IIT PALAKKAD

Indian Institute of Technology Palakkad
भारतीय प्रौद्योगिकी संस्थान पालक्काड
Nurturing Minds For a Better World

NOTICE INVITING TENDER FOR

TENDER NO. 17/IITPKD/EWD/CIVIL/2025-26/157

S. No.	Events	Date and Time
1.	**Notice Inviting BID (NIT) No.**	17/IITPKD/EWD/CIVIL/2025-26/157
2.	**Name of Work**	Construction of Permanent campus for IIT Palakkad under Phase 1A -SH: Furniture & Fittings SW: Providing & Fixing Furniture for Chemistry Lab at Room No:15, Bio wet Lab at Room No: 17 & 18 and Fluorescence Spectroscopy Lab at 146, 145A and 145 of B03 Department Building – Sahyadri Campus.
3.	**Date of Publication**	**18-08-2025**
4.	**Date / Time of closing**	**08-09-2025, 11:00 Hrs**
5.	**Opening of Eligibility cum technical Bids**	**08-09-2025, 11:30 Hrs**
6.	**Earnest Money Deposit (EMD)**	**Rs. 2,55,635**

Engineering works Division
Indian Institute of Technology Palakkad
Kanjikode West, Palakkad – 678 623
Phone 0491 209 2153
Email: ewd@iitpkd.ac.in

Indian Institute of Technology Palakkad (hereinafter called "IITPKD") invites ONLINE item rate Bids (Cover-1: Eligibility cum technical Bid, Cover-2: Financial Bid) from approved and eligible contractors at Sahyadri Campus, Pudussery PO, Kanjikode West, Palakkad- 678623. Interested bidders may submit their bids ONLINE at https://mhrd.ewizard.in/

1.	Name of Work	Construction of Permanent campus for IIT Palakkad under Phase 1A -SH: Furniture & Fittings SW: Providing & Fixing Furniture for Chemistry Lab at Room No:15, Bio wet Lab at Room No: 17 & 18 and Fluorescence Spectroscopy Lab at 146, 145A and 145 of B03 Department Building – Sahyadri Campus.
2.	Earnest Money Deposit (EMD)	Bids without paying the EMD in gateway of E-Wizard portal shall be DISQUALIFIED
4.	Period of completion	75 Days
5.	Validity of the tender	75 days from the date of opening of the eligibility bid.
6.	Last Date for Submission of e-Tender	**08-09-2025, 11:00 Hrs**
7.	Date of Opening of the Eligibility document	**08-09-2025, 11:30 Hrs**
8.	Date of opening of the financial bid	Will be intimated later to eligible bidders through online in E- Wizard portal

DEFINITION

Officer inviting tender : Chairman, EWD

Engineer in charge **:** Assistant Engineer (Civil), EWD

Accepting authority : Chairman, EWD

Time allowed for submission of Performance security : 7 days

Maximum allowable extension with late fee at the rate of 0.1% of PS per day beyond the period of 7 days - 5 days.

No of days from the date of issue of letter of acceptance for recurring date of start : 7 days

1. GENERAL

1.1 Indian Institute of Technology Palakkad (hereinafter called "IITPKD") invites online item rate tenders under two-bid System. The bid document consists of a schedule of quantities of various items to be executed, scope of works, terms and conditions of the contract and other necessary documents can be seen and downloaded from https://mhrd.ewizard.in/.

1.2 The bids will be opened by the competent authority of IIT Palakkad on behalf of the IIT Palakkad

1.3 The bids shall be submitted online in MHRD Portal (https://mhrd.ewizard.in/)

1.4 The responsibility of submission of the bids on or before the last date shall rest with the tenderer.

1.5 Canvassing, whether directly or indirectly, in connection with bids is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

1.6 The bidder shall bear all costs associated with the preparation and submission of his bid and IITPKD shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tender process.

1.7 IITPKD will respond to any request for clarification or modification of the Tender Document that is received up to FIVE (05) days prior to the deadline for submission of bids prescribed by IITPKD. For this purpose, the prospective bidder(s) requiring clarification in the Tender Document shall notify IITPKD in writing at the address mentioned. Any such clarification, together with all details on which the clarification had been sought, will be published on the E-Wizard website. Post tender clarification will not be accepted.

1.8 Except for any such clarification by the Institute, which is expressly stated to be an addendum/Corrigendum to the tender document issued by the Chairman, EWD, IIT Palakkad, no written or oral communication, presentation, or explanation by any other employee of any of the Sections/Departments of the Institute, shall be taken to bind or fetter the Institute.

1.9 EARNEST MONEY DEPOSIT (EMD)

i. The bidder shall furnish EMD of Rs. 2,55,635 /- through an online payment gateway in the E-Wizard.

ii. Bids without paying the EMD in gateway of E- Wizard portal shall be DISQUALIFIED.

iii. EMD of the successful bidder shall be returned on receipt of the prescribed Performance Security and after signing of the contract agreement.

iv. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of the final bid validity and latest by the 30th day after the award of the contract.

v. 100% EMD shall be forfeited

a. if the bidder withdraws his bid during the period of validity of the tender.

b. if the successful bidder refuses or neglects to execute the contract or fails to furnish the required performance security within the time frame specified by the institute.

c. if the successful bidder fails to execute the Contract on specified timeline

vi. MSME firms registered in NSIC under PP policy are not exempted from payment of EMD for this work.

2. ADDENDUM / CORRIGENDUM IN THE TENDER DOCUMENT

2.1 At any time prior to the deadline for submission of bids, IITPKD may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Tender Document by way of amendment(s)/ Corrigendum

2.2 Addendum/Corrigendum will be intimated through the E- Wizard portal and the bidders shall ensure that the addendums are carried out in the bid before submission. The addendums will not be published in newspapers. Bidders should regularly visit the E-Wizard portal to keep themselves updated.

2.3 No extension in the bid due date/ time shall be considered on account of delay in submission of bid.

3. COMPOSITION OF THE TENDER DOCUMENT

3.1 The Tender Document comprises of:

(a) Schedule of Quantity (Annexure - I)
(b) Pre-qualification Criteria (Annexure-II)
(c) Documents to be uploaded (Annexure III)
(d) Format of Performance Security (Annexure-IV)
(e) Declaration (Annexure-V)
(f) Fall clause notification certificate (Annexure VI)
(g) Letter of Transmittal (Annexure - VII)
(h) Details of similar work (Annexure - VIII)
(i) Performance report for the completed works (Annexure -IX)
(j) Declaration for not blacklisted / debarred (Annexure X)

The bidder shall not make or cause to be made any alteration, erasure or obliteration to the text of the Tender Document.

4. LANGUAGE/FORMAT/SIGNING OF THE BID

4.1 The bid prepared by the Bidder and all correspondence and documents related to the tender exchanged by the Bidder and IITPKD shall be in English and the Contract shall be construed and interpreted in accordance with that language. If any of the brochures, leaflets or communication is prepared in any language other than English, a translation of such document, correspondence or communication shall also be provided at the cost and risk of the bidder. The translation so provided shall prevail in matters of interpretation. The bidder, with respect to such documents, correspondence and communications, shall bear the costs and risks of such translation.

4.2 The bid shall not contain any internalizations, erasures, overwriting, except to correct errors made by the bidder, in which case the person or persons signing the bid shall initial such corrections with date.

5. Bids submitted in any mode other than ONLINE will be rejected outright. No prices should be included in the technical bid. Financial Bid should be filled as per the format given in the financial bid document. Indicating Price in the eligibility bid will be disqualified.

5.1 All offered products' technical Specifications and Brochures are to be submitted along with the Technical Bid

6. ITEM RATE CONTRACT

The bid should indicate item-wise prices for the items mentioned. The items for which the rates are not quoted will be considered as ZERO, and the agency shall complete that item of work without any claim. The contractor must ensure to quote the rate in prescribed columns.

7. CONFORMITY OF THE TENDER DOCUMENT

The bid document consisting of specifications, the schedule of quantities of various items to be executed and the terms and conditions of the contract and other necessary documents can be seen in the tender document.

8. PERIOD OF VALIDITY OF BIDS

Bids shall remain valid for a period of 75 days after the date of deadline for submission of bids prescribed by the Institute.

9. MODIFICATION AND WITHDRAWAL OF BIDS

The bidders may modify or withdraw the bid after submission only through ONLINE mode, within the period of deadline for submission of bids. No bids can be modified subsequent to the deadline for submission of Bids. No bids can be withdrawn in the interval between the bid submission

deadline and the expiration of the bid validity period.

10. OPENING AND EXAMINATION OF BIDS

10.1 The Technical bids will be opened on the prescribed date and time as mentioned in the Bid document in ONLINE mode.

10.2 The Institute will evaluate the technical bids for the eligibility criteria. Those bids who satisfy the eligibility criteria will be considered for opening their financial bids. Those bids which are found to be either non-responsive, or not satisfying the eligibility criteria will not be considered for opening their financial bids and will be rejected.

10.3 The date of opening of financial bid (cover 2) will be intimated later to the eligible bidders through E- wizard portal.

10.4 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, the unit or subtotal price shall prevail and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words shall prevail.

11. CLARIFICATION OF BIDS

During the bid evaluation, the Institute may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be through ONLINE mode ONLY and no change in the price or substance of the bid shall be sought, offered or permitted.

12. AWARD CRITERIA

The competent authority on behalf of the IIT Palakkad does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without assigning any reason. All bids in which any of the prescribed conditions is not full fill including that of conditional rebate is put forth by the bidders shall be summarily rejected. The competent authority on behalf of the IIT Palakkad reserves to himself the right to accept the whole or any part of the bid and the bidders shall be bound to perform at the rates quoted.

The Institute reserves the right to buy different items/quantities from different bidders considering price of individual/group of furniture or any other factors as decided by the Institute.

13. INSTITUTE RIGHT TO ACCEPT/REJECT BIDS

The Institute reserves the right to accept or reject any bid or to annule the bidding process and reject all bids at any time prior to Contract award, without thereby incurring any liability to the Bidders.

14. AWARD OF WORK/PURCHASE ORDER

Prior to the expiration of the period of bid validity, the institute will issue the Work Order to the successful Bidder in writing. The Work Order will form part of the Contract.

15. CONTRACT AGREEMENT

On receipt of work Order from the Chairman (EWD), the successful bidder shall sign with the date on each page of the work order and return it to the Chairman EWD, along with the Performance Security. Copy of the Work Order duly signed by the successful Bidder on each page shall constitute the Contract Agreement.

16. PERFORMANCE SECURITY

Within SEVEN DAYS of receipt of notification of award from the Chairman EWD, the successful Bidder shall furnish the performance security equal to 5% of the Contract value The Performance Security shall be valid all along the contract period and shall extend up to sixty (60) days after the date of completion of work accepted by the Engineer in Charge.

The performance security shall be a bank guarantee (in the format as provided in (in the format as provided in Annexure- IV of the bidding documents) issued by any Scheduled Bank in India acceptable to the Purchaser or a Demand Draft favoring, INDIAN INSTITUTE OF TECHNOLOGY

PALAKKAD payable at PALAKKAD. The performance security shall be returned to the contractor not later than fifteen (15) days after its expiration.

16.1. **SECURITY DEPOSIT:** 2.5% of tendered value. The contractor whose tender is accepted will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 2.5% of the tendered value of the work. Fixed Deposit Receipt of a Scheduled Bank or will also be accepted for this purpose provided confirmatory advice is enclosed.

16.2 CONTRACTOR LIABLE FOR DAMAGES, DEFECTS DURING DEFECT LIABILITY PERIOD (12 MONTHS)

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twelve months (six months in the case of work costing Rs. Ten lakhs and below except road work) after a certificate final or otherwise of its completion shall have been given by the Engineer in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of twelve months (six months in the case of work costing Rs. Ten lakhs and below except road work) after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later. Provided that in the case of road work, if in the opinion of the Engineer-in-Charge, half of the security deposit is sufficient, to meet all liabilities of the contractor under this contract, half of the security deposit will be refundable after six months and the remaining half after twelve months of the issue of the said certificate of completion or till the final bill has been prepared and passed whichever is later

17. CONTRACT DOCUMENTS

All documents forming part of the Contract (and all parts of these documents) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole. The order of precedence of the Contract documents shall be as follows:

1. Contract Agreement
2. All other Forms
3. Bid documents

18. AMENDMENT TO CONTRACT

No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract and is signed by a duly authorized representative of each party to the Contract.

19. CONTRACTORS RESPONSIBILITIES

The Contractor's obligations involve:

The work shall be executed as per Schedule of quantity / CPWD specifications and as per direction of Engineer /officer in charge of IIT Palakkad.

20. GOVERNING LAW

The Contract shall be governed by and interpreted in accordance with the laws of India.

