on the sand and distributed evenly. Sand and cement shall be mixed intimately with spade until mixture is of even colour throughout. Measured quantity of coarse aggregate shall be spread on top of cement sand mixture and mixing done by shovelling and turning till the coarse aggregate gets evenly distributed the cement sand mixture. Three quarters of the total quantity of water required shall be added in a hollow made in the middle of the mixed pile and the material is turned towards the middle of pile with spade. The whole mixture is turned slowly over and again and the remaining quantity of water is added gradually. The mixing shall be continued until concrete of uniform colour and consistency is obtained. The mixing platform shall be washed and cleaned at the end of the day.

### **1.4 Transportation and Handling:**

Concrete shall be transported from the mixer to the place of laying as rapidly as possible by methods which will prevent the segregation or loss of any of the ingredients and maintaining the required workability.

### **1.5 Placing**

The concrete shall be deposited as nearly as practicable in its final position to avoid re-handling. It shall be laid gently (not thrown) and shall be thoroughly vibrated and compacted before setting commences and should not be subsequently disturbed. Method of placing shall be such as to preclude segregation. Care shall be taken to avoid displacement of reinforcement or movement of form work and damage due to rains. As a general guidance, the maximum free fall of concrete may be taken as 1.5metre. Freshly laid concrete shall be protected from rain by suitable covering.

### **1.6 Compaction**

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Concrete shall be thoroughly compacted and fully worked around embedded fixtures and into corners of the form work. Compaction shall be done by mechanical vibrator of appropriate type till a dense concrete is obtained. The mechanical vibrators shall conform to IS 2505, IS 2506, IS 2514 and IS 4656. To prevent segregation, over vibration shall be avoided. Compaction shall be completed before the initial setting starts. For the items where mechanical vibrators are not to be used, the contractor shall take permission of the Engineer-in-Charge in writing before the start of the work. After compaction the top surface shall be finished even and smooth with wooden trowel before the concrete begins to set.

**1.7 Construction Joints**

Concreting shall be carried out continuously upto construction joints. The position and arrangement of construction joints shall be as shown in the structural drawings or as directed by the Engineer-in-Charge. Number of such joints shall be kept minimum. Joints shall be kept as straight as possible.

Construction joints should comply with IS 11817. When the work has to be resumed on a surface which has hardened, such surface shall be roughened. It shall then be swept clean and thoroughly wetted. For vertical joints, neat cement slurry, of workable consistency by using 2 kgs. of cement per sqm shall be applied on the surface before it is dry. For horizontal joints, the surface shall be covered with a layer of mortar about 10-15 mm thick composed of cement and sand in the same ratio as the cement and sand in concrete mix. This layer of cement slurry of mortar shall be freshly mixed and applied immediately before placing of the concrete.

Where the concrete has not fully hardened, all laitance shall be removed by scrubbing the wet surface with wire or bristle brushes, care being taken to avoid dislodgement of particles of coarse aggregate. The surface shall be thoroughly wetted and all free water removed. The surface shall then be coated with neat cement slurry @ 2 kgs of cement per sqm. On this surface, a layer of concrete not exceeding 150 mm in thickness shall first be placed and shall be well rammed against old work particular attention being paid to corners and close spots; work, thereafter, shall proceed in the normal way.

**1.8 Curing**

Curing is the process of preventing loss of moisture from the concrete. The following methods shall be employed for effecting curing.

**1.9 Moist Curing:** Exposed surfaces of concrete shall be kept continuously in a damp or wet condition by ponding or by covering with a layer of sacking, canvas, Hessian or similar materials and kept constantly wet for at least 7 days from the date of placing concrete in case of ordinary Portland cement and at least 10 days where mineral admixtures or blended cements are used. The period of curing shall not be less than 10 days for concrete exposed to dry and hot weather conditions. In the case of concrete where mineral admixtures or blended cements are used, it is recommended that above minimum periods may be extended to 14 days.

**1.10 Measurements**

Dimensions of length, breadth and thickness shall be measured correct to nearest cm. except for the thickness of slab and partition which shall be measured to nearest 5 mm. Areas shall be worked out to nearest 0.01 sq. m and the cubic contents of consolidated concrete shall be worked out to nearest 0.01 cum. Any work done in excess over the specified dimension or sections shown in the drawing shall be ignored

**2. FORM WORK (CENTRING & SHUTTERING)**

Form work shall include all temporary or permanent forms or moulds required for forming the concrete which is cast-in-situ, together with all temporary construction required for their support.

**2.1 Design & Tolerance in Construction**

Form work shall be designed and constructed to the shapes, lines and dimensions shown on the drawings with the tolerance given below.

- (a) Deviation from specified dimension of cross +12 mm section of columns and beams -6 mm
- (b) Deviation from dimensions of footings (i) Dimension in Plan (+ 50 mm ( -12 mm (ii) Eccentricity in plan 0.02 times the width of the footing in the direction of deviation but not more than 50 mm.
- (iii) Thickness + 0.05 times the specified thickness.

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(Note- These tolerance apply to concrete dimensions only, and not to positioning of vertical steel or dowels.

## **2.2 General Requirement**

It shall be strong enough to withstand the dead and live loads and forces caused by ramming and vibrations of concrete and other incidental loads, imposed upon it during and after casting of concrete. It shall be made sufficiently rigid by using adequate number of ties and braces, screw jacks or hard board wedges where required shall be provided to make up any settlement in the form work either before or during the placing of concrete. Form shall be so constructed as to be removable in sections in the desired sequence, without damaging the surface of concrete or disturbing other sections, care shall be taken to see that no piece is keyed into the concrete.

## **2.3 Surface Treatment**

**Oiling the Surface** : Shuttering gives much longer service life if the surfaces are coated with suitable mould oil which acts both as a parting agent and also gives surface protections. Typical mould oil is heavy mineral oil or purified cylinder oil containing not less than 5%pentachlorophenol conforming to IS 716 well mixed to a viscosity of 70-80 centipoises. After 3-4 uses and also in cases when shuttering has been stored for a long time, it should be recoated with mould oil before the next use.

The second categories of shuttering oils / leavening agents are Polymer based water soluble Compounds. They are available as concentrates and when used diluted with water in the ratio of 1:20 or as per manufacturer specifications. The diluted solution is applied by brush applications on the shuttering both of steel as well as ply wood. The solution is applied after every use. The design of form work shall conform to sound Engineering practices and relevant IS codes.

**2.4 Inspection of Form Work** The completed form work shall be inspected and approved by the Engineer-in-Charge before the reinforcement bars are placed in position. Proper form work should be adopted for concreting so as to avoid honey combing, blow holes, grout loss, stains or discoloration of concrete etc. Proper and accurate alignment and profile of finished concrete surface will be ensured by proper designing and erection of form work which will be approved by Engineer-in-Charge.

## **2.5 Measurements**

### **2.5.1 General :**

The form work shall include the following:

- (a) Splayed edges, notching, allowance for overlaps and passing at angles, sheathing battens, strutting, bolting, nailing, wedging, easing, striking and removal.
- (b) All supports, struts, braces, wedges as well as mud sills, piles or other suitable arrangements to support the form work.
- (c) Bolts, wire, ties, clamps, spreaders, nails or any other items to hold the sheathing together.
- (d) Working scaffolds ladders, gangways, and similar items.
- (e) Filletting to form stop chamfered edges of splayed external angles not exceeding 20mm wide to beams, columns and the like.
- (f) Where required, the temporary openings provided in the forms for pouring concrete, inserting vibrators, and cleaning holes for removing rubbish from the interior of the sheathing before pouring concrete.
- (g) Dressing with oil to prevent adhesion and
- (h) Raking or circular cutting

**2.5.2 Measurements:** Where it is stipulated that the form work shall be paid for separately, measurements shall be taken of the area of shuttering in contact with the concrete surface. Dimensions of the form work shall be measured correct to a cm.

## **3. REINFORCEMENTS**

### **3.1 General Requirements**

Steel conforming to para 5.1.3 for reinforcement shall be clear and free from loose mill scales, dust, loose rust, coats of paints, oil or other coating which may destroy or reduce bond. It shall be stored in such a way as to avoid



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distortion and to prevent deterioration and corrosion. Prior to assembly of reinforcement on no account any oily substance shall be used for removing the rust.

**3.2 Assembly of Reinforcement:**

Bars shall be bent correctly and accurately to the size and shape as shown in the detailed drawing or as directed by Engineer-in-Charge. Preferably bars of full length shall be used. Necessary cutting and straightening is also included. Overlapping of bars, where necessary shall be done as directed by the Engineer-in-Charge. The overlapping bars shall not touch each other and these shall be kept apart with concrete between them by 25mm or 11/4 times the maximum size of the coarse aggregate whichever is greater. But where this is not possible, the overlapping bars shall be bound together at intervals not exceeding twice the dia. of such bars with two strands annealed steel wire of 0.90 mm to 1.6 mm twisted tight. The overlaps/ splices shall be staggered as per directions of the Engineer-in-Charge. But in no case the overlapping shall be provided in more than 50% of cross sectional area at one section

**3.3 Bonds and Hooks Forming End Anchorages:**

Reinforcement shall be bent and fixed in accordance with procedure specified in IS 2502, code of practice of bending and fixing of bars for concrete reinforcement. The details of bends and hooks are shown below for guidance.(a) *U-Type Hook* In case of mild steel plain bars standard U type hook shall be provided by bending ends of rod into semicircular hooks having clear diameter equal to four times the diameter of the bar.

**Note:** In case of work in seismic zone, the size of hooks at the end of the rod shall be eight times the diameter of bar or as given in the structural drawings.(b) *Bends* Bend forming anchorage to a M.S. plain bar shall be bent with and internal radius equal to two times the diameter of the bar with a minimum length beyond the bend equal to four times the diameter of the bar

**3.4 Welding of Bars**

Wherever facility for electric **arc welding or gas pressure welding** is available, welding of bars shall be done in lieu of overlap. The location and type of welding shall be got approved by the Engineer-in-Charge. Welding shall be as per IS 2751 and 9417.

**3.5 Placing in Position**

Fabricated reinforcement bars shall be placed in position as shown in the drawings or as directed by the Engineer-in-charge. The bars crossing one another shall be tied together at every intersection with two strands of annealed steel wire 0.9 to 1.6 mm thickness twisted tight to make the skeleton of the steel work rigid so that the reinforcement does not get displaced during deposition of concrete.

**3.6 Cover:** The minimum nominal cover to meet durability requirements shall be as under:-

<i>Exposure</i>	<i>Nominal Concrete cover in mm not less than</i>
Mild	20
Moderate	30
Severe	45
Very severe	50
Extreme	75

**3.7 Measurement**

Reinforcement including authorized spacer bars and lappages shall be measured in length of different diameter, as actually (not more than as specified in the drgs.) used in the work nearest to a centimeter and their weight calculated on the basis of standard weight given below. In case actual unit weight of the bars is less than standard unit weight, but within variation, in such cases weight of reinforcement shall be calculated on the basis of actual unit weight. Wastage and unauthorized overlaps shall not be paid for. Annealed steel wire required for binding or tack welding shall not be measured, its cost being included in the rate of reinforcement. Where tack welding is used in lieu of binding, such welds shall not be measured. Chairs separators etc. shall be provided as directed by the Engineer-in-Charge and measured separately and paid for.

**3.8 Cross Sections Area and Mass of Steel Bar**

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<i>Nominal Size mm</i>	<i>Cross sectional Area Sq.mm</i>	<i>Mass per meter Run Kg.</i>
6	28.3	0.222
8	50.3	0.395
10	78.6	0.617
12	113.1	0.888
16	201.2	1.58
20	314.3	2.47
25	491.1	3.85

#### **4. FACTORY MADE CEMENT CONCRETE INTERLOCKING PAVER BLOCK**

Factory made precast paver block of M-30 or otherwise specified grade to be used. Paver blocks to be of approved brand and manufacturer and of approved quality. Minimum strength as prescribed by manufacturer and as per direction of Engineer-in-Charge for the grade specified to be tested as per method mentioned in specification of subhead cement concrete of CPWD Specification 2009 Vol. I.

**4.1 Base :** Interlocking paver block to be fixed on the bed 50 mm or specified otherwise thick of coarse sand of approved specification and filling the joints with the sand of approved type and quality or as specified in item description and as directed by Engineer-in-charge.

#### **4.2 Measurement & Rates**

Area provided with paver block to be measured in sq. m. correct up to two places of decimal. The rate includes the cost of the material, labour, tools etc. required in all the operations described and as specified.

#### **5. RAISING OF MANHOLES, STORM WATER DRAIN CHAMBERS, WATER SUPPLY CHAMBER, GULLY TRAP**

##### **5.1 DISMANTLING**

The term 'Dismantling' implies carefully separating the parts without damage and removing. All materials obtained from dismantling shall be the property of the Government unless otherwise specified and shall be kept in safe custody until they are handed over to the Engineer-in-Charge/ authorized representative. Any serviceable material, obtained during dismantling shall be separated out and stacked properly as directed by the Engineer-in-Charge within a lead of 50 meters. All unserviceable materials, rubbish etc. shall be disposed off as directed by the Engineer-in-Charge. The contractor shall maintain/disconnect existing services, whether temporary or permanent, where required by the Engineer-in-Charge.

##### **5.2 Brick Work**

The brick work for raising and repairs of the Manholes, Storm Water Drain Chambers, Water Supply Chamber, Gully Trap Chambers shall be with class 75 bricks in cement mortar 1:4 (1 cement: 4 coarse sand). The external joints of the brick masonry shall be finished smooth, and the joints of the pipes with the masonry shall be made perfectly leak proof. For arched type and circular manholes, brick masonry in arches and arching over the pipes shall be in cement mortar 1.3 (1 cement: 3 fine sand). In the case of manholes of circular type the excess shaft shall be corbelled inwardly on three sides at the top to reduce its size to the cover frame to be fitted.

##### **5.3 Plaster and Pointing**

The walls of the Manholes, Storm Water Drain Chambers, Water Supply Chamber, Gully Trap Chambers shall be plastered inside with 12 mm thick cement plaster 1:3 (1 cement:3 coarse sand) finished smooth. In the case of arched type manhole the walls of the manhole shall be plastered inside all-around only up to the crown level, and flush pointed for the shaft with cement mortar 1:2 (1 cement: 2 fine sand). Where the saturated soil is met with, also the external surface of the walls of the manhole shall be plastered with 12 mm thick cement plaster 1:3 (1 cement: 3 coarse sand) finished smooth up to 30 cm above the highest sub-soil water level with the approval of the Engineer-in-Charge. The plaster shall further be water proofed with addition of approved water proofing



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compound in a quantity as per manufacturer's specifications.

#### 5.4 Covers and Frames

The frame of Manholes, Storm Water Drain Chambers, Water Supply Chamber, Gully Trap Chambers shall be firmly embedded to correct alignment and levels in R.C.C. slab or plain concrete as the case may be on the top of the masonry. After completion of the work, manhole covers shall be sealed by means of thick grease.

#### Standards and Codes

The following codes and standards and their subsequent Latest Versions shall apply for the work

I. S. CODE NO.	SUBJECT
<b>1. CARRIAGE OF MATERIALS</b>	
4082-1996	Recommendations on stacking & storage of construction materials and components at site.
<b>2. EARTH WORK</b>	
1200 (Part-1) 1992	Method of measurement of Earth work.
<b>3. MORTAR</b>	
1542-1992	Sand for Plastering.
2116-1980	Sand for Masonry mortar
2250-1981	Code of practice for preparation and use of masonry mortar. (Reaffirm- 1990)
8112-2013	Specification 43 grade ordinary Portland cement
<b>4. CONCRETE WORK</b>	
456-2000	Code of practice for plain and reinforced concrete
516-1959	Method of test for strength of concrete (Reaffirmed in 2004)
1199-1959	Method of sampling and analysis of concrete
1200 (Part-2)-1987	Methods of measurements of cement concrete work. (Reaffirmed - 1992)
2505-1992	Concrete vibrators- Immersion type-General requirements
2506-1985	General requirements of screed type vibrators
<b>5. R.C.C. WORK</b>	
432-(Part-1)-1982	Mild steel & medium tensile steel bars and hard drawn steel wire for concrete reinforcement.- Mild steel & medium tensile steel bars
432 (Part-2)-1982	Mild steel & medium tensile steel bars and hard drawn steel wire for concrete reinforcement - Hard drawn steel wire
456-2000	Code of practice for plain and reinforced concrete
3558-1983(Reaf-91)	Code of practice for use of immersion vibrators for consolidating concrete
<b>6. EQUIPMENTS</b>	
460-1985(Pt-I,II& III)	Specification for test sieves. (Reaffirmed - 1998)
1791-1985	Specification for batch type concrete mixer. (Reaffirmed – 1990)
<b>7. BRICK WORK:</b>	
1077-1992	Common burnt clay building bricks
1200 (Pt.III)-19920	Method of measurements of brick work. (Reaffirmed - 1992)
2116-1980	Sand for masonry mortars. (Reaffirmed - 1998)
2212-1991	Code of practice for brick work
2222-1991	Burnt clay perforated building bricks.
<b>8. ROAD WORK:</b>	
IRC - 015	Standard Specifications and Code of Practice for Construction of Concrete Roads

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**PRE-QUALIFICATION PROFORMA – I**

Sl. No.	Particulars	To be filled in by the Tenderer
1	Name of the Bidding Agency	
2	Date of establishment of the Agency (Attach a copy of Registration certificate)	
3	Detailed office address of the Agency with office telephone number, e-mail ID, Mobile number and the name of the contact person	
4	Telephone No(s), Fax(s)	
5	E Mail etc. of Registered Office	
6	Name & Mobile Numbers of Directors / Partners / Proprietor	i) ii) iii)
7	Address of the Agency in Delhi / NCR with office telephone number, e-mail ID, Mobile number and the name of the contact person	
8	Status of the Firm: Sole, Proprietorship, Partnership, Pvt. Ltd., Public Ltd. etc. enclose the supporting documents.	
9	Details of Registration, with Registrar of Companies, Partnership deed & other (as applicable) and date.(Copy to be enclosed)	
10	GST No. & enclose copy of Registration.	
11	Whether assesses of income tax. If so, Enclose copies of Income Tax Return of the company submitted for last five years. A.Y. (i.e. 2013-14, 2014-15, 2015-16, 2017-18, and 2018-19) along with copy of PAN card	
12	Furnish copies of audited balance sheet, profit & loss Account for the last three years: 2014-15, 2015-16 & 2017-18.	
13	Status of details of disputes / litigation / arbitration, if any.	
14	Whether a list of clients with contact details, to whom the Tenderer has carried out the similar type of work earlier, has been included in the Technical Bid?	

Note: Where copies are required to be furnished, these are to be certified by the concerned agencies / Tenderer under their seal and signatures.

**Place:**

**Date:**

**Signature:**  
**(Authorized signatory of the Tenderer)**

**Seal of the Tenderer**

**PRE-QUALIFICATION PROFORMA – II****PARTICULARS IN RESPECT OF SIMILAR WORKS EXECUTED IN LAST FIVE YEARS**

Sl. No.	Name of Work and Project with Address	Brief Description of work executed	Name and Address of Client	Value of work executed	Stipulated Time of Completion	Actual Time of Completion	Name of Architect / Consulting engineer
1							
2							
3							
4							
5							
6							
7							

**Note: Where copies are required to be furnished, these are to be certified by the concerned Agencies / Tenderer under their seal and signatures.**

Place:

Date:

Seal of the Tenderer

Signature:

(Authorized signatory of the Tenderer)

**ANNEXURE C: TENDER ACCEPTANCE LETTER**

(To be submitted on Company Letter Head).

Date:

To:

**SD & HoA  
Centre for Development of Advanced Computing (C-DAC),  
C-56/1, Sector-62, Institutional Area,  
Noida- 201309.**

**SUBJECT:** Acceptance of Terms & Conditions of Tender

**Tender Reference No:** 03(4)/2019-Admn

**Name of Tender /Work:** "Widening and Repairs of internal concrete roads and developing parking in Academic Campus, C-DAC at Plot No. B-30, Sector-62, Noida – 201309 (U.P.)

**Dear Sir,**

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely: www.cdac.in / www.eprocure.gov.in etc.; as per your NIT / advertisement, given in the above-mentioned website(s).

2. I / We hereby certify that I / We have read the entire terms and conditions of the tender documents from Page No.1 to 20 (including all documents like annexure(s), schedules(s), etc.), which form part of the contract agreement and I / We shall abide hereby by the terms / conditions/ clauses contained therein.

3. The corrigendum(s) issued from time to time by your department / organization too has also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(S) /corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted / debarred by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the earnest money deposit absolutely.

Yours Faithfully,

Authorized Signatory

(Signature of the Tenderer, with Official Seal)

Email id for correspondence: