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Name of Work: **Comprehensive annual maintenance contract for split type air-conditioners in and around academic area.**

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NIT amounting to Rs. 23,40,665/- is approved.

**Executive Engineer
I.W.D. Elect. & AC Divn.
I.I.T., Kanpur**

**Superintending Engineer
Central Office, I.W.D.
I.I.T., Kanpur**

PART-A

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
INSTITUTE WORKS DEPARTMENT
Electrical & Air-conditioning Division
E-TENDER NOTICE

NIT No. 62/AC/2020/485

Dated : 11.03.2020

The Executive Engineer, IWD, I.I.T., Kanpur on behalf of Board of Governors of IIT Kanpur invites online item rate tenders from eligible air conditioning contractors for following air conditioning & refrigeration works:-

Sl. No	Name of work and location	Estimated cost put to tender (In Rs.)	Earnest Money (In Rs.)	Period of Completion (in Month)	Last date & time of submission of tender	Period during which EMD, Cost of Tender Document, e-Tender Processing Fee and other Documents shall be submitted	Time & date of opening of tender
1	Comprehensive annual maintenance contract for split type air-conditioners in and around academic area.	23,40,665/-	46813/-	12 Months	Upto 3.30 PM on 21.03.2020	After last date and time of sub-mission of tender and upto 3:30 PM on 23.03.2020	At 3:30 PM on 24.03.2020

The E-tender documents is available on <http://eprocure.gov.in/eprocure/app>

Executive Engineer

Copy to:

1. Institute website: www.iitk.ac.in/iwd/tenderhall.htm
2. Notice Board

Information of e-Tendering for Contractors

1. The intending tenderer must read the terms and conditions of FORM-6 for e-Tendering carefully. He should only submit his tender if he considers himself eligible and he is in possession of all the documents required.
2. Information and Instructions for tenderer posted on website shall form part of tender document.
3. The tender document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://eprocure.gov.in/eprocure/app> or www.iitk.ac.in free of cost.
4. But the tender can only be submitted after uploading the mandatory scanned documents as per list given below.
5. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.

BID DOCUMENT

Online bids (Technical & Financial) from eligible bidders which are valid for a period of 90 days from the date of Technical/financial Bid opening (i.e.23.03.2020) are invited for and on behalf of the Superintending Engineer, IWD, IIT, Kanpur for "**Comprehensive annual maintenance contract for split type air-conditioners in and around academic area.**"

Notice Inviting Tender No.	62/AC/2020/485 dated 11.03.2020
Name of Work	Comprehensive annual maintenance contract for split type air-conditioners in and around academic area. .
Estimated Cost	Rs. 2340665/-
Earnest Money	Rs.46813/-
Date of Publishing	11.03.2020 (15:30 hrs)
Clarification Start Date and Time	12.03.2020 (working days only)
Clarification End Date and Time	18.03.2020 (working days only)
Queries (if any)	No queries will be entertained after clarification end date and time
Bid Submission Start Date	11.03.2020 (18:00 hrs)
Last Date and time of uploading of Bids	21.03.2020 (15.30 hrs)
Last Date and time of submitting , EMD and other documents at IWD, IIT Kanpur	23.03.2020 (15:30 hrs)
Date and time of opening of Technical Bids	23.03.2020 (16.00 hrs)
Date and time of opening of Financial Bids	24.03.2020 (15.30 hrs)

Interested parties may view and download the tender document containing the detailed terms & conditions from the website <http://eprocure.gov.in/eprocure/app>

(The bids have to be submitted online in electronic form on www.eprocure.gov.in only. No physical financial bids will be accepted.)

INSTRUCTION FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal i.e. <http://eprocure.gov.in/eprocure/app> , using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

REGISTRATION

- (i)** Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:<https://eprocure.gov.in/eprocure/app>) by clicking on the link “Online Bidder Enrollment” option available on the home page. **Enrolment on the CPP Portal is free of charge.**
- (ii)** During enrolment/ registration, the bidders should provide the correct/ true information including valid email-id & mobile no. All the correspondence shall be made directly with the contractors/ bidders through email-id provided.
- (iii)** As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- (iv)** For e-tendering possession of valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) is mandatory which can be obtained from SIFY /nCode/eMudra or any Certifying Authority recognized by CCA India on eToken/ SmartCard.
- (v)** Upon enrolment on CPP Portal for e-tendering, the bidders shall register their valid Digital Signature Certificate with their profile.
- (vi)** Only one valid DSC should be registered by a bidder. Bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse and should ensure safety of the same.
- (vii)** Bidders can then log into the site through the secured login by entering their userID/ password and the password of the DSC/ eToken.

SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords, etc., to search for a tender published on the CPP Portal.

- 2) *Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.*
- 3) *The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.*

PREPARATION OF BIDS:

- (i) *For preparation of bid Bidders shall search the tender from published tender list available on site and download the complete tender document and should take into account corrigendum if any published before submitting their bids.*

After selecting the tender document same shall be moved to the 'My favourite' folder of bidders account from where bidder can view all the details of the tender document.

- (ii) *Bidder shall go through the tender document carefully to understand the documents required to be submitted as part of the bid. Bidders shall note the number of covers in which the bid documents have to be submitted, the number of documents – including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.*
- (iii) *Any pre-bid clarifications if required, then same may be obtained online through the tender site, or through the contact details given in the tender document.*
- (iv) *Bidders should get ready in advance the bid documents in the required format (PDF/xls/rar/jpg formats) to be submitted as indicated in the tender document/schedule. **Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.***
- (v) *Bidders can update well in advance, the documents such as experience certificates, annual report, PAN, EPF & other details etc., under "My Space/ Other Important Document" option, which can be submitted as per tender requirements. This will facilitate the bid submission process faster by reducing upload time of bids.*

SUBMISSION OF BIDS:

- (i) *Bidder should log into the site well in advance for bid submission so that he/ she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay.*
- (ii) *Bidder should prepare the EMD as per the instructions specified in the NIT/ tender document. The details of the DD/BC/BG/ others physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.*

- (iii) While submitting the bids online, the bidder shall read the terms & conditions (of CPP portal) and accepts the same in order to proceed further to submit their bid.*
- (iv) Bidders shall select the payment option as offline to pay the EMD and enter details of the DD/BC/BG/others. The intending tenderer has to fill all the details such as Banker's name, Demand Draft/Fixed Deposit Receipt /Pay Order/ Banker's Cheque/Bank Guarantee number, amount and date.*
- (v) The amount of EMD can be paid by multiple Demand Draft / Pay Order / Banker's Cheque / Deposit at call receipt / Fixed Deposit Receipts along with multiple Bank Guarantee of any Scheduled Bank.*
- (vi) Bidder shall digitally sign and upload the required bid documents one by one as indicated in the tender document.*
- (vii) Bidders shall note that the very act of using DSC for downloading the tender document and uploading their offers is deemed to be a confirmation that they have read all sections and pages of the tender document without any exception and have understood the complete tender document and are clear about the requirements of the tender document.*
- (viii) Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. For the file size of less than 1 MB, the transaction uploading time will be very fast.*
- (ix) If price quotes are required in XLS format, utmost care shall be taken for uploading Schedule of quantities & Prices and any change/ modification of the price schedule shall render it unfit for bidding.*

Bidders shall download the Schedule of Quantities & Prices i.e. Schedule-A, in XLS format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter save and upload the file in financial bid cover (Price bid) only.

If the template of Schedule of Quantities & Prices file is found to be modified/corrupted in the eventuality by the bidder, the bid will be rejected and further dealt as per provision of clause no 23.0 of ITB including forfeiture of EMD.

The bidders are cautioned that uploading of financial bid elsewhere i.e. other than in cover 2 will result in rejection of the tender.

- (x) Bidders shall submit their bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.*

- (xi) *After the bid submission (i.e. after Clicking “Freeze Bid Submission” in the portal), the bidders shall **take print out of system generated acknowledgement** number and keep it as a record of evidence for online submission of bid, which will also act as an entry pass to participate in the bid opening.*
- (xii) *Bidders should follow the server time being displayed on bidder’s dashboard at the top of the tender site, which shall be considered valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system.*
- (xiii) *All the documents being submitted by the bidders would be encrypted using PKI (Public Key Infrastructure) encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology.*

ASSISTANCE TO BIDDERS:

- (i) *Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contract person indicated in the tender. The contact number for the helpdesk is 0512-2597059 between 10:30 hrs to 17:00 hrs.*
- (ii) *Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24X7 CPP Portal Helpdesk. The 24 x 7 Help Desk Number 0120-4200462, 0120-4001002 and 0120-4001005. The helpdesk email id is support-eproc@nic.in*

INSTRUCTION FOR e-PROCUREMENT

1. PREPARATION AND SUBMISSION OF BIDS :

- a. The detailed tender documents may be downloaded from <http://eprocure.gov.in/eprocure/app> till the last date of submission of tender. The Tender may be submitted online through CPP Portal <http://eprocure.gov.in/eprocure/app>
- b. The bidder should submit the bid online in two parts viz. Technical Bid and Financial Bid. Technical Bid should be upload online in cover- 1 and Financial Bid in ".Xls" should be upload online in cover-2

2. SUBMISSION OF THE BID : All interested eligible bidders are requested to submit their bids online on CPP Portal: <http://eprocure.gov.in/eprocure/app> as per the criteria given in this document:

- a. Technical Bid should be upload online in cover-1.
- b. Financial Bid should be upload online in cover-2

Both Technical and Financial Bid covers should be placed online on the CPP Portal (<http://eprocure.gov.in/eprocure/app>).

3. TECHNICAL BID: Signed and Scanned copies of the Technical bid documents as under must be submitted online on CPP Portal: <http://eprocure.gov.in/eprocure/app> .

List of Documents to be scanned and uploaded (Under Cover-1) within the period of bid submission:-

- Copy of Registration with the Department if any or specialized agencies.
- Required experience / completion certificates of similar nature of works.
The works certificates submitted by the bidder clearly indicate that:
 1. The completion certificate of the similar air-conditioning & refrigeration works
 2. Actual date of completion of the above air-conditioning work.
- Copy of EPF & ESI No.
- Copy of GST Registration No.
- Details of turn over during the last three years.
- Copy of bank solvency certificate
- Scan copy of E.M.D. as to be submitted in hard copy.

The hardcopy of above documents alongwith earnest money deposit receipt shall be submitted in the office of Executive Engineer (AC), Central Office, IWD within last date and time of submission as specified in the above bid document.

Please note that no indication of the rates/amounts be made in any of the documents submitted with the TC-BID.

4. Financial Bid

- a. The currency of all quoted rates shall be Indian Rupees. All payment shall be made in Indian Rupees.*
- b. In preparing the financial bids, bidders are expected to take into account the requirements and conditions laid down in this Tender document. The financial bids should be uploaded online as per the specified ".Xls" format i.e. Price Bid in Excel sheet attached as '.Xls' with the tender and based on the scope of work, service conditions and other terms of the Tender document. It should include all costs associated with the Terms of Reference/Scope of Work of the assignment.*
- c. Being an individual work contract no other tax is payable other than GST. The GST shall be paid extra as applicable.*

5. Last Date for Submission of Tender:

- a. Online bids complete in all respects, must be submitted on or before the last date and time specified in the schedule of events.*
- b. The IIT, Kanpur may, at its own discretion, alter/extend the last date for submission of tenders.*

6. Bid Validity

- a. All the Bids must be valid for a period of 90 days from the last date of submission of the tender for execution of Contract. However, the quoted rates should be valid for the initial/ extended period of the Contract from the effective date of the Contract. No request will be considered for price revision during the original Contract period.*
- b. A bid valid for a shorter period shall be declared as non-responsive.*
- c. In exceptional circumstances, prior to expiry of the original time limit, the IIT may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 90 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids without forfeiture of their Bid Security.*

7. Modification/ Substitution/ Withdrawal of bids:

- a. No Bid shall be modified, substituted or withdrawn by the Bidder after the Bid 's due Date.*
- b. Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.*

8. Rejection of the Bid: The bid submitted shall become invalid if:-

- a) The tenderer is found ineligible.*

- b) *The tenderer does not upload all the documents as stipulated in the tender document.*
- c) *If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically in the office of tender opening authority.*

FORM -6 FOR e-Tendering

The Executive Engineer, IWD, I.I.T., Kanpur on behalf of Board of Governors of IIT Kanpur invites online item rate tenders from eligible air conditioning contractor for the following work(s)::

Comprehensive annual maintenance contract for split type air-conditioners in and around academic area. . .

1. The work is estimated to cost **Rs.23,40,665/-** This estimate, however, is given merely as a rough guide.
- 1.1. The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the tenders. He will also nominate Division which will deal with all matters relating to the invitation of tenders.

2 **Criteria of eligibility**

1. Copy of Registration with the Department if any or specialized agencies.
 2. Having satisfactorily completed 3 (three) similar works each of value **40%** of the estimated cost or two similar works each of value **60%** of the estimated cost or one similar work of value **80%** of estimated cost during last seven years. Out of the above at least one work must be in the Central Govt. /Central autonomous bodies/central PSU/State PSU/State Govt.
 3. Similar nature of work means: similar air conditioning & refrigeration work etc.
 4. Having GST, ESI & EPF registration No. of government authorities.
 5. Details of average annual financial turnover of air-conditioning works should be at least 100% of the estimated cost during the last 3 consecutive financial years.
 6. Having a bank solvency certificate of not less of 40% of estimated cost.
3. Agreement shall be drawn with the successful tenderers on prescribed Form No. CPWD 7 (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website www.iitk.ac.in Tenderers shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
 4. The time allowed for carrying out the work will be **12 Months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents. It may be extended for 2nd & 3rd year provided the maintenance is proper/satisfactory on the same rate, terms & conditions, which will be examined by a committee at the end of the year. However IIT Kanpur will not be bound to extend the period
 5. The site for the work is available.*
 6. The tender document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <http://eprocure.gov.in/eprocure/app> or www.iitk.ac.in other necessary documents also can be seen in the office of the EE, Electrical and Air conditioning Division, IWD, IIT, Kanpur between hours of 3.00 PM to 3:00 PM from **12.03.2020 to 21.03.2020** free of cost.
 7. After submission of the tender the contractor can re-submit revised tender any number of times but before last time and date of submission of tender as notified.
 8. While submitting the revised tender, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

9. *When tenders are invited in three stage system and if it is desired to submit revised financial tender then it shall be mandatory to submit revised financial tender. If not submitted then the tender submitted earlier shall become invalid.*

10. *Earnest Money can be paid in the form of Treasury Challan or Demand Draft or Pay order or Banker`s Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of **Director, IIT, Kanpur** along with Bank Guarantee of any Scheduled Bank wherever applicable.*

A part of earnest money is acceptable in the form of bank guarantee also. In such case, 50% of earnest money or Rs. 20 lac, whichever is less, will have to be deposited in shape prescribed above, and balance in shape of Bank Guarantee of any scheduled bank.

Treasury Challan or Demand Draft or Pay Order or Banker`s Cheque or Deposit at Call Receipt or FDR or Bank Guarantee against EMD, Cost of Tender Document and Cost of Tender Processing Fee shall be placed in single sealed envelope superscripted as “Earnest Money, Cost of Tender Document and Cost of Tender Processing Fee” with name of work and due date of opening of the tender also mentioned thereon.

Copy of Enlistment Order and certificate of work experience wherever applicable and other documents if required and specified in this bid document shall be scanned and uploaded to the e-Tendering website within the period of tender submission and certified copy of each shall be deposited in a separate envelop marked as “Other Documents”.

*Both the envelopes shall be placed in another envelope with due mention of Name of work, date & time of opening of tenders and to be submitted in the office of Superintending Engineer after last date & time of submission of tender and up to 03:30 PM on **23.03.2020**. The documents submitted shall be opened at 04:00 PM on **23.03.2020**.*

Online tender documents submitted by intending tenderers shall be opened only of those tenderers, whose Earnest Money Deposit, Cost of Tender Document and e- Tender Processing Fee and other documents placed in the envelope are found in order.

*The tender submitted shall be opened at 03:30 PM on **24.03.2020**.*

11. *The tender submitted shall become invalid and cost of tender & e-Tender processing fee shall not be refunded if:*

(i) *The tenderers is found ineligible.*

(ii) *The tenderers does not upload all the documents as stipulated in the tender document.*

(iii) *If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically in the office of tender opening authority.*

12. *The contractor whose tender is accepted will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than 10000/-) or Deposit at Call receipt of any scheduled bank/Banker`s cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than ` 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. **In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule ‘F’, including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.***

13. *Intending Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderers shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The tenderers shall be responsible for arranging and maintaining at his own cost all materials, tools, & plants, water, electricity access, facilities for workers, and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work and local conditions and other factors having a bearing on the execution of the work.*
14. *The competent authority on behalf of the Board of Governors, IIT, Kanpur does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderers shall be summarily rejected.*
15. *Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.*
16. *The competent authority on behalf of Board of Governors, IIT, Kanpur reserves to himself the right of accepting the whole or any part of the tender and the tenderers shall be bound to perform the same at the rate quoted.*
17. *The contractor shall not be permitted to tender for works in the IIT Kanpur responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the IIT Kanpur. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.*
18. *No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.*
19. *The tender for the works shall remain open for acceptance for a period of **ninety (90) days** from the date of opening of tenders if any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderers shall not be allowed to participate in the retendering process of the work.*

20. *This Notice Inviting Tender shall form a part of the contract document. The successful tenderers/contractor, on acceptance of his tender by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-*
- a) *The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the tender as uploaded at the time of invitation of tender and the rates quoted online at the time of submission of tender and acceptance thereof together with any correspondence leading thereto.*
 - b) *Standard C.P.W.D. Form 7 or other Standard C.P.W.D. Form as applicable.*

20.1.1 *The tender document will include following three components:*

Part A:-

*CPWD-6, CPWD-7 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2014 as amended/modified up to **21.03.2020.***

Part B:-

General/specific conditions, specifications and schedule of quantities applicable to major component of the work.

Part C:-

Schedule A to F for minor component of the work. (SE/EE in charge of major component shall also be competent authority under clause 2 and clause 5 as mentioned in schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.

20.1.2 *The tenderers must associate himself, with agencies of the appropriate class eligible to tender for each of the minor component individually.*

20.1.3 *The eligible tenderers shall quote rates for all items of major component as well as for all items of minor components of work.*

20.1.4 *Entire work under the scope of composite tender including major and all minor components shall be executed under one agreement.*

20.1.5 *Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works. The Earnest Money will become part of the security deposit of the major components of work.*

21. *The EPF & ESI contribution deposited against the contract workers shall be reimbursed on actual basis.*

Executive Engineer
For & on behalf of the Board of Governors, IIT, Kanpur

ITEM RATE TENDER AND CONTRACT FOR WORK

- (A) Tender for the work of: **Comprehensive annual maintenance contract for split type air-conditioners in and around academic area.**

TENDER

I/We have read and examined the Notice Inviting tender, schedule, A,B,C,D,E&F. Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Board of Governors, IIT, Kanpur within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

*We agree to keep the tender **open for (90) ninety days from the date of opening of tender** and not to make any modifications in its terms and conditions.*

*A sum of Rs. **46813.00** is hereby forwarded in Cash/Receipt Treasury Challan/Deposit at call Receipt of a Scheduled Bank/Fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by scheduled bank as earnest money. If I/we, fail to furnish the prescribed performance guarantee or fail to commence the work within prescribed period I/we agree that the said Board of Governors, IIT, Kanpur or his successors in office shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail of commence work as specified, I/we agree that Board of Governors, IIT, Kanpur or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.*

Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

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

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

*Dated _____ ** _____*

*Witness: ***

*Address: ***

*Occupation: ***

Signature of contractor

*Postal Address ***

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Board of Governors, IIT, Kanpur for a sum of Rs. _____ (Rupees _____)

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

- a) _____
- b) _____
- c) _____

For & on behalf of the Board of Governors, IIT,
Kanpur

Dated _____

Signature _____
Designation _____

Operative schedules shall be supplied separately to each intending tenderer)

SCHEDULE 'A'

Schedule of Quantities:

SCHEDULE 'B'

Schedule of materials to be issued to the contractor:

S. No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of issue
1	2	3	4	5
-----NIL -----				

SCHEDULE 'C'

Schedule of Tools and Plants to be hired to the contractor

S. No.	Description	Hire charges per day	Place of issue
1	2	3	4
-----NIL -----			

SCHEDULE 'D'

Extra schedule for specific requirements/document for the work, if any: **As attached in tender form.**

SCHEDULE 'E'

Schedule of component of other Materials, Labour, POL etc. for price escalation : **N.A.**

SCHEDULE 'F'

Reference to General Conditions of contract.

Name of Work:	Comprehensive annual maintenance contract for split type air-conditioners in and around academic area.		
Estimated cost of the work:	Air-conditioning Items of Work		2340665/-
Earnest money			46813/-
Performance Guarantee	5% of the tendered value of the work		
Security Deposit	2.5% of the tendered value of the work		
General rules and direction :			

Definitions:

2(v)	Engineer-in-Charge	
	<i>For Air-conditioning & Refrigeration/Electrical items of work</i>	Executive Engineer, Institute Works Department IIT, Kanpur
2(vi)	Accepting Authority	Superintending Engineer, Institute Works Department IIT, Kanpur
2(vii)	Percentage on cost of materials and labour to cover all overheads and profits	15%
2(viii)	Standard Schedule of Rates:	
	<i>Electrical Items of Work:</i>	<i>D.S.R. 2018 with up to date correction slips</i>
2(ix)	Department:	<i>Central Public Works Department</i>
2(x)	Standard CPWD contract Form:	<i>GCC 2014, CPWD form-7 as modified & corrected up to 21.03.2020 (Whether correction vide latest circulars are incorporated or not in this document).</i>
Clause 1	i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	15 Days
	ii) Maximum allowable extension beyond the period as provided in i) above	7 Days
Clause 2	Authority for fixing Compensation under Clause 2	Superintending Engineer, Institute Works Department IIT, Kanpur. Or successor thereof
Clause 2 A	Whether Clause 2A shall be applicable	No
Clause 5	i) Number of days from the date of issue of letter of acceptance for reckoning date of start	22 Days
	ii) Time allowed for execution of work	12(Twelve) Months

Authority to decide **Extension of time** **Superintending Engineer,
Institute Works Department
IIT, Kanpur**

Clause 6/ 6A

**Only clause 6
applicable.**

Clause 7 *Gross work to be done together with net payment/Adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment*

Not applicable

Clause 10A *Material to be provided by the contractor.*
Clause 10B (ii), *Whether clause 10-B (ii) and 10-B (iii) shall be*
(iii) *applicable.*

**Applicable
Not Applicable**

Clause 10 C *Component of labour expressed as percentage of value of work*

Not applicable

Clause 10 CA *Materials covered under this clause.* **Nearest material(other than cement, reinforcement bars and structural steel) for which All India Whole sale price Index is to be followed.** **Base price of all the materials covered under clause 10 CA**

1. Cement (PPC)

Nil

NIL

2. Steel

Nil

Nil

Clause 10 CC *Increase/Decrease in Price of materials/wages*

Not Applicable

Clause 11 ***Specification to be followed for execution of work:***

For electrical works ***CPWD specifications 2013 internal and 2013 external electrical works***

For Air conditioning & Refrigeration item of works ***CPWD Specifications 2017 HVAC for Air-conditioning & refrigeration works with up to date correction slips.(Hereinafter called CPWD specifications also)***

Clause 12

12.2 & 12.3 *Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work*

Clause 16 ***Competent Authority for Deciding reduced rates:***

For electrical/civil/Air-conditioning & refrigeration items of work

***Superintending Engineer,
Institute Works Department
IIT, Kanpur***

Clause 18 *List of mandatory machinery, tools & plants to be deployed by the contractor at site.* **Ladders, Multi-meter, drill machine, crimping tools, spanner set, blower, Gas Charging line with equipment, welding torch etc**

Clause 36 (i) *Requirement of technical Representative(s)*

Requirement of technical Representative(s)

Requirement of Technical Representative (S) and recovery Rate

Sl. No	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical / Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words
1.	B.E./B.Tech	Electrical / mechanical	Graduate Engineer	5	1	Rs.21,000/- p.m	Twenty One Thousand per month

For supervision of air-conditioning as well as electrical items of work, technical representatives of the respective disciplines will be required to be deployed.

SALIENT/MANDATORY REQUIREMENTS FOR THE TENDER

Name of Work: **Comprehensive annual maintenance contract for split type air-conditioners in and around academic area. .**

- 1 The tenderer is advised to read and examine the tender documents for the work and the set of drawings available with Engineer-in-charge. He should inspect and examine the site and its surroundings by himself before submitting his tender.
- 2 Separate schedule of quantity is included in this tender for air conditioning & refrigeration items of work. If the tenderer wants to offer any unconditional rebates on their rates, the same should also be offered in the respective components of schedule separately. The contractor shall quote the item rates in figures and words accurately so that there is no discrepancy in rates written in figures and words.
- 3 Time allowed for the execution of work is **12 Months.**
- 4 The contractor(s) shall submit a detailed program of execution in accordance with the master programme/milestone within ten days from the date of issue of award letter.
- 5 Contractor has to arrange and install field laboratory during the currency of work and nothing extra will be paid on this account.
- 6 Quality of the project is of utmost importance. This shall be adhered to in accordance with the provisions of CPWD specifications and guidelines given in the relevant paras.
- 7 Contractor has to deploy required Plant and machinery on the project. In case the contractor fails to deploy the plant and machinery whenever required and as per the direction of the Engineer-in-charge, he (Engineer-in-charge) shall be at a liberty to get the same deployed at the risk and cost of the contractor.
- 8 The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Superintending Engineer/Executive Engineer may in his discretion, without prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.
- 9 Temporary Electric connection shall be issued as per request and the water charges shall be recovered as per rule.

PART-B

QUALITY ASSURANCE OF THE WORK

Sampling of Materials:

1. The contractor shall procure all the materials at least in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
2. All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
3. The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

SPECIAL CONDITION FOR SAFETY AT THE WORK SITE

The contractor will identify one of the supervisors for taking care of implementation of Safety systems.

The Contractor should follow the following General Guidelines governing the safety rules as laid down under:

1. Smoking is strictly prohibited at workplace.
2. Nobody is allowed to work without wearing safety helmet. Chinstrap of safety helmet shall be always on. Drivers, helpers and operators are no exception.
3. No one is allowed to work at or more than three meters height without wearing safety belt and anchoring the lanyard of safety belt to firm support preferably at shoulder level.
4. No one is allowed to work without adequate foot protection.
5. Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs as and when site safety co-coordinator insists eye protection has to be provided.
6. All safety appliances like Safety shoes, Safety gloves, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.
7. All excavated pits shall be barricaded & barricading to be maintained till the backfilling is done. Safe approach to be ensured into every excavation.
8. Adequate illumination at workplace shall be ensured before starting the job at night.
9. All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded.
10. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.
11. Material shall not be thrown from the height. If required, the area shall be barricaded and one person shall be posted outside the barricading for preventing the tre-passers from entering the area.
12. Other than electricians no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.
13. All electrical connections shall be made using 3 or 5 core cables, having a earth wire.
14. Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.

15. A tools and tackles inspection register must be maintained and updated regularly.
16. Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work everyday.
17. All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.
18. No children shall be allowed to enter the workplace.
19. All the lifting tools and tackles shall be stored properly when not in use.
20. Clamps shall be used on Return cables to ensure proper earthing for welding works.
21. Return cables shall be used for earthing.
22. All the pressure gauges used in gas cutting apparatus shall be in good working condition.
23. Proper eye washing facilities shall be made in areas where chemicals are handled.
24. Connectors and hose clamps are used for making welding hose connections.
25. All underground cables for supplying construction power shall be routed using conduit pipes.
26. Spill trays shall be used to contain the oil spills while transferring / storing them.
27. Tapping of power by cutting electric cables in between must be avoided. Proper junction boxes must be used.

Executive Engineer

SPECIAL TERMS & CONDITIONS

1. The quantities mentioned in this tender are and shall be deemed to be only approximate. The split air-conditioners are 1 to 15 years old. The quantity mentioned in this tender and shall be deemed to be only approximate. The split/tower/cassette AC's 1 to 15 years old have been covered under comprehensive annual maintenance contract. This will include the 4 services of the machine & replacement of any defective parts of split/tower ACs including compressors, fan motors & gas charging. Their condition shall be taken in to consideration before quoting. However machines shall be handed over to the contractor in working condition only.
2. The split/tower/cassette ac's shall be maintained for preventive maintenance and also shall be attended on "as and when required" basis. Replacement of all spare parts including compressor, blower, condenser, cooling coil, remote, printed circuit board, refrigerant and damaged Kenny foam insulation on pipe etc. are included in the scope of work for comprehensive AMC. Defective compressors shall be got replaced with new compressor from approved make.
3. All machines shall be given 2 (two) dry and 1 (one) wet service in a year for cleaning of all parts by blowing air, cleaning of air filters, oiling the blower motor, replacement of the defective plugs from approved make and testing for normal operation.
4. Company shall place the services of at least 1 (one) supervisor, 1(one) mechanic Gr.-1, 2 (two) mechanics Gr.-2 and 2 (two) helpers exclusively for this work, who shall report to the supervisor of contractor on 6 (six) days during the period from April to September and at least 1 (one) supervisor, 1(one) mechanic Gr.-1, 2 (two) mechanics Gr.-2 and 2 (two) helpers exclusively for this work, who shall report to the supervisor of contractor on 6 (six) days during the period from October to March (except Sunday) during the year. The supervisor will report daily to the Assistant Engineer(domestic ac unit) Domestic A/c unit shall remain closed on gazetted holiday of Govt. of India.
5. Complaint in writing or any breakdown calls of split shall be attended preferably on the same day but necessarily on the following day. If any complaint remains pending for more than two days, penalty shall be recovered from the rate @ Rs. 75/- day for each of default. The amount of penalty shall be recovered from monthly bills. Contractor shall be required to keep company repaired fan motors and other spare parts in ready stock for immediate replacement.
6. Split having problem like "less cooling due to gas shortage" or "defective compressor" etc. (of which repairing at site in not possible) shall be taken to the workshop and returned duly repaired by next working day.
7. Contractor will have to routine check the working condition of splits once every fortnight. It will be the contractor's responsibility to check the water storage tank clean at all times and it should be closed properly.
8. Complaints shall be received by the institute engineer who shall issue the job orders to the contractors. The orders shall be returned to domestic A/c unit on same day after the complaint is attended.
9. The contractor shall print the booklet of service records for each machine as per the proforma decided by Engineer-in-charge just after the award of work. At the time of servicing the proforma has to be signed by the mechanic, certified by user and to be produced at the time of billing.

10. A printed water proof slip containing annual maintenance contract number of the machine & as specified by the Engineer-in-charge has to be posted on each split just after award of work.
11. Running monthly bill payment shall be made in the first week of the following month @ one twelve of quoted rates after submission of satisfactory service report from the users.
12. The contractor shall have to pay the wages to mechanic & labour as per central govt. notification approved by the labour commissioner Ministry of labour from time to time. Any increase in the wages will be paid on submission of proof of payment.
13. The right to reject all or any of the tenders and to split up the work or relax any or all the above conditions without assigning any reason is received with the Institute.
14. Subletting the work is strictly prohibited and also the operating staff shall maintain discipline and works ethics. However the institute shall have the right to ask any of operating staff to leave the premises of in the opinion of the institute the contact of such an employ is not the interest of the institute.
15. A list of all complaints and its day to day status shall be recorded in a register and these records shall be put up to the engineer in charge on regular basis.
16. The qualification and experience of the staff shall be as under :-
 - a. :- Mechanic -ITI with 2-3 years experience.
 - b. :- Helper -Literate preferably High School Pass.
17. The value of work shall be inclusive of the wages of the workers & supervisor, cost of tools an implements i/c contingent expenditure incidental to the work etc. Nothing extra shall be payable in addition to the monthly value of the contract except.
 - i) The difference in minimum wages applicable to the labour are revised by Central Govt. of India, subsequent to the date of submission of tender shall be paid by the contractor to the labour and reimbursed by the Institute on production of claim. The difference in minimum wages, with respect to the wages applicable in the month of March 2020 + 7.5% shall be reimbursed to the contractor..
 - ii) The contribution of EPF & ESIC by the contractor shall be reimbursed on production of the receipt of deposit of the same in the office of competent authorities. Administrative expenses deposited by the contractor shall not be reimbursed.
 - iii) The contractor shall be provide shoe, uniform and other safety items as reqd. etc. and the costing for the same has to be included in the tender.
18. Any other piece of work not specifically mentioned above but essential for the normal operation & maintenance is also covered in the scope of work.
19. Rates: The work shall be treated as on works contract basis and the rates tendered shall be for complete item of work and all charges for items contingent to the work, such as packing, forwarding, insurance, freight and delivery at site for the materials to be supplied by the contactor, watch and ward of all materials at the site, labour related expenses as per relevant labour laws, testing of materials/ samples etc. excluding Goods & Service tax (GST).
20. Taxes & Duties:
 - 20.1 Being an indivisible works contract, no other tax is payable other than GST. The GST shall be as applicable to IIT Kanpur as per Government rules.

LIST OF APROVED MAKES

S. No.	Details of Equipment's and materials	Manufacturers Name
1.	Air handling unit/Treated Fresh Air Unit	System Air/Nutech/Flaktwood/ Zeco/Edgetech
a)	Blower	Nicotra/Comferi/ Kruger
b)	Cooling coil	Zeco/Edgetech/ AHRI Certified
c)	Hepa Filter	Thermadyne /Anfilco/ Dyna Air Filtration
2.	Fan Coil Units	Cruise/Zeco/Edgetech/Kubic Midea/Trane
3.	GI Sheets	Bhushan / TATA/ Jindal/SAIL
4.	Duct (factory fabricated)	Rola Star / Techno Fabriduct/Zeco/Ductofab
5.	Pipes (MS & GI)	Tata /Jindal (Hissar)/QST/Jindal(Star)
6.	Gate Valve/ SS Ball Valve	Leader /CIM/ Zoloto / Sant/Honeywell
7.	Butterfly valve	Audco / Advance / Honeywell/Kirlosker
8	Check Valve (Non return valve)	Audco/SKS/Advance/ Zoloto/ Honeywell
9.	Balancing valve	Advance /Audco/ Honeywell/Danfoss
10.	Water strainers (Y-strainer/pot strainer)	Emerald/Sant/D.S. Engineering / Maharaja Casting
11.	Proportional thermostat	Siemens /Honeywell/Johnson
12.	3 Way Motorized/ Mixing / Diverting valves	Siemens /Honeywell/Johnson/Anergy/ Rapid Control/Danfoss
13.	Pressure gauges for water line/Refrigerant	Emerald / Fiebeg/ H. Guru
14.	Thermometers	Emerald/ Japsin
15.	V-Belts	Fenner India/ Dunlop
16.	Fibre glass wool	UP Twiga /Ownes Corning
17.	Nitrile Rubber / closed cells expanded /XLPE	Thermaflex/Armaflex/Eurobatex/Paramount polyethylene foam/Aerolam
18.	Fire retardant flexible duct connection	Air flow / Twiga/ATCO/GP spira/caryaire
19.	Gasket for ducts	Prima Kool / Nuprine
20.	Anchor Fasteners	Hilti / Fischer
21.	Extruded Aluminum grilles & diffusers Fresh air louvers/Dampers	Caryaire/ Ravi Star/ Air Flow/Air master/Titus/System air
22.	Fire damper	Ravi Star/Air Flow/ Mapro/System air/Ruskin Titus/Greenheck
23.	Duct attenuator	AirFlow/Ravi Star/ Continental/Mahajan
24.	Vibration isolators	Resistolex /Gerb / Base/ Dunlop
25.	Motors	Siemens/Crompton/ABB/Bharat Bijlee
26.	Fuse switch unit/switch fuse unit/HRC	Larsen Toubro / Siemens / Schneider (MG)/Havells

	fuse	
27.	Contactors, Timers, O/L relays/Motor starters	Larsen Toubro/ Siemens / Schneider
28.	Control cables	CCI/ Fort Gloster/ Universal/ Incab/ Havells/KEI
29.	Cable glands	Dowells/ Comet/ Peeco
30.	Electrical Panel	Milestone Switchgear Pvt. Ltd/Neptune Systems Pvt. Ltd. / Tricolite Elect. Industries/ESSAAR/Modern Switchgears/Adlec
31.	Indication lamps and Push Buttons	L&T/ BCH/ Siemens
32.	Ammeters and voltmeters	AEI/L&T/ Rishab / IMP
33.	CTs	AEI/L&T/ Rishab / IMP
34.	MCB	Legrand (MDS)/L & T/ Schnieder
35.	MCCB	L & T/Siemens / Schneider / Legrand (MDS)
36.	XLPE / PVC power cables	CCI/Gloster/Universal/ Havells
37.	Digital LCD energy meter	Enercon / Havells / IMP
38.	Selector Switch	Kaycee/Salzer
39.	Cable Trays	Steel Ways/Slotco
40.	Stick Pins	Primaseal/Airflow
41.	Humidistat	Honeywell/Danfoss/Penn
42.	Condenser/ Chiller	Trane/Carrier/York/Daikin
43.	Polyurethane Foam (PUF)	Malanpur/ Lloyd /Best Opuf
44.	Thermocole	Pioneer/Styrin
45.	Chemical Reagent	Antiscalant/ Descalant / Antifungal Hibird / amacid/ Maic
46.	Centrifugal pump / Monobloc Pump	Grundfoss/Armstrong/Willo/Xylem
47.	Water Softening Plant	Ion Exchange Ltd. / Milton Royal
48.	Pressure switch	Indfoss / Honeywell
49.	Bronze ball valve	Emerald/ Zolto / Leader/ Sant
50.	Bronze ball valve with Y strainer	Emerald / Rapid control/ BAP
51.	VFD with sensors	ABB/DANFOSS/ Siemens
52.	Cooling Tower	Paharpur/Mihir/ Flow air-tech Pvt.Ltd
53.	Cooling Tower PVC Fills	Paharpur/Mihir
54.	Aluminum cable lugs	Alcon (Heavy gauge) / Jainson
55.	Suction guide	Anergy instrument Pvt.Ltd./Johnson
56.	Water cooled screw chilling unit	Trane/Carrier/York/Daikin
57.	Window/Split Air-conditioner/Hi-wall split AC	Voltas/Hitachi / Carrier/Panasonic/Blue star/ Toshiba/Daikin
58.	Dosing pump	M/s Ion Exchange (I) Ltd/ Milton Royal
59.	Chemical reagent	Eco friendly bio clean pond clarifier/ Volga
60.	Sand filter	M/s Ion Exchange (I) Ltd / Pentair.
61.	Compressor	Emerson/Tecumsseh/Bohn/Danfoss
62.	Cold room/Deep freezer	Danfoss/Blue Star/Bohn
63.	Air-cooled ductable split/ceiling mounted Cassette type air-conditioning unit	Voltas/Hitachi / Carrier/Panasonic/Blue star/ Toshiba/Daikin
64.	PVC water tank	Syntex/ Polycon
65.	Water Cooler	Blue Star/Usha/Sidwal/Voltas
66.	Tower AC units	Voltas/Hitachi / Carrier/Panasonic/Blue star/ Toshiba/Daikin
67.	Inverter VRF system	Voltas/Hitachi / Carrier/Panasonic/Blue star/ Toshiba/Daikin/Mitsubishi Electric
68.	Hi wall type chilled water FCU	Cruise/Zeco/Edgetech/Kubic Midea/Trane

69.	Wet scrubber	Zeco/Edgetech/ZAIR
70.	Air washer (Evaporative cooling unit)	Carryaire/Zeco/Zair/Edgetech/Airflow
71.	Pre-Insulated Pipe	Zeco/Sevenstar-aircon/AGS Engineering
72.	VAV Boxes	Ruskin Titus/Honeywell/Trox/Trane/Johnson Controls/Tristar
73.	Axial Fans	Krugar/Nicotra/Comefri/Green Deck/Airflow
74.	Spiral Flat Oval Duct (with GSS sheets of approved make)	Dustech/GP spira/Spiral Tubes/Western air ducts/Ductofab /Seven star
75.	Silicone flexible duct connector	Easyflex/Airflow//Resistoflex/Dustech
76.	Motorized butterfly valve/ Modulating Valve/Solenoid valve	Advance/Danfoss/Belimo/Johnson Control/Zoloto/Tyco/Victaulic/Honeywell
77.	Expansion Bellow	Easyflex/Resistoflex/Cori
78.	Fire rated vane Axial/Fire rated tube Axial/Vane Axial/Tube Axial Fan	Nicotra/Comferri/Kruger/Greenheck/Airflow/system air/Zair
79.	Inline Fan	Nicotra/ Kruger/Greenheck/Airflow/system air
80.	Propeller fan	Nicotra/ Kruger/Caryaire/Crompton/GE
81.	Paint/Anti Corrosive coating	Nerolac/Asian/Berger
82.	Self-Cooled PAC sever Rack	Schneider/Emersion/ Flakt
83.	Victaulic coupling	Sevcon/Victaulic/Smith Copper