21. TIME AND EXTENSION FOR DELAY

The time allowed for execution of the Works shall be 75 days or the extended time in accordance with these conditions given below shall be the essence of the Contract. The execution of the work shall commence from such time period as mentioned in the Bid or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is laterThe contractors are advised to make site visits before participating in the tender. No such escalation claims will be entertained once taken up the work for any items mentioned in the schedule of quantity.

The supplying materials related to work completion, necessary transportation permits should be taken care of by the contractor.The work to be completed by the contractor at site including loading unloading transportation, handling & rehandling and required manpower charges etc.

22. TIME ALLOWED FOR CARRYING OUT THE WORK

The time allowed for carrying out the work will be 75 days from the date of start. The date of start shall commence from the 7th day of issue of work order. The agency shall complete the work within the period specified in the tender document and sign the work order or within the period mutually agreed between Institute and Contractor.

23. TERMS OF PAYMENT

No Advance payment will be made. Running account shall be made by the Engineer in charge, EWD as per the Execution of items in the BOQ. 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 - Rs. 15 Lakhs

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier.

No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period specified here in under, the period being reckoned from the date of receipt of the bill by the Engineer-in- Charge, complete with account of materials issued by the Department and dismantled materials.

(a) If the Tendered value of work is up to 1 Crore : 2 months

(b) If the Tendered value of work is more than Rs 1 Crore and up to Rs. 10 Crore : 3 months

24. TAXES AND DUTIES

The Contractor should ensure payment of all taxes, GST, levies and charges assessed by all municipal, state or national government authorities, in connection with the Goods and Services supplied under the Contract. Nothing extra shall be paid on any account. Rates quoted shall be inclusive of all taxes and duties

25. ASSIGNMENT

The agency shall not assign to any third party of the awarded Contract or any part thereof without the prior written consent of the Institute.

If the Contractor commits default in commencing the execution of the work as aforesaid, the performance guarantee shall be forfeited by the Engineer in Charge and shall be absolutely at the disposal of the Institute without prejudice to any other right or remedy available in law.

25.1 As soon as possible but within 7 (seven) working days of award of work and in consideration of

(a) Schedule of handing over of site as specified in the bid

(b) Schedule of issue of drawings if applicable as specified in the bid

i. The Contractor shall submit a Time and Progress Chart for each milestone. The Engineer-in-Charge may within 7 (seven) working days thereafter, if required modify, and

communicate the program approved to the contractor failing which the program submitted by the contractor shall be deemed to be approved by the Engineer-in-Charge. The work programme shall include all details of balance drawings and decisions required to complete the contract with specific dates by which these details are required by the contractor without causing any delay in execution of the work. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents.

ii. In case of non submission of a construction programme by the contractor the program approved by the Engineer-in-Charge shall be deemed to be final.

iii. The approval by the Engineer-in-Charge of such a programme shall not relieve the contractor of any of the obligations under the contract.

iv. The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-Charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery of Rs.1000 / week shall be made per week or part basis in case of delay in submission of the monthly progress report .

25.2 If the work(s) be delayed by:-

(i) force majeure, or

(ii) abnormally bad weather, or

(iii) serious loss or damage by fire, or

(iv) civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

(v) delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or

(vi) any other cause like above which, in the reasoned opinion of the Engineer-in-Charge is beyond the Contractor's control.

then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works. The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause 25.2.

The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause above

25.3 In case the work is hindered by the Department or for any reason/event, for which the Department is responsible. The authority as indicated in Bid , if justified, give a fair and reasonable extension of time and reschedule the milestones for completion of work Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law; provided further that for concurrent delays under this sub clause and sub clause 25.2 to the extent the delay is covered under sub clause above the contractor shall be entitled to only extension of time and no damages. Request for rescheduling of Milestones or extension of time and no damages.

25.4 Request for rescheduling of Milestones or extension of time,to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed forms i.e. Form of application by the contractor for

seeking rescheduling of milestones or Form of application by the contractor for seeking extension of time respectively to the authority as indicated in Bid. The Contractor shall indicate in such a request the period by which rescheduling of milestone/s or extension of time is desired. With every request for rescheduling of milestones, or if at any time the actual progress of work falls behind the approved programme by more than 10% of the stipulated period of completion of contract, the contractor shall produce a revised programme which shall include all details of pending drawings and decisions required to complete the contract and also the target dates by which these details should be available without causing any delay in execution of the work. A recovery as specified in Bid shall be made on a per day basis in case of delay in submission of the revised programme.

25.4.1 In any such case the authority as indicated in Bid may give a fair and reasonable extension of time for completion of work or reschedule the milestones. Engineer -in-Charge shall finalize/ reschedule a particular mile stone before taking an action against subsequent mile stone .Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Bid in writing, within 21 days of the date of receipt of such request from the Contractor in prescribed form. In event of non application by the contractor for extension of time E-in-C after affording opportunity to the contractor, may give, supported with a programme a fair and reasonable extension within a reasonable period of occurrence of the event.

25.5 In case the work is delayed by any reasons, in the opinion of the Engineer-in-Charge, by the contractor for reasons beyond the events mentioned in clause 25.2 or clause 25.3 or clause 25.4 and beyond the justified extended date; without prejudice to right to take action under Clause 26, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of milestones. The contractor shall be liable for levy of compensation for delay for such extension of time

26. WHEN CONTRACT CAN BE DETERMINED

Subject to other provisions contained in this clause, the Engineer-in-Charge may, without prejudice to any other rights or remedy against the contractor in respect of any delay, not following safety norms , inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

i. If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

ii. If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.

iii. If the contractor fails to complete the work or section of work with individual date of completion on or before the stipulated or justified extended date, on or before such date of completion; and the Engineer in Charge without any prejudice to any other right or remedy under any other provision in the contract has given further reasonable time in a notice given in writing in that behalf as either mutually agreed or in absence of such mutual agreement by his own assessment making such time essence of contract and in the opinion of Engineer-in-Charge the contractor will be unable to complete the same or does not complete the same within the period specified.

iv. If the contractor persistently neglects to carry out his obligations under the contract and/ or commits default in complying with any of the terms and conditions of the contract and does

not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge.

v. If the contractor shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for Government.

vi. If the contractor shall enter into a contract with Government in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge.

vii. If the contractor had secured the contract with the Government as a result of wrong tendering or other non-bonafide methods of competitive tendering or committed a breach of Integrity Agreement.

viii. If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

ix. If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

x. If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.

xi. If the contractor assigns (excluding part(s) of work assigned to other agency(s) by the contractor as per terms of contract), transfers, sublets (engagement of labor on a piece-work basis or of labor with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer -in-Charge. When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the President of India shall have powers:

(a) To determine the contract as aforesaid so far as performance of work by the Contractor is concerned (of which determination notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination, Security Deposit already recovered, Security deposit payable and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Government.

(b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work including any new items needed to complete the work. In the event of above courses being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or

procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

27. WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, ORDERS ETC.

The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department specified in Bid or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labor and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

28. DEVIATIONS/ VARIATIONS EXTENT AND PRICING

The Engineer-in-Charge shall have power

i. to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and

ii. to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereinafter provided.

28.1 . The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows :

(I) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus

(II) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge

28.2 In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) submit market rate claim rates, supported by proper analysis

which shall include invoices, vouchers etc. and Manufacturer's specification for the work failing which the rate approved later by the Engineer- in-charge shall be binding and the Engineer-in-Charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined, failing which it will be deemed to have been approved.

28.3 In the case of contract items which exceed the limits laid down in bid, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates (as per invoice, vouchers from the manufacturers or suppliers submitted by the agency and duly verified by Engineer in Charge or his representative) and the contractor shall be paid in accordance with the rates so determined. The prescribed time limit for finalizing rates for Extra Item(s) and Deviated Quantities of contract items is within 45 days after submission of proposal by the contractor without observation of the Engineer-in-Charge.

29. ACTION IN CASE WORK NOT DONE AS PER SPECIFICATIONS

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in - charge, his authorized subordinates in charge of the work and all the superior officers, any of the organization engaged by the Institute for Quality Assurance and of the Chief Technical Examiner's Office, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

If it shall appear to the Engineer-in-charge or his authorized subordinates in charge of the work or the officers of the organization engaged by the Institute for Quality Assurance or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 30 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority specified in the bid may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the

structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

30. COMPENSATION FOR DELAY

If the contractor fails to maintain the required progress in terms of Clause 25 or to complete the work and clear the site on or before the contract or justified extended date of completion as per Clause 25 (excluding any extension under para 25.5) as well as any extension granted under Clause 28, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as compensation the amount calculated at the rates stipulated below as the authority specified in bid may decide on the amount of accepted Tendered Value of the work for every completed day/ month (as determined) that the progress remains below that specified in Clause 25 or that the work remains incomplete.

(i) Compensation for delay of work

With maximum rate @ 1% (one percent) per month of delay to be computed on a per day basis based on the quantum of damage suffered due to stated delay on the part of the Contractor.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10 % (ten percent) of the accepted Tendered Value of work or of the accepted Tendered Value of the Sectional part of work as mentioned in the bid for which a separate period of completion is originally given.

In case no compensation has been decided by the authority in bid during the progress of work, there shall be no waiver of right to levy compensation by the said authority if the work remains incomplete on the final justified extended date of completion. If the Engineer in Charge decides to give further extension of time allowing performance of work beyond the justified extended date, the contractor shall be liable to pay compensation for such extended period. If any variation in the amount of contract takes place during such an extended period beyond justified extended date and the contractor becomes entitled to additional time under Clause 28, the net period for such variation shall be accounted for while deciding the period for levy of compensation. However, during such further extended period beyond the justified extended period, if any delay occurs by events under sub Clause 25.2, the contractor shall be liable to pay compensation for such delay

Provided that compensation during the progress of work before the justified extended date of completion for delay under this clause shall be for non-achievement of sectional completion or part handing over of work on stipulated/justified extended date for such part work or if delay affects any other works/services. This is without prejudice to right of action by the Engineer in Charge under para 26 for delay in performance and claim of compensation under that clause.

In case action under Clause 30 has not been finalized and the work has been determined under Clause 26, the right of action under this clause shall remain post determination of contract but levy of compensation shall be for days the progress is behind the schedule on date of determination, as assessed by the authority in Schedule F, after due consideration of justified extension. The compensation for delay, if not decided before the determination of contract, shall be decided after the determination of contract.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case, the contractor does not achieve a particular milestone mentioned in the bid, or the re-scheduled milestone(s) in terms of Clause 25.4, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied as above. With-holding of this amount on failure to achieve a milestone, shall be automatic without any notice to the contractor. However, if the contractor

catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), the amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

Carrying out part work at risk & cost of Contractor

If contractor:

(i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 working days in this respect from the Engineer-in-Charge; or

(ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 working days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

(iii) The Engineer- in-Charge without invoking action under Clause 26 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Government, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:

a. Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or

b. Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by Government because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor.

The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by Government in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by Government as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Government in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.

In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract

Name of Work: Construction of Permanent campus for IIT Palakkad under Phase 1A - SH: Furniture & Fittings SW: Providing & Fixing Furniture for Chemistry Lab at Room No:15, Bio wet Lab at Room No:17 & 18 and Fluorescence Spectroscopy Lab at 146, 145A and 145 of B03 Department Building – Sahyadri Campus.

I. Earnest Money : Rs.2,55,635 /-
II. Performance Guarantee: 5% of value
III. Security Deposit : 2.5% of the contract

GENERAL RULES & DIRECTIONS:

Officer inviting tender	Chairman (EWD)
Engineer-in-Charge	Engineer in charge (Civil)
Accepting Authority	Chairman (EWD) with approval of Director, IIT Palakkad
Authority for fixing liquidated damages	Chairman, EWD

31. SETTLEMENT OF DISPUTES & ARBITRATION

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:

I. If the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge or if the Engineer in Charge considers any act or decision of the contractor on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable and is disputed, such party shall promptly within 15 days of the arising of the disputes request the Chairman (EWD), or where there is no Chairman (EWD) request the Director, IIT Palakkad who shall refer the disputes to Dispute Redressal Committee (DRC) within 15 days along with a list of disputes with amounts claimed if any in respect of each such dispute. The Dispute Redressal Committee (DRC) gave its decision within a period of 60 days extendable by 30 days by consent of both the parties from the receipt of reference from

Chairman (EWD) / Director, IIT Palakkad. The constitution of the Dispute Redressal Committee (DRC) shall be as indicated in bid. Provided that no party shall be represented before the Dispute Redressal Committee by an advocate/legal counsel etc.

The DRC will submit its decision to the concerned Chairman (EWD) / Director, IIT Palakkad for acceptance. Chairman (EWD) in a time limit of 30 days from receipt of DRC decision will convey acceptance or other wise on the said decision .If the Dispute Redressal Committee (DRC) fails to give its decision within the aforesaid period or the Chairman (EWD) / Director, IIT Palakkad fails to give his decision in the aforesaid time limit or any party is dissatisfied with the decision of Dispute Redressal Committee (Chairman (EWD) the neither party may within a period of 30 days from the receipt of the decision of Dispute Redressal Committee (DRC), Chairman (EWD) / Director, IIT Palakkad or on expiry of aforesaid the time limits available to DRC / Chairman (EWD) / Director IIT Palakkad may give notice to the Chairman (EWD) / Director, IIT Palakkad for appointment of arbitrator on prescribed proforma as per Annexure - X under intimation to the other party.

It is a term of contract that each party invoking arbitration must exhaust the aforesaid mechanism of settlement of claims/disputes prior to invoking arbitration. Director, IIT Palakkad will be the authority for appointing arbitrators.

Director, IIT Palakkad shall in such case appoint the sole arbitrator as the case may be within 30 days of receipt of such a request and refer such disputes to arbitration.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed, if any, in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the decision of the Chairman (EWD) / Director, IIT Palakkad on the finding / recommendation of DRC.

Parties, before or at the time of appointment of Sole arbitrator may agree in writing for fast track arbitration as per the Arbitration and Conciliation Act, 1996 (26 of 1996) as amended in 2015.

Subject to provision in the Arbitration and Conciliation Act, 1996 (26 of 1996) as amended in 2015 whereby the counter claims if any can be directly filed before the arbitrator without any requirement of reference by the appointing authority. The arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs. 1,00,000/-, the arbitrator shall give reasons for the award

The place of arbitration shall be Palakkad.

32. WARRANTY The bidder should offer the warranty period of minimum “THREE YEARS” for the manufactured Furniture. The security deposit will be withheld against the warranty period and the withheld amount will be released after completion of warranty period.

CHAIRMAN, EWD

ANNEXURE I

Name of Work: Construction of Permanent campus for IIT Palakkad under Phase 1A -SH: Furniture & Fittings SW: Providing & Fixing Furniture for Chemistry Lab at Room No:15, Bio wet Lab at Room No:17 & 18 and Fluorescence Spectroscopy Lab at 146, 145A and 145 of B03 Department Building – Sahyadri Campus.

Item No:	Description of Items	Quantity	Unit
1	Fabrication and installation of work Table with following specification:- 1) 18 mm mirror polished jet black granite top, edges molded over C frame of CRCA sheet (confirming IS code 513:2008), horizontal and tying frame made of C frame with size 60 x 40 x2.6 mm. 2) With 20 gauge CRCA sheet modesty for the full length of the table. 3) The entire table shall be finished with an epoxy polyester powder coating of 80–100 microns thickness Refer Drawing No.IITPKD/EWD/B03/CHEMISTRY LAB/01 (For Item No: 1.1,1.2 & 1.3) & Drawing No.IITPKD/EWD/B03/BIO-WET LAB/01 (Refer B for Item No: 1.4) The storage unit shown in the drawing will be executed and paid under item no.3		
1.1	Size: 4.63 (L) x 0.65 (W) x 0.90 (H) m	1	each
1.2	Size: 6.1 (L) x 0.90 (W) x 0.90 (H) m	1	each
1.3	Size: (2.735 + 4.145 + 3.70 m) outer dimension x 0.90 (W) x 0.90 (H) (Refer: IITPKD/EWD/B03/BIO-WET LAB/02 & IITPKD/EWD/B03/BIO-WET LAB/03)	1	each
1.4	Size: 1.2 (L) x 0.75 (W) x 0.90 (H) m (Refer: IITPKD/EWD/B03/BIO-WET LAB/02 & IITPKD/EWD/B03/BIO-WET LAB/03)	36	each
2	Fabrication and installation of work table with following specification:- 1) 18 mm mirror polished jet black granite top, edges molded over C frame of CRCA sheet (confirming IS code 513:2008), horizontal and tying frame made of C frame with size 60 x 40 x2.6 mm. 2) With 20 gauge CRCA sheet modesty for the full length of the table. 3) The electrical sockets connections with the electrical tray at the top of the granite slab. 4) The entire table shall be finished with an epoxy polyester powder coating of 80–100 microns thickness 5) The full length of the table shall be fitted with a reagent rack positioned as vertical, fabricated from 20-gauge galvanized steel, featuring a minimum zinc coating of 120 gsm and an epoxy polyester powder coating of 80–100 microns thickness. Each Table should be provided with following electrical facility in the cable tray: 6) 2 nos 15/16A Amps modular Socket outlet (Make: Legrand Myrius 6730 45 or equivalent of Schnider/Siemens) and 2 nos. 15/16 amps modular switch with LED indication (Make: Legrand Myrius 6730 10 or equivalent of Schnider/Siemens) suitable for the same on 6 module sheet (Make: Legrand Myrius 6732 08 or equivalent of Schnider/Siemens) no. of sets required as below. For Item No: 2.1 - 12 sets		

	For Item No: 2.2 - 4 sets For Item No: 2.3 - 16 sets For Item No: 2.4 - 8 sets Refer Drawing No.IITPKD/EWD/B03/CHEMISTRY LAB/01 (For Item No: 2.1 & 2.2) & Drawing No.IITPKD/EWD/B03/BIO-WET LAB/01 (For Item No: 2.3 & 2.4) The storage unit shown in the drawing will be executed and paid under item no.3		
2.1	Size: 4.63 (L) x 1.50 (W) x0.90 (H) m	3	each
2.2	Size : 3.6 (L) x 0.8 (W) x 0.90 (H) m	1	each
2.3	Size:4.8 (L) x1.50 (W) x0.90 (H) m (Refer: IITPKD/EWD/B03/BIO-WET LAB/02 & IITPKD/EWD/B03/BIO-WET LAB/03)	4	each
2.4	Size: 4.8 (L) x 0.75 (W) x 0.90 (H) m (Refer: IITPKD/EWD/B03/BIO-WET LAB/02 & IITPKD/EWD/B03/BIO-WET LAB/03)	2	each
3	Providing and fixing steel Storage Unit below the work bench manufactured with 20 gauge electro galvanized sheet with epoxy polyester powder coating of 80–100 microns thickness with top drawer and bottom cupboard with door and locking arrangement. Bottom cupboard will have one horizontal partition as per the Drawing No.IITPKD/EWD/B03/CHEMISTRY LAB/01 (For Item No: 3.1 & 3.2) & Drawing No.IITPKD/EWD/B03/BIO-WET LAB/01 (For Item No: 3.3)		
3.1	Size:0.50 (W) x 0.90 (H) x 0.75 (D) m	9	each
3.2	Size:0.75 (W) x 0.90 (H) x 0.75 (D) m	23	each
3.3	Size:0.535 (W) x 0.60 (H) x 0.45 (D) m	154	each
4	Supply and fixing of Laboratory Table including corner table as per the Drawing No: IITPKD/EWD/B03/FSL/01 and the specifications given below:- 1. Table top made of 18mm thick polished jet black granite top with edges molded over C frame of CRCA sheet (conforming IS code 513:2008) of size 60 x 40 x 2.6 mm with 2 no:s horizontal frame of 60 x 40 x 2.6 mm tying the C frame. 2. Modesty to be made with 20 gauge CRCA sheet for the full length of the table. 3. Drawer and cupboard made of 20 gauge electro galvanized sheet with epoxy polyester powder coating (80 - 100 microns) with double side openable door and locking arrangement including recessed handles (one on the drawer and one each on the doors)		
4.1	6.40 (L) x 0.90 (W) x 0.90 (H) mm	1	each
4.2	1.8 (L) x 0.90 (W) x 0.90 (H) m	2	each
5	Providing and fixing 1 No P.P Sink in the work bench (Item No.2.1, 2.2, 2.3 & 2.4) and the sink should be injection molded from polypropylene co-polymer resin.The impact resistance should be high which will minimize damage during and after installation. The sink should be with a self-draining base and should be suitable for mounting on top or underside of the workbench, the sink should be compatible with a vast number of acids,alkalis and reagent. The sink shall have a bottle trap with a reducing coupler of size 51 x 31 mm and with 38mm polypropylene pipe of one-foot length. All gaskets		

	and O-rings are made from nitrile and the water tap will be 3 way swan neck brass powder coated. All services fixtures and taps shall be color coated according to international norms. These fixtures must have a properly designed knob grip to turn the knob easily.		
5.1	Sink Size- 0.60 (L) X 0.450 (W) x 0.315 (D) m	17	each
6	Supply and installation of PP sink unit comprising black polished granite top of 18 mm thickness, supported on frame fabricated from 60 × 40 mm GI square tubes of 2.6 mm thickness, with a storage cabinet provided beneath. The storage cabinet shall be constructed from 20-gauge GI sheet and finished with an epoxy polyester powder coating of 80–100 microns over the entire frame and cabinet surfaces. The sink shall be of size 560 × 355 mm, complete with a bottle trap fitted with a reducing coupler of 51 × 31 mm size, and a 38 mm polypropylene waste pipe of one-foot length. All gaskets and O-rings shall be of nitrile rubber. The water tap shall be a three-way swan-neck type, manufactured from brass with powder-coated finish, and all service fixtures, including taps, shall be color-coded in accordance with relevant international standards. The unit shall incorporate a storage compartment below the sink, fitted with a door shutter, and all knobs shall be ergonomically designed for ease of operation. Note: The quoted rate shall include all necessary cut-outs in the granite slab for fixing the PP sink, including edge molding and finishing works.		
6.1	Size- 0.6 (L) x 0.6 (W) x 0.75 (H)	3	each
7	Supply, delivery, and installation of overhead wall-mounted storage cabinets of front-open type with horizontal partitions, constructed from 20-gauge G.I. electro-galvanized sheets with epoxy polyester powder coating (60–80 microns), shutters made of metal frames with 4 mm thick toughened glass, stainless steel powder-coated handles, and branded locking arrangements, fixed to the wall through eyelet holes, each having a minimum load-bearing capacity of 60 kg, with color shade approved by the Engineer-in-Charge, and executed as per Drawing No. IITPKD/EWD/B03/CHEMISTRY LAB/01 (Item No. 7.1) and Drawing No. IITPKD/EWD/B03/BIO-WET LAB/01 (Item No. 7.2)		
7.1	Size - 0.75 (L) x 0.35 (D) x 0.6 (H) m	6	each
7.2	Size- 0.6 (L) X 0.4 (D) X 0.6 (H) m	80	each
8	Supply, installation, and commissioning of laboratory fume hood for Chemistry/Bio-wet Lab constructed with knock-down (KD) modular panel construction and integrated airfoil design for optimum aerodynamic performance. The fume hood shall comply with ASHRAE Standard 110-1995 and EN-14175 performance testing by a certified third party. The fume hood unit should be provided along with all accessories, including worktop, base cabinets, service fittings, and electricals. Packing, transport, and handling are to be included. **Technical Specifications:** Superstructure Frame: Free-standing rigid panel construction made from powder-coated steel.	3	each

	Interior Walls: Double-walled ends (max. 6" wide) to optimize the internal working space. Hidden area for housing remote control valves. Service cut-outs with fastener-free covers. Vertical fascia to include all service controls, electrical switches, and sockets. Airfoil: Integrated streamlined airfoil at the hood's bottom opening, made from 1.2 mm steel. Provides a 20 mm airflow gap over the work surface. Separate sash handle for airflow provision when sash is fully closed. Baffle: Non-adjustable single-slot rear baffle to maintain uniform airflow. Detachable for maintenance. Lattice rod made of SS/epoxy-coated/brass included for sample clamp holding. Duct Collar: 10–12 inch diameter, funnel-shaped, polyethylene round duct collar fitted at the top of the plenum. Lighting: Two external fluorescent light fixtures (20V each, including CFL tubes) mounted outside the fume chamber to prevent contamination and ensure safety. Sash: Vertically sliding sash with 4 mm thick toughened glass in a steel frame. Full-length metal handle. Counterweight system for smooth operation and tilt prevention. Minimum protrusion sash track to reduce airflow turbulence. Utility Services (4 Nos.): Remote control valves for services such as Water, Nitrogen, Vacuum, Compressed Air, etc. Color-coded plastic handles. Fittings to be powder-coated brass (water) and standard needle valve type (gases). Push-and-turn safety valves for combustible gases. Electrical System: Fully wired superstructure with Control Box including MCB, blower starter, and safety trip. Plug-and-play system compatible with 3-phase input power. Includes: 4–6 Nos. 230V, 5/16A, 50 Hz electrical sockets (NORISYS make), 2 Nos. optional industrial sockets. Liner: Internal panels made from 6 mm thick phenolic resin-based industrial laminate. Base Cabinets / Stand: Steel pedestal/cabinet support made from 1 mm thick GPSP sheet. Internally FRP-coated. Offers robust base for fume hood mounting. Work Surface: 18 mm thick jet black granite top with watertight recessed pan (min. 7 mm depth) to contain spills. Includes a 110 mm x 260 mm oval black polypropylene (PP) cup-sink for drainage. Testing & Compliance: The fume hood shall be tested and certified as per ASHRAE 110-1995 and EN 14175 by an accredited third-party agency. Quality Assurance:		

	All components including fume hood, worktop, base cabinets, and accessories shall be manufactured, inspected, and packed by the OEM. The vendor shall be responsible for end-to-end scope including delivery, installation, commissioning, and basic functional testing. **Note:** Detailed drawings along with the complete technical specifications of the fume hood shall be submitted for review by the Engineer-in-Charge prior to commencement of fabrication. The fume hood shall be installed in Bio Wet lab and Chemistry lab The fume hood exhaust has to be taken upto terrace level.		
9	Supply and installation of centrifugal blower for the existing fume hood (Item No. 8) with 2.5 HP motor, having casing fabricated from 3 mm thick polypropylene (PP) sheets externally reinforced with 5 mm thick FRP coating, provided with bottom drain arrangement for maintenance and liquid disposal, and inlet/outlet connections with ½" pre-drilled holes for piping. The blower shall have a 17-inch diameter impeller with 16 blades, injection-moulded in one-piece polypropylene, statically and dynamically balanced, directly coupled to a 3 HP, 3-phase, 1440 RPM Crompton make motor conforming to IE2 efficiency standards, complete as per directions of the Engineer-in-Charge. The entire unit shall be tested in accordance with IS 4894:1968 standards to ensure performance and quality compliance.	3	each
10	Supply, fabrication, and installation of 6"–8" diameter PP–FRP ducting for exhaust connection to the existing fume hood (Item No. 8), including elbows, bends, sockets, supports, MS brackets, mounting hardware, and all accessories required for proper alignment, support, and secure fixing, with all materials conforming to relevant standards and providing leak-proof, corrosion-resistant, and durable performance suitable for laboratory exhaust applications, complete as per the directions of the Engineer-in-Charge. **Note:** Detailed drawings along with the complete technical specifications shall be submitted for approval by the Engineer-in-Charge prior to commencement of fabrication.	40	meter
11	Supply and installation of 6"–8" diameter damper suitable for the fume hood exhaust system under Item Nos. 8, 9, and 10, compatible with PP–FRP ducting and designed for efficient airflow regulation, fabricated from corrosion-resistant materials suitable for chemical fumes and high-humidity environments, complete with necessary mounting accessories, ensuring smooth operation, leak-tight performance, and provision for easy maintenance, all as per the directions of the Engineer-in-Charge. **Note:** Detailed drawings along with the complete technical specifications shall be submitted for approval by the Engineer-in-Charge prior to commencement of fabrication.	2	each
12	Supply and installation of an Emergency Safety Shower with eye washer of overhead single dome type, conforming to IS 10592 (latest revision) and	3	each

	bearing a valid BIS certification mark. The unit shall be provided with a stay-open valve mechanism operated via a pull rod, allowing hands-free activation during emergencies. An integrated filter element shall be included to ensure the delivery of clean and safe water. The product shall be accompanied by a valid test report issued by a Central Government/NABL/ILAC-accredited laboratory, certifying compliance with the specified standards. All equipment supplied shall be brand new, unused, and fully compliant with the applicable quality standards and technical specifications. The scope includes the submission of required test reports and the complete installation, testing, and commissioning of the unit. **Note:** Detailed drawings along with the complete technical specifications shall be submitted for approval by the Engineer-in-Charge prior to commencement of fabrication.		
13	Supply and installation of Chemical Storage Cabinet (Refer: FIG: 06 ACID CABINETS in Annexure: II) with 4mm thick Toughened Glass Doors, having overall dimensions of 1830 mm (H) x 1000 mm (W) x 450 mm (D) (±10 mm), suitable for the safe and organized storage of laboratory chemicals. The cabinet shall be fabricated from Galvanized Plain Steel (GPSP) sheets, with the body and shelves constructed from 0.8 mm thick sheet and the door frame from 1.2 mm thick sheet, precision cut and bent using CNC machines for dimensional accuracy and uniform finish. The cabinet shall have a double back sheet construction, with the internal back sheet perforated for ventilation. The top section shall include a 100 mm diameter cut-out for connection to an exhaust system for fume dispersion. The cabinet doors shall be fitted with 4 mm thick toughened glass panels, sealed with high-quality rubber beading on all four sides, further secured using sheet metal strips. Welding on the front frame of the doors is strictly not permitted. Doors shall be equipped with a three-way locking mechanism, operated by a single key. The top and bottom ends of the locking rod shall have hook-type ends engaging into horizontal slots for enhanced security. The cabinet shall include four adjustable perforated steel shelves, forming a total of five compartments. Each shelf shall have a minimum uniform load-bearing capacity of 70 kg. Each door shall be mounted on three heavy-duty hinges with removable hinge pins for ease of maintenance. All steel components shall undergo a multi-stage pre-treatment process including degreasing, derusting, and phosphating, followed by epoxy powder coating and oven baking at a temperature exceeding 200°C, resulting in a scratch-resistant surface with a uniform coating thickness of 50–60 microns. The unit shall be delivered, installed at the specified site, and handed over in ready-to-use condition, conforming to applicable quality and safety	2	each

	standards. **Note:** Detailed drawings along with the complete technical specifications of the Chemical Storage Cabinet shall be submitted for review and shall receive formal approval from the Engineer-in-Charge prior to commencement of fabrication.		
14	Supply, installation, testing, and commissioning of localized spot extractor (Refer FIG: 12 TYPICAL SPOT EXTRACTOR FIXING DETAILS of Annexure-II). The system shall be capable of capturing chemical fumes, vapours, or dust at the source and transporting them safely to a designated exhaust or filtration system. **Technical Specifications** Extraction Arm • Type: Modular articulated fume extraction arm • Material: Chemical-resistant Polypropylene (PP) / PVC / Anodized Aluminum • Arm Length: Minimum 1000 mm, adjustable up to 1500 mm • Mounting: Suitable for wall or ceiling installation, with secure chemical-resistant brackets • Hood Type: Dome or bell-shaped, made of PP or transparent polycarbonate/acrylic • Swivel Joints: Minimum of three pivot points for 360° rotation and positioning flexibility • Hood Diameter: Minimum 300 mm • Locking Mechanism: Position-locking knobs or friction joints at each pivot for secure hood placement Air Flow & Performance • Face Velocity: Minimum 0.5 – 1.0 m/s at the hood • Recommended Air Volume: Approx. 800 – 1000 m^3/h • Pressure Drop: Designed to operate with minimal resistance • Testing Standard: Performance to be validated with an anemometer or tissue paper method for capture verification Exhaust Options • Ducted Exhaust System: To be connected to a central or standalone centrifugal blower • Filtration Module (Optional): Multi-stage filter unit with: - Pre-filter - Activated carbon filter - HEPA / ULPA filter (optional based on application) • Exhaust Outlet: Compatible with 100 mm diameter flexible/rigid ducting	8	each

	Mounting Hardware • Support Structure: Galvanized or powder-coated steel brackets for secure wall/ceiling mounting • Fasteners: SS-304 grade or equivalent corrosion-resistant hardware Installation Requirements • Proper positioning of the hood at 300–450 mm above the typical source of fume emission • Connection to the central ventilation system or to an approved standalone blower • Coordination with civil/electrical/mechanical services for proper routing and support • Ensure make-up air provisions to maintain balanced air pressure in the lab Testing & Commissioning • Visual inspection of installation and alignment • Measurement of face velocity at various hood positions • Demonstration of efficient capture using smoke/tissue methods • Training to laboratory personnel on operation and maintenance Compliance & Safety • All components shall be compliant with relevant Indian and international safety and environmental standards • Manufacturer's warranty: Minimum 1 year from the date of commissioning • The system shall conform to applicable standards such as: - ANSI Z9.2 – Local Exhaust Systems - IS 4894 – Centrifugal Fans (for blower integration) - ACGIH Industrial Ventilation Guidelines The spot extractor shall be installed in Chemistry lab The spot extractor exhaust has to be taken upto terrace level. **Note:** Detailed drawings along with the complete technical specifications of the Spot Extractor system shall be submitted for approval from the Engineer-in-Charge prior to commencement of fabrication.		
15	Supply and installation of centrifugal blower suitable for the existing spot extractor under Item No. 14, with casing fabricated from 3 mm thick polypropylene (PP) sheets externally reinforced with 5 mm thick FRP coating, provided with bottom drainage arrangement for maintenance, inlet and outlet ports with ½" pre-drilled holes, and a 17-inch diameter, 16-blade, single-piece injection-moulded polypropylene impeller, statically and dynamically balanced, directly coupled to a 2 HP, 3-phase, 1440 RPM Crompton make motor conforming to IE2 efficiency standards, the complete	2	each

	unit tested as per IS 4894:1968 and installed as directed by the Engineer-in-Charge. **Note:** Detailed drawings along with the complete technical specifications shall be submitted for approval from the Engineer-in-Charge prior to commencement of fabrication.		
16	Supply, fabrication, installation, testing, and commissioning of chemical-resistant PP-FRP ducting system, comprising internally lined polypropylene (PP) of minimum 3 mm thickness and externally reinforced with FRP of minimum 2 mm thickness, making a total composite thickness of 5 mm. The system shall include all necessary fittings such as elbows, bends, reducers, sockets, couplings, and flanges, along with MS epoxy-coated or galvanized brackets, SS-304 grade clamps, fasteners, and anchor bolts for secure wall or ceiling mounting. The ducts shall be suitable for laboratory fume extraction applications, installed with proper alignment and sealed joints to prevent leakage. All materials and workmanship shall comply with IS standards and shall be suitable for continuous operation in corrosive environments. The scope also includes testing for leakage, verification of airflow, and submission of all relevant documentation including datasheets, compliance certificates, and warranty. **Note:** Detailed drawings along with the complete technical specifications shall be submitted for approval from the Engineer-in-Charge prior to commencement of fabrication.	30	Meter
17	Supply and installation of Solvent Inflammable Storage Cabinet (Refer: FIG: 07 FM APPROVED SOLVENT CABINETS of Annexure-II) of size 1180 mm (W) x 640 mm (D) x 950 mm (H), designed for the safe storage of flammable and combustible solvents and chemicals in laboratories and industrial environments. The cabinet shall be constructed from high-quality, powder-coated, heavy-duty steel with double-walled panels and an air gap for thermal insulation. The cabinet shall be equipped with a leak-proof sump tray at the bottom for containment of spills, self-closing lockable doors with three-point latch mechanism, clearly marked with standard flammable material warning labels. Ventilation ports with flame arrestors shall be provided as per safety standards. The unit shall conform to relevant safety standards such as NFPA 30, OSHA 29 CFR 1910.106, or equivalent Indian safety norms. The scope includes delivery, positioning at the specified location, and handing over in fully functional condition. **Note:** Detailed drawings along with the complete technical specifications of the Solvent Inflammable Storage Cabinet shall be submitted for approval from the Engineer-in-Charge prior to commencement of fabrication.	1	Each
18	Supply of Bio Waste Storage Container, suitable for safe and hygienic collection, temporary storage, and transportation of biomedical waste in compliance with the Bio-Medical Waste Management Rules, 2016 (as	6	each

	amended) and applicable CPCB guidelines. **Technical Specifications:** **Type:** Bio-waste storage container with lid Capacity: Minimum 60 litres (or as specified in the BOQ) Material: High-density polyethylene (HDPE) or equivalent virgin plastic Construction: Rigid, leak-proof, puncture-resistant and corrosion-resistant body Design Features: Smooth inner and outer surfaces for easy cleaning Secure, tight-fitting lid with handle to prevent spillage and odour escape Integrated lifting/handling handles for safe transport Colour-coded as per biomedical waste category (e.g., yellow, red, blue) Clearly printed biohazard symbol and waste category label as per CPCB norms Mobility (if required): Heavy-duty castor wheels with locking mechanism (for movable units) Cleaning & Maintenance: Should allow easy manual or mechanical washing and disinfection Durability: UV-resistant, weather-resistant, and capable of withstanding outdoor conditions **Note:** Detailed drawings along with the complete specifications / sample of the Bio Waste Storage Container shall be submitted for review and shall receive formal approval from the Engineer-in-Charge prior to commencement of fabrication.		
19	Providing and fixing blackout curtains with curtain rods of 25mm dia Stainless steel (304 grade) including fabric, lining, stitching in eyelet style, transportation and fixing charges.	24	sqm
20	Supply of Almirah made of CRCA Steel having 22 Gauge thickness (Indian Design No: 216538, 217415) measuring 1950mm height, 900mm width and 500mm depth with 4 shelves, dual side openable door with recessed handle and locking arrangement, having Net weight not be less than 76.6 Kgs.	1	each
21	Supply of Medium Back Revolving chair of over all size:118.5 cm high ,58cm width with following specification. (Prefered makes are Featherlite,Transteel and Wipro)	4	each

	Base:The 640 mm dia five pronged base shall be made out of nylon – Reinforced with bottom metal ribbing for additional buttress and strength. To conform ANSI/BIFMA X5.1-2011 General Purpose Office Chair Standards Castors:Castors - Twin Castors 50mm dia wheel made of Nylon castors conform to ANSI /BIFMA X 5.1 – 2002 Seating Structure: Seat shall be made out of 12mm moulded hot pressed plywood in ergonomic shape fitted with high quality T - nuts and riveted into the wood Upholstery: Cushion with high density cold cured self skinned pre moulded foam of 52 kg/cum density in the shape of plywood. Hardness -- 12.6kgf at 25% Synchro Mechanism:This mechanism manufactured out of cold Rolled Carbon Steel IS 513-1994 Sheets,The steel components shall be manufactured with highly precision tools for accuracy in matching other parts for smooth functioning. The steel components shall be fabricated by using Co2 welding process for giving uniform surface finish with higher tensile strength. Springs are made out of Grade II material. Composite release levers for locking mechanism & Gas lift height adjustment. The lever locks in upright and also in 17degree at maximum tilting position. Release lever mechanism for Locking and Gas lift height adjustment. The mechanism shall be lockable in zero (front) position Tension Control:Tension control shall be given below the side fixed with mechanism, Active, telescopic, rotating motion One Way Armrest: Moulded self skinning polyurethane arms confirming with steel inserts for long life and maintenance free usage. Using international styling moulded self skin, Polyurethane, metal inserts for durability, comfort and long life. PU Arms shall have density of 350 to 450 gm/ltr, for smooth finish aberration and scratch resistance and easy maintenance Back: Should have Mesh Back on Frames Fabric: Seat should be upholstered with approved fabric (Response Shade) which shall be Fire retardant & conform to BS EN 1021-1:1994 (Cigarette) BS 7176 : 1995 Low Hazard standards Seat: Depth-46 cm Width- 49.5 cm Maximum Height- HB: 118.5 cm; Minimum Seat Height- 45 cm Maximum Seat Height- 55.5 cm		

	Width (Arm to Arm)- 46 cm Arm Rest Height- 62.5 cm"		
22	Supply of Magnetic White Board of 1500 x 1200mm made of painted metal sheet with honeycomb and silver foil backing, rounded aluminium safety edges and aluminium tray. The scope includes a mounting Stand made of GI tube of 60mm x 40mm having 2.6mm thickness with movable Casters and locking arrangement suitable for the board size.	1	each
	CIVIL PLUMBING WORK		
23	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.		
23.1	15 mm nominal dia Pipes	10	metre
23.2	20 mm nominal dia Pipes	50	metre
23.3	50 mm nominal dia Pipes	25	metre
24	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.Concealed work, including cutting chases and making good the walls etc.		
24.1	15 mm nominal dia Pipes	10	metre
24.2	20 mm nominal dia Pipes	30	metre
25	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :		
25.1	20 mm nominal bore	15	each
26	**Chemical Storage Tank under the wash basin**		
26.1	Providing and placing on floor polyethylene water storage tank,IS:12701 marked ,with cover and suitable locking arrangement and making necessary holes for inlet,outlet and overflow pipes but without fittings and the base support for tank.	400	Litres

ANNEXURE II

1. SCOPE OF WORK

The specification covers the general requirement for the Supply, Installation, Testing and Commissioning of laboratory furniture in the B03 Building, Sahyadri Campus IIT Palakkad.

1.1 TECHNICAL SPECIFICATIONS FOR LAB FURNITURE:

I. GENERAL SCOPE OF WORK:

a) Furnish all cabinets and casework, including tops, ledges, "C-FRAME" supporting structures complete with knee space panels, filler panels etc., as per the Tender Bill of Quantities & drawings including delivery to the building, set in place, properly levelled and handing over with documentation after commissioning.
b) The supplier shall furnish and deliver all utility service outlet accessory fittings as mounted on the laboratory furniture like electrical sockets, switches, Gas & Water valves identified on drawings & as listed in the Tender Bill of quantities.
c) The supplier shall furnish and deliver all laboratory sinks, cup sinks, drains, drain troughs, overflows and sink outlets with integral tailpieces, which occur above the floor, and where these items are part of the equipment. All tailpieces shall be furnished with the couplings required to connect them to the drain piping system.
d) The supplier shall furnish service strip supports where specified, setting in place service tunnels, service turrets, supporting structures and reagent racks of the type shown on the drawings.
e) All various equipment fittings, assemblies, accessories, hardware, foundation bolts, supports, terminal lugs for electrical connections, cable glands, junction boxes and other sundry items for proper assembly and installation of various equipment and components of the work shall be deemed to be included in the tender, irrespective of the fact whether such items are specifically mentioned in the tender or not.
f) The supplier shall remove all debris, dirt and rubbish accumulated as a result of the installation of the laboratory furniture to an onsite container, leaving the premises broom clean and orderly.
g) After award of work, bidder has to integrate all the components of the work in consultation with the IIT Palakkad, appointed Lab consultant i.e. (Lab furniture, fume hoods, exhaust system, integration with Electrical and all other services included in the BOQ with the help of respective specialized agencies), prepare shop drawings and get it approved from Engineer in charge before taking up the production/placing order for supply, checking/ensure the efficiency of the overall design and get it vetted from the IIT Palakkad's, appointed consultant.

II. GENERAL DESIGN REQUIREMENT

a) The furniture shall be of modern design and shall be constructed in accordance with the best practices of the Scientific Laboratory Equipment Industry. First class quality casework shall be insured by the use of proper machinery, tools, dyes, fixtures and skilled workmanship to meet the intended quality and quantity for the project.
b) All cabinet bodies shall be of over-closed design with fully knock down and having a main and add-on construction to avoid any gaps in between two units. All units to be with interlocking type of construction to form a rigid integral structure.

c) All cabinets shall have a cleanable smooth interior. And shall be positioned on Pedestal Frame legs and shall be covered with PVC Coving to ensure no dust & moisture enters below the cabinets. Thickness of Steel used in the construction of cases shall be as per specification enclosed.
d) Solvent storage cabinets shall be EN Certified 90 minutes fire rated and specifically designed for the storage for the storage of flammable and combustible liquids.
e) Acid storage cabinets shall be steel, and construction features as other cabinets except them shall be completely lined with 6 mm thick phenolic resin liner and 16 mm phenolic resin shelves.

III. FUME HOOD

a. PURPOSE

The Laboratory Fume Hood will function as an enclosed workspace which will prevent employee exposures by containing emissions from within the Hoods & Exhausting them effectively.

b. TYPE

i. Fume Hoods shall be bench top Fume Hood
ii. Constant Air Volume type benchtop Fume Hood shall be provided.
iii. Fume Hood shall have utility valves like Line vacuum, N2, Potable Water, 4+4nos Tiny Trip power sockets (6 Raw power & 2 UPS).
iv. All the Fume Hoods shall be of CRCA Powder Coated Hood with internal contact parts liner shall be of 6mm thick Reinforced Phenolic Resin Liner.
v. Base cabinets with vent provision shall be provided below the fume hoods & FM approved Solvent storage cabinets wherever specified in the Tender BOQ.

IV. STANDARDS:

Conformity with Statutory Acts, Rules, Standards and Codes.

a) All components shall conform to relevant up to date Indian Standard Specifications, wherever existing irrespective of whether explicitly mentioned or not.
b) All electrical work shall be carried out in accordance with the provision of Indian Electricity Act 2003 and Indian Electricity Rules 1956, amended to date.
c) All lab fixtures shall conform to relevant international standards or guidelines and should provide documentary evidence to this effect. These include the following:
    1. **SEFA 3** – Scientific Equipment and Furniture Association for Work surface.
    2. **SEFA 8M** - Scientific Equipment and Furniture Association for Steel Caseworks.
    3. **SEFA 8 -** Scientific Equipment and Furniture Association.
    4. **SEFA 10** - Scientific Equipment and Furniture Association for C Frame.
    5. **NFPA 30** - National Fire Protection Association
    6. **NFPA-45** - National Fire Protection Association **UL** - Underwriters Laboratories
    7. **ASTM D522** - Bending Test
    8. **ASHRAE 110-2016**
        (OR)
    9. **BGI/GUV-I 850-0** Laboratories
    10. **TRGS 526** Laboratories
    11. **DIN 12898** Laboratory fittings; hose nozzles

12. **DIN 12918 Laboratories** - laboratory fittings – part 1: Water taps
13. **DIN 12918 Laboratories** – laboratory fittings – part 2: Taps for combustion gases
14. **DIN 12918 Laboratories**-laboratories fittings – part 3: Taps for industrial gases
15. **DIN/EN 13792** Labels for laboratory fittings
16. **DIN/EN 15154-1** Safety emergency showers – part 1: Body showers with water connection for laboratories
17. **DIN/EN 15154-2** Safety emergency showers – part 1: Eye showers with water connection
18. **DIN/EN 14470-1** Fire resistance storage cabinets – part1: Safety cabinets for flammable liquids
19. **DIN/EN 14470-2** Fire resistance storage cabinets – part 2: Safety cabinets for pressurized gas cylinders
20. **DIN/EN 14175-2** Fume cupboards– part 2: requirements for safety and performance capacity
21. **DIN/EN 14175-2** Fume cupboards – part 3: design test procedures
22. **DIN 12924-2** Laboratories – fume cupboards – part 2: high performance fume cupboards
23. **DIN 12924-4** Laboratories – fume cupboards – part: fume cupboard for pharmacies.

V. QUALITY ASSURANCE AND TESTING.

The supplier shall have a history of successful projects of similar size and complexity.

Single Source Responsibility: For furnishing all cabinets and casework, including tops, ledges, "C- FRAME" supporting assemblies work top, modesty panel, shelves, storage, service fixtures and accessories, fume hoods, exhaust ducting, exhaust blowers and scrubbers, as a single responsibility.

The supplier shall submit test results for SEFA-3 & 8, 8M compliance as indicated in performance criteria of the respective codes for a minimum of any 2nos Cabinets of different sizes as listed in the BOQ. The supplier shall at his own expense and at no cost to the purchaser carry out all such tests and inspections of goods and related services as specified in Tender. Fume hoods shall be type tested at manufacturers own test facility by reputed third party testing agency & relevant certificates to be submitted.

Whenever the supplier is ready to carry out such tests, reasonable advance notice shall be given to the purchaser including obtaining necessary permission or consent from a third party agency to enable the purchaser or its designated representative to attend the test and/or inspection.

(I) GENERAL SPECIFICATION

a) The steel frames, panels & shutters should be made from Prime Quality CRCA (Cold Rolled Cold Annealed) Steel. All cabinets shall be complete welded construction complying SEFA 8M standards.

b) Floor cabinets made of hollow tubular square cross sections would not be acceptable. Single units should be complete welded construction complying with SEFA 8M Standards & units should be placed side by side to form the entire table.

c) Under Bench C-frame structure mounted Cabinets & Sink Base Unit.

d) All cabinets shall be overlayed. Exterior corners shall be spot welded with heavy back up reinforcement at exterior corners. All face joints shall be welded and ground smooth to provide a continuous flat plane.

e) Thickness of CRCA / GI powder coated with minimum 60 to 80 microns high chemical resistant epoxy powder /80 to 100 microns Polyurethane powder coating steel used in construction of cases shall be 1.2mm thick.

f) Base molding to be provided for the free-standing base units. Base molding shall be sealed at the bottom to prevent dust accumulation beneath the cabinet.

g) Support struts shall consist of two 1.6mm thick channel uprights fastened top and bottom by two adjustable "U" shaped spreaders, each 2.6mm thick, 1- 37.5mm x length required formed from galvanized steel. Struts shall be furnished to support drain troughs, and to support worktop at plumbing space under fume hood superstructures or other heavy loads.

h) The sinks should be with a self-draining base and should be suitable for mounting on top or underside of the work benches. Sinks shall have bottle traps.

i) Internal size of PP Single Molded Sinks –shall be defined in the Technical BOQ.

j) Polyethylene cup drains shall be molded in one-piece of acid-resistant polyethylene. They shall have an integral mounting flange and an integral tailpiece with 38mm I.P.S. male straight thread outlet with Bottle Trap.

a) ACID STORAGE CABINETS:

The cabinet is to be flush face Construction, with doors and drawers in the same plane as the cabinet face frame, without overlap. The doors are to be 3/4" thick with square edges, and a stainless-steel pull handle. The height of the tall unit will be of 84” & Depth 22” & length varies 24”, 30” & 36”. It will have a 2” dia hole in the top of the cabinet at center & a powder coated extension piece until the false ceiling for venting and will be connected to exhaust ducting. The door front panel will have Louvers at Equal distance for air circulation. Each unit will have 5 nos adjustable 16 mm Phenolic shelves with a 25mm lip at the bottom front to contain spills & 6 mm Phenolic liners for doors and cabinet inside surface.

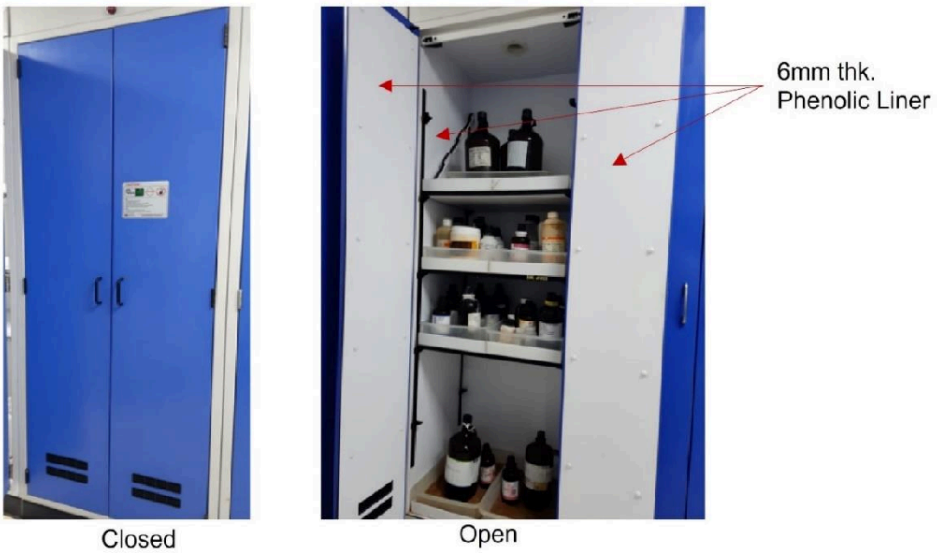

FIG: 06 ACID CABINETS

b) FM STORAGE CABINETS:

1. Solvent Storage Cabinets:

90minutes Fire rating approved as per (EN 14470-1) Solvent storage cabinets. The bottoms, top, sides and doors shall be fabricated of 1.2mm thick steel and shall be all double panel construction with a 40mm air space between panels. All joints shall be welded, or screwed, to provide a rigid enclosure. The doors shall swing on full-length stainless-steel piano hinges and shall be fully insulated. Loading capacity of Tray shelves shall be 75 kgs, 4nos of PP Trays shelves & 1 number Pan Collection. The right-hand door shall be equipped with a three-point latching device and the left-hand door shall have a full height astragal. The doors are self-closing and synchronized so that both doors will always fully close. The right-hand door is equipped with a three-point latching system that automatically engages when the doors close. Each door is equipped with a fusible- link hold-open feature that will ensure the door closes should the temperature outside the cabinet exceed 165 degrees Fahrenheit. Units 600mm long have only one door, self-closing, and equipped with a three-point latching system and hold-open feature. A 50mm deep liquid tight pan that covers the entire bottom of the cabinet shall be furnished to contain liquid leaks and spills. A full-depth adjustable shelf is also provided. The shelf is perforated to allow air circulation within the cabinet. Two diametrically opposed vents with spark screens are provided in the back of the cabinet as well as a grounding screw. The cabinet shall have interior finish same as exterior. The cabinet shall be labelled: “FLAMMABLE – KEEP FIRE AWAY”.

FIG: 07 FM APPROVED SOLVENT CABINETS

2. Above Bench 3 stage reagent shelves

Reagent shelves shall be a complete modular design consisting of 3 stage horizontal storage shelves. The ends and intermediate vertical supports should be 1.2mm and horizontal shelves of 10mm thickness of Toughened Glass supported on 2mm thick aluminium extrusion with MS brackets of 2mm thick. Each shelf should have a load bearing capacity of 50 kg of UDL for a length of 1000mm

FIG: 08 Reagent Shelve

c) Water Tap:

FIG: 09 Three Way Wall Mounted Fittings with Swiveling GOOSENECK Spout

Wall mounted Water Tap shall be made up of Metal Handle & Brass with surface protected by Epoxy/Polyester Powder Coating RAL 7035 having male connection thread G3/8" & G1/2". Water flow capacity of around 30 l/min at 3 bar pressure & working temperature range of 0 70°C with test pressure 9 bars & max working pressure of 10 bar. . The fittings must be supplied with a 2x360° open/close function rubber headwork for fine regulation. The sealing must be made of EPDM and the lubrication must be silicone-based. The fittings should be capable of operating at maximum operating pressure of 10 bar (145 psi). The water fittings should be delivered with a flange and anti-rotational safety pins in order to keep the fitting fully locked in its position and to prevent unintentional turning that would result in leaks. The handles of the valve must be mounted with "zero gap" on the spindle of the headwork. The handle should be made of polypropylene and the handle must have a clear closing/opening indication. The fittings must be equipped with a hose nozzle according to DIN 12898. Depending on user requirement and preferences, the hose nozzle can be made of polypropylene or powder coated brass and can be either fixed or removable type.

d) Safety Shower:

Emergency Shower ; total height 2300 mm, projection 655 mm, should be capable of delivering water at a min 75 litres /min & Eye wash at a minimum of 11 litres /min with min working pressure of 1.5 bar, conforming to the following specifications:

Flange plate with 4 mounting holes made of Powder coated cast Aluminum (Radioactive labs to have stainless steel), chemical resistant orange powder coated, dimensions 230 x 230 mm Vertical stand pipe 2300mm height, 150mm dia made up of Galvanized steel, chemical resistant orange powder coated, with 25mm chrome plated brass stay-open ball valve. Valve is made with a chrome plated brass ball and Teflon® seals. Furnished with stainless steel actuating arm and 29" stainless steel pull rod. DIN-DVGW tested and certificated pull rod made of steel, chemical resistant green powder coated, length 700 mm high-performance shower head made of chemical resistant plastic, with improved spray pattern, corrosion resistant, largely scale and maintenance-free, very robust, self-draining integrated automatic flow regulation 50 l/min. for a spray pattern according to the norms at a specified operating range of 1.5 to 3 bar dynamic water pressure eye / face wash unit with bowl body and bowl made of UV and impact resistant ABS plastic activation by pressing the big push plate made of stainless steel. High-performance spray heads made of brass, for large-scale dispersion of water, chemical resistant powder coated, largely scale-free, with rubber sleeves and sealed dust caps integrated flow. Regulation valve water inlet 1 1/4” male, water outlet 1 1/4” Female height 203 mm, width 445 mm, depth 300 mm according to DIN EN 15154-1:2006 , DIN EN 15154-2:2006, ANSI Z358.1-2004 and DIN 12899-3:2009

FIG: 11 A TYPICAL FLOOR MOUNTED SAFETY SHOWER

e) Spot Extractor:

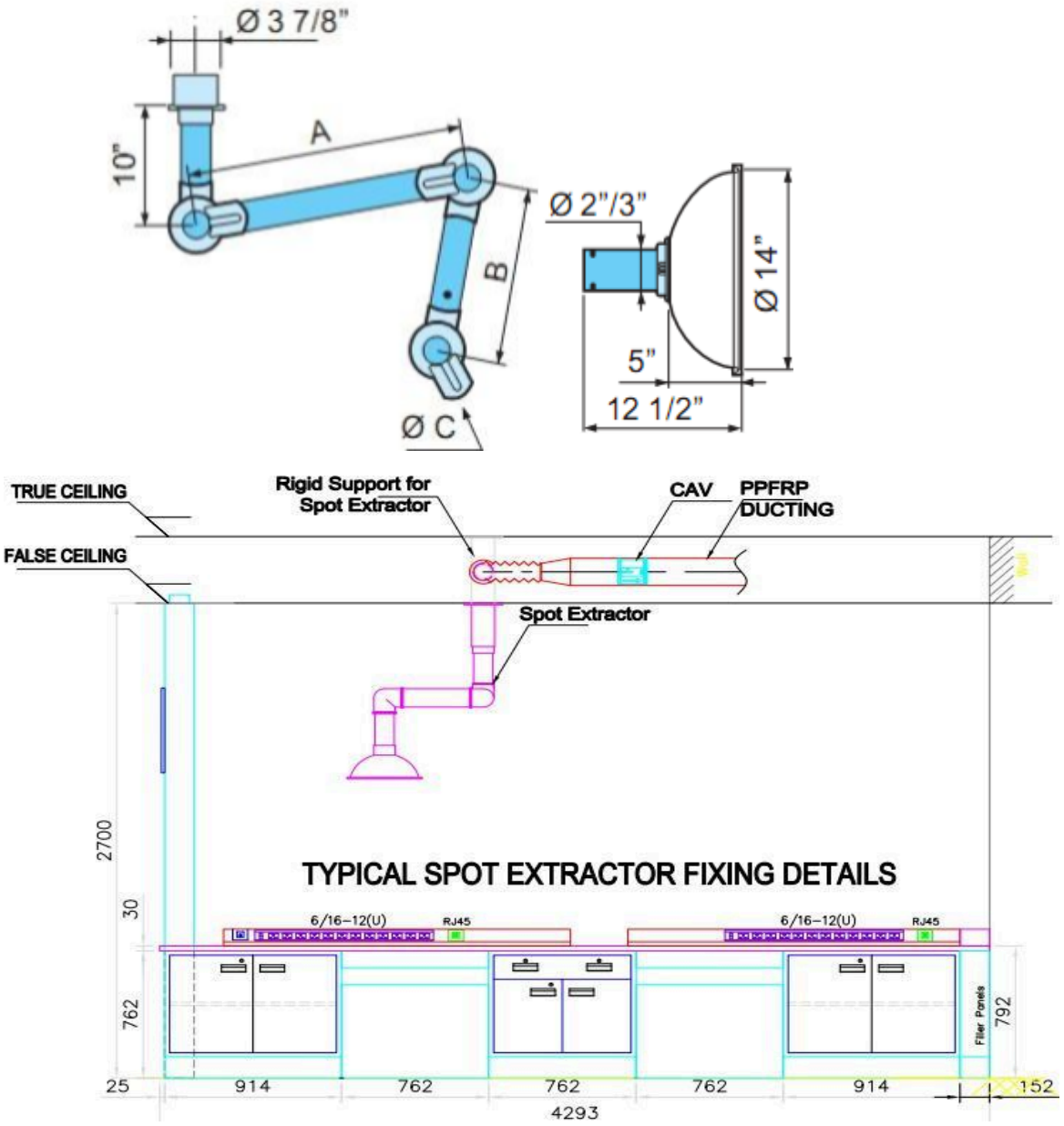

FIG: 12 TYPICAL SPOT EXTRACTOR FIXING DETAILS

Spot extractor shall be made of Poly Propylene with joints and tube in recyclable PP. All vertical drops from the slab shall be made up of epoxy powder coated CRCA bracket. Extraction arm shall be Φ75, Lengths A=750 & B=450 with 360° rotation. Spot Extractor length up to 1500mm, which shall be mounted from ceiling with MS brackets with chemical resistance epoxy powder coating. Arms are provided with dampers, tight down to under pressure of 3500pa & air temperature of -10° to 70°C.

1. CAV Constant Air Volume

Air flow controllers for constant air volume shall be of Plastic material (Polystyrene) classified M1 & galvanized steel for sleeves. Operating temperature shall be 5 to 60 deg C. The air is forced to pass through a predetermined space in which a flap can change the position according to the specified air flow. The requested airflow is fixed by a screwdriver.

CAV is fixed in a Vertical / Horizontal duct using a lip seal which ensures tightness.

2. Sinks:

Should be made up of injection molded from pure polyolefin/ co-polymer material with inside corners coved, rectangular without border, having good resistance to organic solvents. Overall size (L x W x D) varies as per the BOQ.

3. Pegboard:

Single faced stainless-steel pegboard having a tray hole for water drainage and detachable pegs. The essence is made up of 1 mm thick stainless steel (SS 304) whereas the pegs are made up of polypropylene and are adjustable with a minimum 10mm distance between each peg (L x W x H is 750 x 750 - 33 Pegs). SS 316L tray with 90 deg bend tube up to sink.

4. Bench Mounted/Suspended Laboratory Fittings

a) The laboratory fitting manufacturer shall be certified to ISO 9001 / EN 29001 / BS 5750 Part 1, or equivalent.
b) The manufacturer should guarantee the availability of spare parts and replacement products for a period of minimum 10 years.
c) All external surfaces of the fittings shall be surface treated with a chemical resistant polyester powder coating that shall be highly resistant to most chemicals and provides excellent light fastness. Minimum thickness of coating shall be 50µm.
d) The fittings should be delivered with an "easy-to-mount" inlet connection, where it is possible to connect hoses, Cu-, SS-, or PEX pipes directly into the inlet of the valve, depending on the applications. The handle of the fittings should be metal.
e) The fittings should be delivered with color and media indication in accordance with EN 13792:2002.
f) Every fitting should be leak-tested before leaving the factory. Certificate of leak testing of each fitting to be provided.
g) Laboratory fittings must be supplied with an integrated service ball valve to provide the features Pre-setting of media flow, Local shut-off for maintenance purpose & Safety lock.

5. Laboratory Fittings for Water

a) The fittings must be supplied with a 2x360° open/close function rubber headwork for fine regulation. The sealing must be made of EPDM and the lubrication must be silicone-based. The fittings should be capable of operating at maximum operating pressure of 10 bar (145 psi).
b) The water fittings should be delivered with a flange and anti-rotational safety pins in order to keep the fitting fully locked in its position and to prevent unintentional turning that would result in leaks.
c) The handles of the valve must be mounted with "zero gap" on the spindle of the headwork. The handle should be made of metal and the handle must have a clear closing/opening indication.
d) The fittings must be equipped with a hose nozzle according to DIN 12898. Depending on user requirement and preferences, the hose nozzle can be made of polypropylene or powder coated brass and to be of as removable type.

6. Laboratory Fittings for Non-burning 2.0 Gases

a) The fittings must be supplied with a fine regulating needle headwork having 3x360 degrees open/close operation for fine regulation of media flow. The sealing must be made of FKM/FPM and the lubrication must be Perfluoropolyether based. The fittings should be capable of operating at maximum operating pressure of 16 bar (232 psi).

b) The 2.0 non-burning fittings should be delivered with a flange and anti-rotational safety pins in order to keep the fitting fully locked in its position and to prevent unintentional turning that would result in leaks.

c) The handles of the valve must be mounted with "zero gap" on the spindle of the headwork. The handle should be made of metal and the handle must have a clear closing/opening indication.

d) The fittings must be equipped with a hose nozzle according to DIN 12898. Depending on user requirement and preferences, the hose nozzle can be made of polypropylene or powder coated brass and to be of as removable type.

7. Laboratory Fittings for Vacuum

a) The fittings must be supplied with a high-flow headwork having 1.5x360 degrees open/close operation for high-flow regulation of media flow. The sealing must be made of FKM/FPM and the lubrication must be Perfluoropolyether based. The valves should be capable of handling an operating pressure of -1 to16 bar (-14.5 to 232 psi).

b) The vacuum fittings should be delivered with a flange and anti-rotational safety pins in order to keep the fitting fully locked in its position and to prevent unintentional turning that would result in leaks.

c) The handles of the valve must be mounted with "zero gap" on the spindle of the headwork. The handle should be made of metal and the handle must have a clear closing/opening indication. The fittings must be equipped with a hose nozzle according to DIN 12898. Depending on user requirement and preferences, the hose nozzle can be made of polypropylene or powder coated brass and to be of as removable type.

8. Laboratory Fittings for Burning Gases

a) Fittings must be delivered with a ceramic press/turn safety headwork with 90° open/close function, which prevents unintentional opening of the valve. The sealing of the fittings for burning gases must be made of Nitrile and the lubrication must be mineral oil based. Fittings for burning gases should be capable of operating at maximum working pressure of 7 bar (100 psi).

b) The burning gas fittings should be delivered with a flange and anti-rotational safety pins in order to keep the fitting fully locked in its position and to prevent unintentional turning that would result in leaks.

c) Fittings for burning gases must be delivered with a metal handle with “POP-UP “indication buttons that make it possible visually to observe if the valve is open. Handles must be painted with the same quality polyester powder coating as the valve bodies.

d) The outlet must be equipped with a fixed metal serrated hose nozzle according to DIN 12898.

9. FUMEHOOD & ACCESSORIES

I. TYPES

a) Constant Air Volume type Fume Hood with General storage cabinet

Constant Air Volume type Fume Hood of different sizes described in the Tender BOQ.

Fume Hood with 30 mm Jet black Granite of an even surface and the level tolerance less than 1 mm. General storage Base Cabinets with vent provision.

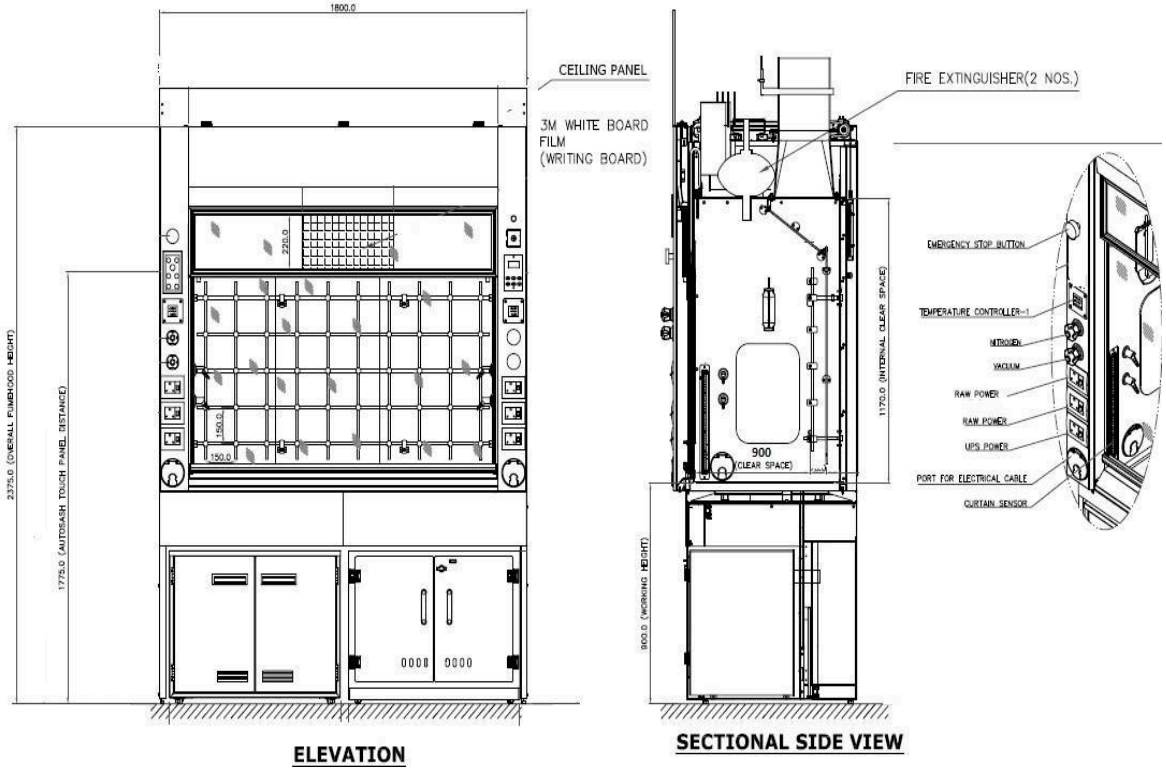

FIG: 14 Fume Hood with regular cabinet

b) Constant Air Volume type Fume Hood with FM approved Solvent storage cabinet

Constant Air Volume type Fume Hood of different sizes described in the Tender BOQ.

Fume Hood with 30 mm Jet black Granite worktop in the center with 12mm lipping at the edges and the level tolerance less than 1 mm.

90 Min Fire rated Solvent Base Cabinets & SEFA 8M tested Acid storage Cabinets.

FIG: 15 Fume Hood with FM approved Solvent storage cabinet

c) Accessories:

Furnishing and delivering all service outlets, accessory fittings, electrical receptacles and switches, as listed in these specifications, equipment schedules or as shown on drawings. Fittings attached to the fume hood superstructure shall be mounted on the front fascia of the hood as per the drawings. Furnishing and delivering all service outlets, accessory fittings, electrical receptacles and switches, as listed in these specifications, equipment schedules or as shown on drawings. Plumbing fixtures mounted on the fume hood superstructures shall be pre-plumbed up to 150mm above the Fume hood with SS-304 TUBING / Hoses. Electrical fixtures shall be prewired up to the Junction box provided on top of every Fume hood. Final plumbing and electrical connections are the responsibility of Plumbing & Electrical contractors.

(II) PART I- MATERIAL OF CONSTRUCTION

a) Fume Hood Superstructure Frame:

A structure of steel angle shall be provided to support exterior panels and interior liner and baffle panels. To allow for maintenance and replacements, the interior liner panels shall be removable without disassembly of the frame structure and outer steel panels. Likewise, the exterior steel panels shall be removable without disassembly of the frame structure and inner liner panels. Fume hoods that require disassembly of the superstructure for liner replacement are not acceptable.

b) Fume Hood Interior Walls:

Double wall ends, not more than 140mm wide, shall be provided to maximize interior working area. The area between the double wall ends shall be closed to house the remote-control valves. The front vertical facia section shall have a full 135-degree 25mm radius at the front leading edge to provide a streamlined section and ensure smooth even flow of air into the hood. The vertical facial shall contain the required service controls, electrical switches and receptacles. The hood interior end panels and sash track shall be flush with the facia to prevent eddy currents and back flow of air.

c) Fume Hood Airfoil:

A streamlined airfoil shall be integral at the bottom of the hood opening on bench and distillation hoods. This foil shall provide a nominal 25mm open space between the foil and the top front edge of the work surface to direct an air stream across the work surface to prevent back flow of air. The airfoil shall extend back under the sash, so that the sash does not close the 25mm opening. The foil shall be removable to allow large equipment into the hood. The foil shall be of 12-gauge 2.6mm thick steel to resist denting and flexing. Walk-in hoods shall have a stop located at the bottom of the sash track that will ensure a nominal 25mm opening between the bottom of the sash and the floor.

d) Fume Hood Liners:

Interior liner panels shall be 6mm thick made from a compression molded cellulose fiber reinforced phenolic resin core with integrally cured white melamine surfaces. Interior liner panels shall be fastened using stainless steel screws with plastic covered heads.

SEFA 8.0 Certified from authorized SEFA approved agency with 10 years written Product Guarantee for all properties mentioned in material property data sheet. 10 years of proven testimonials in Global and Indian reputed Government & Private Research Laboratories. Fire Rating certified by 3rd party for Fume hood application with minimum 60 minutes of Fire rating.

e) Fume Hood Work top:

The work tops shall be of 30 mm Jet black Granite of an even surface and the level tolerance less than 1 mm & not less than .375mm deep to contain spillage with a 75mm wide safety ledge across the front edge. A cup sink flush with the recessed work surface shall be provided.

f) Fume Hood Baffles:

A stable, non-adjustable baffle with three fixed horizontal slots shall be provided to aid in distributing the flow of air into and through the hood. The baffle shall be spaced out 60mm from the back liner. The baffle shall be removable for cleaning. Baffle to be manufactured with the same material specification of interior liner.

g) Fume Hood Lighting:

A one-tube, energy-efficient, LED light fixture of the size given below shall be provided in the hood roof. Illumination at the work surface shall be at least 500 Lux.

Hood Size, MM.	Nominal Fixture Length, MM.
1200	900
1500	1200
1800	1200
2100 /2400	900 (2 Fixtures)

The light fixtures shall be isolated from the hood interior by a 6mm thick tempered glass panel sealed from the hood cavity. Fixture shall be UL labelled.

h) Fume Hood Sash:

1. Sash:

The sash shall have a vertical rising steel frame. The bottom of the sash frame shall have a full-length metal handle. The sash track shall be a neutral colored polyvinyl chloride set flush with the interior liner panels to minimize turbulence. The sash shall be counterbalanced with a single weight to prevent tilting and binding during operation. The glass panels shall be 6mm laminated safety float glass mounted on metal rollers in an aluminium track.

i) Fume Hood Plumbing Services:

1. All Utility services shall consist of remote-control valves as selected located within the end panels, controlled by extension rods projecting through the control panels of the hood, and with color coded plastic handles. All plumbing fittings shall be installed and piped up to 150mm above the Fume hood top. All the Plumbing shall be SS 304 hard / flexible tubes as per media specification
2. Fume hood Valves/Outlet manufacturer shall be certified to ISO 9001 / EN 29001 / BS 5750 Part 1, or equivalent.
3. The manufacturer should guarantee the availability of spare parts and replacement products for a period of minimum 10 years.
4. All external surfaces of the valve shall be surface treated with a chemical resistant polyester powder coating that shall be highly resistant to most chemicals and provides excellent light fastness. Minimum thickness of coating shall be 50µm.
5. The handles of the valves must be mounted with "zero gap" on the spindle of the headwork. The handle should be made of metal and the handle must have a clear closing/opening indication.
6. The valve and outlets should be delivered with an "easy-to-mount" inlet connection, wherever possible to connect hoses, Cu-, SS-, or PEX pipes directly into the inlet of the valve, depending on the applications.
7. Both valves and outlets should be delivered with color and media indication in accordance with EN 13792:2002.
8. Every fitting should be leak-tested before leaving the factory.

j) Fume Hood Valves for water

The valves must be supplied with a 2x360° open/close function rubber headwork for fine regulation. The sealing must be made of EPDM and the lubrication must be silicone-based. The valves should be capable of operating at maximum operating pressure of 10 bar (145 psi). Handle of the fittings to be metal.

k) Fume hood Outlets for water

The water outlets shall be connected to the drain line of Cup sink & transferred to Main drain line.

l) Fume hood valves for Potable Water

The valves must be supplied with a 2x360° open/close function rubber headwork for fine regulation. The sealing must be made of EPDM and the lubrication must be silicone-based. The valves should be capable of operating at maximum operating pressure of 10 bar (145 psi).

The outlets must be supplied with 1LPM flow fix for flow restriction. The handle of the fittings should be metal.

m) Non-burning 2.0 Gases

The valves must be supplied with a fine regulating needle headwork having 3x360 degrees open/close operation for fine regulation of media flow. The sealing must be made of FKM/FPM and the lubrication must be Perfluoropolyether based. The valves should be capable of operating at maximum operating pressure of 16 bar (232 psi). The handle of the fittings should be metal.

n) Non-Burning 2.0 Gases/Vacuum Outlets

1. The sealing of the outlets for non-burning 2.0 gases / vacuum must be made of FKM/FPM and the lubrication must be Perfluoropolyether based. The non-burning 2.0 gas / vacuum outlets should be delivered with rear wall connection (RWC) for compact installation. It should be possible for the outlet to be removed from outside without demounting the Fume hood panel. The handle of the fittings should be metal.
2. The outlets must be equipped with a hose nozzle according to DIN 12898. Depending on user requirement and preferences, the hose nozzle can be made of polypropylene or powder coated brass and to be of a removable type.

o) Fume Hood Electrical Services

The hood superstructure shall be pre-wired and contain a UL label certifying acceptable wire gauge, connections, fixtures and wire color coding. Wiring electrical services shall consist of 3 Nos of 20Amps 1 Phase 3 pin Industrial Plug and socket controlled by Tiny trip MCB at both sides each, emergency stop push buttons and a light switch. Distribution Board with 20/25Amps DP RCBO as incomer and outgoings will be 20Amps x 3. Internal wiring from DB to each circuit, emergency push button and lighting shall terminate in one 150mm x 150mm x 100mm service junction box located on the fume hood roof. Final wiring and circuit dedication shall be by others. The control panel should be located in the front face panel of the fume hood for easy accessibility for maintenance.

p) Electric Hatch

There shall be two hatches, one in each vertical front side of the fume hood near worktop level which will allow passage of the electric wires of the equipment being used in the chamber to be guided through and connected to the electric power points

FIG: 16 TYPICAL ELECTRICAL HATCH DETAILS

q) Access Opening:

The interior end liner panels shall be furnished with an opening that provides access to the service piping and valves to facilitate installation and maintenance. The openings shall be covered with a removable panel with rounded corners. Panels that require tools to remove are not acceptable. The panel shall provide an overlapping seal on all edges.

r) Fume Hood Finish:

1. After the component parts have been completely welded together and before finishing, they shall be given a pre-paint treatment to provide excellent adhesion of the finish system to the steel and to aid in the prevention of corrosion. Physical and chemical cleaning of the steel shall be accomplished by washing with an alkaline cleaner, followed by a spray treatment with a complex metallic phosphate solution to provide a uniform fine-grained crystalline phosphate surface that shall provide both an excellent bond for the finish and enhance the protection provided by the finish against humidity and corrosive chemicals.
2. After the phosphate treatment, the steel shall be dried, and all steel surfaces shall be coated with a chemical and corrosion resistant, environmentally friendly, electrostatically applied powder coat finish. All components shall be individually painted, ensuring that no area is vulnerable to corrosion due to lack of paint coverage. The coating shall then be cured by baking at elevated temperatures to provide maximum properties of corrosion and wear resistance.
3. The completed finish system in standard colours shall meet the performance test requirements specified under Performance Requirements.

ANNEXURE III

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

1. Photocopies of the PAN/GST
2. GST registration certificate of the Kerala State if already obtained by the bidder. If the bidder has not obtained GST registration of Kerala State as required by GST Authorities, then in such a case the bidder shall scan and upload the following undertaking along with other bid documents.

   "If work is awarded to me, I/We shall obtain GST registration certificate of the Kerala State, within one month from the date of receipt of award letter or before release of any payment by IITPKD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by IITPKD or GST Department in this regard".

3. Details of All Works of Similar Nature Completed during The Last Five Years - FORM A (ANNEXURE VIII)
4. Performance Report for similar works completed - FORM B (ANNEXURE IX)
5. Letters of Transmittal
6. Digitally signed tender document
7. Bidders, who are bidding for this shall have satisfactorily completed the works as mentioned below during the last FIVE YEARS ending previous day of last date of submission of bid:

   THREE similar completed works each costing not less than the amount equal to Rs. 39 lakh

   (OR)

   TWO similar completed works each costing not less than the amount equal to Rs.76 lakh

   (OR)

   ONE similar completed works each costing not less than the amount equal to Rs. 1 Crore

   "Cost of work" for this clause shall mean completed cost of work as mentioned in the final bill including internal electrical works, if any, carried out under single contract including cost of materials, if any, supplied by clients. However, the cost of materials issued free of cost shall not be considered for calculating the cost of work. The value of executed works shall be brought to current costing level by enhancing the actual value of work at a simple rate of 7% per annum; calculated from the date of completion to the last date of receipt of applications for bids. "Similar work" for this clause means "Similar completed work in Centrally Funded Technical Institutes (CFTI) which includes IITs, IISERs, IIMs, NITs, IIITs, IISc and IIEST), CSIR Institutes, Central Universities where they have completed the similar works (Lab Furnishing works) including Fume Hoods, laboratory furniture, and related accessories."

ANNEXURE IV

FORM OF PERFORMANCE SECURITY
BANK GUARANTEE BOND

In consideration of the Indian Institute of Technology Palakkad (hereinafter called "IIT Palakkad") having offered to accept the terms and conditions of the proposed agreement between.....and.....
(hereinafter called "the said contractors") for the work .....(hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs.....
(Rupees.....only) as a security /guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We..... (Hereinafter referred to as "the

   (Indicate the name of the Bank)

   Bank") hereby undertake to pay to the IIT Palakkad an amount not exceeding Rs.....
   (Rupees.....only) on demand by the IIT Palakkad.
2. We .....(Indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the IIT Palakkad stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractors. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee

   shall be restricted to an amount not exceeding Rs.....
   (Rupees.....only).
3. We, the said Bank further undertake to pay to the IIT Palakkad any money so demanded notwithstanding any dispute or disputes raised by the contractors in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment made by us under this bond shall be a valid discharge of our liability for payment there under and the contractors shall have no claim against us for making such payment.
4. We.....(indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the IIT Palakkad under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractors and accordingly discharges this guarantee.

5. We .....(Indicate the name of the Bank) further agree with the Government that the IIT Palakkad shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractors from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractors and to for-bear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractors or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We .... (Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.

8. This guarantee shall be valid up to_____ unless extended on demand by IIT Palakkad. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs._____ (Rupees_____only) and unless a claim in writing is lodged with within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the _____day of _____for
(Indicate the name of the Bank).

ANNEXURE V

DECLARATION

We hereby undertake that there are _____pages, serially numbered, in the submitted tender including the supporting documents. (Please serial number all the pages including blank pages, if any). We have submitted our principal's exclusive authorization letter which is specific for this tender No. dated .

Signature and Seal of the Bidder

ANNEXURE VI

FALL CLAUSE NOTICE CERTIFICATE

(To Be Submitted Only Through Online Mode in Appropriate Format)

This is to certify that we have offered the maximum possible discount to you in our Quotation No.___ dated_____(Please do not reveal the prices here, which will lead to outright rejection of your bid). The prices charged for the Stores supplied under tender should under no event be higher than lowest prices at which the party sells the items of identical description to any other Govt. organization/PSU‟s/Central Govt, /State Govt. Autonomous bodies/Central/state Universities/Central/State Educational Institutions, failing which the "FALL CLAUSE" will be applicable. The institute will look into a reasonable past period to ensure this. In case, if the price charged by our firm is found to be more, IIT Palakkad will have the right to recover the excess charged amount from the subsequent/unpaid bill of the Contractor.

Note:

This letter of authority should be on the letterhead of the quoting firm and should be signed by a Competent Authority and having the power of attorney.

ANNEXURE VII

LETTER OF TRANSMITTAL

(To be duly filled, signed, scanned and uploaded along with e-cover 1 by the tenderer)

To
The Chairman, EWD
IIT Palakkad

Sir,
Having examined the details given in notice inviting qualification application and tender and the qualification documents for the above work, I / We hereby submit the application for eligibility and the tender (financial bid) for the work duly filled in.

1. I / We hereby certify that all the statements made, and information supplied in the enclosed forms and accompanying statements are true and correct.
2. I/ We have furnished all information and details necessary for deciding our eligibility to be qualified for taking part in the tendering process for the work. We have no further information to supply.

3. I / We submit the requisite solvency certificate and authorize the CHAIRMAN EWD, Engineering Works Department, EWD to approach the bank concerned to confirm the correctness of the certificate. We also authorize the CHAIRMAN, EWD to approach individuals, firms and corporations to verify our competence and general reputation.
4. I/We submit the following certificates in support of our suitability, technical know-how and capability for having successfully completed following works.

Name of work	Certificate from

5. I/We certify that the tender documents uploaded is the exact replica of the document published by the IITPKD and no alterations and additions have been made by me/us in the e- tender document.

6. I am /We are aware that the Financial bid submitted by me/us will not be opened if I/We do not become eligible after evaluation of my/our application for eligibility.
7. 1/We certify that the Proforma for EMD Declaration and Bank guarantee which was /were scanned and uploaded while submitting the e- Wizard.

8. I/we agree that the eligibility criteria submissions will become part of the contract.

Seal of the Applicant

Date of submission Signature(s) of the applicants

ANNEXURE VIII

FORM A

(To be duly filled, signed, scanned and uploaded along with cover 1 by the tenderer)

DETAILS OF ALL WORKS OF SIMILAR NATURE COMPLETED DURING THE LAST FIVE YEARS.

Sl No	Name of work Project / Location	Owner or organizations	Agreement Scope of work*	Cost of Work in	Date of Commencement	Stipulated Date of completion	Actual date of completion

Signature of Applicant(s)

In case of works carried out for private persons/ Organizations copies TDS certificate along with copy of performance order and work order/Agreement should be enclosed. Private works without TDS certificates shall not be considered for eligibility.

ANNEXURE IX

FORM B

(To be duly filled, signed, scanned and uploaded along with cover 1 by the tenderer)

PERFORMANCE REPORT FOR WORKS REFERRED

I. Name of the work/Project & Location.

1. Scope of work.

2. Agreement No.

3. Estimated Cost

4. Tendered Cost

5. Value of work done

6. Date of Start

7. Date of completion

8. Amount of compensation levied for deficiency in services if any.

9. Performance report based on
Quality of Work,
Time Management,
and Resourcefulness : Very Good /Good /Fair / Poor

DATE:

ENGINEER-IN-CHARGE/ PROJECT MANAGER OR EQUIVALENT

Certificate shall be submitted separately for each work

ANNEXURE X

FORMAT OF UNDERTAKING, TO BE FURNISHED ON COMPANY LETTER HEAD WITH REGARD TO BLACKLISTING/ NON- DEBARMENT, BY ORGANISATION

UNDERTAKING REGARDING BLACKLISTING / NON – DEBARMENT

We hereby confirm and declare that we, M/s ----------, is not blacklisted/ De-registered/ debarred by any Government department/ Public Sector Undertaking/ Private Sector/ or any other agency for which we have Executed/ Undertaken the works/ Services

For ----------

Authorized Signatory

Date: