भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुवनंतपुरम
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
THIRUVANANTHAPURAM
(भारत सरकार, शिक्षा मंत्रालय/ Govt. of India, Ministry of Education)
मरुतामला.पी.ओ/ MARUTHAMALA.P.O, वितुरा/ VITHURA / तिरुवनंतपुरम/ THIRUVANANTHAPURAM – 695 551 केरला/
KERALA, भारत/ INDIA / फोन/ Phone: 0471-2778019 / ईमेल/ email: purchasestores@iisertvm.ac.in
GST 32AAAJI0299R1ZS

तारीख/ Date: 30 Aug 2024

निविदा के लिए आमंत्रण (इ-प्रोक्योमेंट मोड)/ INVITATION TO TENDER (E-Procurement mode only)

No: IISER/PUR/0660/KG/SP/24-25 **नियत तारीख**/Due Date: 19 Sep 2024 [3PM]
खोलने की तारीख/Date of Opening: 20 Sep 2024 [3.30PM]

प्रिय महोदय/Dear Sirs,

विषय / SUB: Supply and Installation of LCV type fume hood and its accessories including the necessary ducting: reg

The Institute invites Single Cover Tenders for the following items through the eProcurement System of National Informatics Centre that enables the Tenderers to download the Tender Schedule free of cost and then submit the bids online through Central Public Procurement Portal of Government of India (https://eprocure.gov.in/eprocure/app.). Please quote only in Indian Rupees as per GFR 2017 amended Rule 161 (iv) and Public Procurement (Preference to make in India) order 2017, with your lowest rate and shortest delivery period as per the following terms.

Ser	Description of Goods	Qty
1.	Supply and Installation of LCV type fume hood and its accessories including the necessary ducting as per Annexure 6	As per annexure 6

A. **ईएमडी**/EMD: **Rs. 10,000/- (Rupees Ten thousand only)** स्टेट बैंक संग्रह द्वारा भुगतान करना चाहिए - निविदा संख्या और कंपनी का नाम उल्लेख किया जाना चाहिए। उद्धरण के साथ लेनदेन पर्ची / प्रिंट आउट या ईएमडी मूल्य के बराबर 90 दिनों की वैधता में बैंक गारंटी या बोलीदाता के उपक्रम जमा करना चाहिए।/ should be paid through State Bank Collect– Tender No & Company Name must be mentioned in the Remarks column. (https://www.onlinesbi.com/sbicollect/icollecthome.htm (State Bank Collect- Accept-Term and Conditions- Proceed-Select State Kerala-Select Type of Institution-Educational Institution- Select - IISER Thiruvananthapuram- Select Payment Category- Stores and Purchase) Quotes should accompany a copy of Transaction slip /Print out OR Bank guarantee equivalent OR Insurance Surety Bond to the EMD value with validity 90 days (should reach before tender due dates). EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy.

B. **भुगतान**/ PAYMENT: आपूर्ति और स्थापना के बाद 30 दिनों के अंदर **आईआईएसईआरटीवीएम द्वारा कोई अग्रिम भुगतान नहीं किया जाएगा।**/ Within 30 days after supply and installation. Advance payment will not be made by IISERTVM.

C. **वितरण**/ Delivery: विथुरा कैंपस में वितरित करना है(मुफ्त वितरण)। अगर आयात करें तो स्पष्ट रूप से ब्रेकअप शुल्क के साथ पूर्व-कार्य / एफसीए / सीआईपी शर्तों का उल्लेख करें।/ To be delivered at Vithura Campus (Free delivery including unloading charges).

Anwar Sadath
30/8/24

D. **कर एवं कर्तव्य**/ TAXES & DUTIES: At actuals. Indicate taxes and duties. We are partially exempted for customs duty under 51/96 notification.

E. **छूट**/ Discount: अगर कोई है तो सूचित करें।/ Indicate, if any.

F. **वितरण अनुसूची**/Delivery Schedule: अति आवश्यक है। अपना अनुसूची उल्लिखित करें।/ Required Immediately. Indicate your schedule

G. **उद्धरण की विधिमान्यता** Validity of quote: 90 दिन/90 days.

H. The Class I local supplier and Class II local supplier should mention in the bid, the percentage of local content. Bidder should provide the details of the location(s) at which the value addition is made along with bid document. Any non-compliance in this regard, the bid will not be considered in the category.

I. Annexure 3,4 ,5 and EMD: should be enclosed with the offer. If not, the bid will be summarily rejected.

Details: Annexure 1: Terms & Conditions, Annexure 2: Instructions to Bidder for Online Bid Submission, Annexure 3: Certificate by bidder Annexure 4: Tender Acceptance Letter, Annexure 5 : Certificate of not being blacklisted Annexure 6: Detailed Specifications Annexure 7: Check list of documents required.

भवदीय/ Yours Faithfully

Anwar Sadath
2018/24
ASSISTANT REGISTRAR
PURCHASE & STORES

ANNEXURE: 1

निविदाकारों के लिए निर्देश (स्वदेशी)/ INSTRUCTION TO TENDERER

1. कर/ अन्य कर्तव्य/ अधिभार निविदा में अलग से दिखाया जाना चाहिए।/ Tax and /or other duties/levies where legally levies and intended to be claimed should be distinctly shown separately in the tender.
2. (a) आपका उद्धरण निविदा खोलने की तारीख से 90 दिनों के लिए मान्य होता है। निश्चित कीमत के साथ के संविदा दर को प्राथमिकता दी जाएगी।/ Your quotation should be valid for a minimum period of 90 days from the date of opening of the Tender. Quotation with firm prices will be preferred.
   (b) निविदा के आमंत्रण में संकेतित इकाइयों के अनुसार कीमत उद्धृत करना है। जब निविदा फॉर्म में उल्लिखित इकाइयों के अलावा संविदा दर दिए जाने पर दो इकाइयों के बीच के संबंध प्रस्तुत किया जाना चाहिए।/ Prices are required to be quoted according to the units indicated in the Invitation to Tender. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
3. (a) **तैयार माल से आपूर्ति करने वाले निविदाओं** को वरीयता दी जाएगी। वितरण का आधार आईआईएसईआर के साइट पर मुफ्त में है।/ Preference will be given to those tenders offering supplies from ready stocks. The basis of delivery is at IISER site free of cost.
   (b) हमारी भुगतान की शर्तें माल की प्राप्ति और स्वीकृति के 30 दिनों के भीतर होगा।/ our payment terms are within 30 days of receipt and acceptance of the item at our site.
4. (a) वस्तुओं के सभी उपलब्ध तकनीकी साहित्य, सूचीपत्र और अन्य आंकडे प्रस्ताव के साथ प्रस्तुत किया जाना चाहिए।/All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.
   विशेष विवरण/ Specifications: **प्रस्तावित** भंडार हमारे विवरण के अनुरूप होना चाहिए। अगर विचलन है तो निविदाकार अपने उद्धरण में संकेत दिया जाना चाहिए। निविदाकार भंडार के प्रारूप सूचित करना चाहिए और आवश्यक होने पर संविदा दर के साथ सूचीपत्र, तकनीकी साहित्य और नमूने प्रदान करना चाहिए। आवश्यक होने पर परीक्षण प्रमाण पत्र आपूर्ति के साथ अग्रेषित किया जाना चाहिए। निविदाकार को उपयुक्त कारणों के साथ विनिर्देशों में परिवर्तन का सुझाव दे सकता है।/ Stores offered should strictly conform to our specifications. Deviations, if any should be clearly indicated by the tenderer in their quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary along with the quotations. Test Certificates wherever necessary should be forwarded along with supplies. Whenever specifically mentioned by us the tenderer could suggest changes to specifications with appropriate reasons for the same.
5. आईआईएसईआर को निम्नतम या किसी भी निविदा को स्वीकार करने के लिए कोई दायित्व नहीं होगा और पूरे या निविदा के किसी हिस्से के स्वीकृति का अधिकार सुरक्षित रखेगा और निविदाकार उद्धृत दरों पर समान की आपूर्ति करना चाहिए।/ IISER shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rates quoted.
6. अगर संवुदा दर में कोई सुधार होने पर इसे प्रमाणित किया जाना चाहिए। सभी राशी शब्दों और आंकड़ों में भी सूचित किया जाना चाहिए। यदि शब्दों और आंकड़ों में उद्धृत राशि के बीच अंतर होने पर शब्दों में उद्धृत राशि प्रबल होगी। संविदा दर में प्रत्येक वस्तु के मूल्य होना चाहिए और कर और कर्तव्यों सहित मूल्य की कुल राशि का स्पष्ट रूप से उल्लेख किया जाना चाहिए।/ Corrections, if any, in the Quotation must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail. Quotation must have price for each line item and totaling of the price including taxes and duties should be clearly mentioned.
7. निविदाकार निविदा में अपने बैंकर, कर पंजीकरण, पैन नंबर आदि उल्लिखित करना चाहिए।/ The tenderer should mention the name of his bankers, Tax Registration, PAN number etc in the tender.
8. निविदा पर हस्ताक्षर करने वाले व्यक्ति बुलाने पर उपस्थित होना चाहिए। The authority of the person signing the tender, if called for, should be produced.
9. IISER being a Govt of India Educational and Research Institute, is exempted from payment of Customs Duty under Notification No. 51/96- Customs dated 23rd July 2009.
10. आपूर्ति की गई भंडार आपूर्ति, स्थापना और कमीशन की तारीख से 1 वर्ष वारंटी में होगा।/ The stores supplied should be covered with minimum of 1 year warranty from the date of supply, installation and commissioning, if not stated otherwise in tender specification.
11. निविदा के आमंत्रण में उल्लिखित के अनुसार धन जमा / बोली सुरक्षा जमा उद्धरण के साथ जमा किया जाना चाहिए। ईएमडी भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुवनंतपुरम के पक्ष में 90 दिनों के लिए मान्य होगा।/ Earnest Money Deposit/ Bid Security should be submitted along with your quote as mentioned in Invitation for Tender. EMD should be in favour of Indian Institute of Science Education and Research Thiruvananthapuram valid for 90 days.
12. IISER-TVM comply with order No. P-45021/2/2017-PP(BE-11) dated 04 Jun 2020 (Public Procurement/ Preference to Make in India) and its order 2017 revision.
13. LD Clause: LD may be imposed @ 0.5% per week after stipulated delivery period.
14. Award of Contract (AOC) would be issued to the technically qualified lowest bidder.
15. Tender due date would be auto-extended upon non-receipt of sufficient number of bids.
16. If the bidder withdraws or modifies or amends its tender or impairs or derogates from its bid during the bid validity period or if awarded the contract and fails to sign the contract or fails to furnish order acceptance or performance security before the deadline defined by the Institute, they will be suspended for the period of time as decided by the administrative competent authority of IISER Thiruvananthapuram from being eligible to submit bids for contracts floated by the Institute in accordance with GoI MOF Office memorandum NO. F/9/4/2020-PPD dated 12 Nov 2020 and GFR

ANNEXUE: 2

Instructions To Bidder for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: https://eprocure.gov.in/eprocure/app.

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link "Online bidder Enrollment" on the CPP Portal which is free of charge.
2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document.
3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.
   Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.

SUBMISSION OF BIDS

1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
5) Bidders are requested to note that they should necessarily submit their technical & financial bids in PDF format only and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
9) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

Annexure 3

CERTIFICATE BY THE BIDDER (FOR TENDERS)
(ON COMPANY LETTER HEAD)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India. I certify that this bidder is not from such a company or, / if from such a country, has been registered with the Competent Authority (copy of the Registration Certificate enclosed). I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.

Date:

Place: Signature with Date and Stamp of the Bidder

ANNEXURE: 4

TENDER ACCEPTANCE LETTER (To be given on Company Letter Head)

To, Date:

The Director, Indian Institute of Science Education and Research – Thiruvananthapuram,
Maruthamala P.O, Vithura, Thiruvananthapuram, Kerala -695551, India.

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____
Name of Tender / Work: -

_____

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely: _____ _____ as per your advertisement, given in the above mentioned website(s).
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .,), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organization too have also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. I / We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.
6. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.
7. I / We declare the following information provided are correct to the best of my knowledge:

1	Name and Address of the bidder	
2	Manufacturer / Dealer / Agent	
3	Contact Person	
4	Phone	
5	Email	
6	Mobile Number	
7	GST No	
8	PAN No	
9	UTR No / DU No (in case of online transfer of Tender Fee) (if any)	
10	UTR No / DU No (in case of online transfer of EMD)	
11	Warranty, if any	
12	Delivery period	
13	Payment terms	
14	PO to be placed in favour of	

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

CERTIFICATE
(ON COMPANY LETTER HEAD)

I hereby certify that we M/s _____

_____

_____ (name and address of the firm) is neither blacklisted by any Central/ State Government / Public Undertaking/ Institute nor is any criminal case registered / pending against the firm or its owner / partners anywhere in India.

I also certify that the above information is true and correct in every aspect and in any case at a later date it is found that any details provided above are incorrect, any contract given to the above firm may be summarily terminated and the firm blacklisted.

Date:

Place: Signature with Date and Stamp of the Bidder

Sr. No.	Description	Qty.	Unit
1	**LCV type Bench Fume Hood** **(Size: L 1500 x D 915 x H 2300 mm) (For AC Labs)**	1.00	Nos.
	Consisting of following : Fume Hood Superstructure Fume Hood Worktop Service Valves Electrical Fittings Fume Hood Understructure Fume Hood Under-Cabinet (Chemical Storage Purpose) Accessories		
2	**Exhaust Fan (PP-25) - one fan for 1 Nos. 1500 mm wide Fume Hood**	1.00	Nos.
	-Single piece molded UV treated chemical resistant SISW direct driven centrifugal fan in PP constuction with suitable stand in MS powder coated construction, CFM 640 -Corrosive resistant PP impeller with extra strength,high efficency, properties which produces lower noise and power consumption. -Drive - 1 HP, 1400 RPM, 415V, 50Hz., TEFC Class B insulation induction motor with IP55 enclosure, in Non- FLP const. - 16A, 3Ph MCB for Fan - Legrand or eq. Make - DOL Starter for Motor.		
3	**Exhaust ducting in PP + FRP (Round Shape) construction (3mm + 2mm) complete with necessary bends, reducers, T-connections, supports, flanges, gaskets, nutbolts etc.** Note: 1) **Amount for ducting work shall be payable as per actual measurement**	38.00	Sq. Mtr.

Anwar Sadath
30/8/24

1. Low constant volume (LCV) type Bench Fume Hood for AC Lab, Quantity 1 NOS

Consisting of the following (Detailed specification provided in **Specification A)**

-Size: L 1500 x D 915 x H 2300 mm

-Fume Hood Superstructure with Phenolic resin panels & **LED light**

-Fume Hood Worktop; **Black Granite Const.**

-Service Valves

-Electrical Fittings as specified

-Fume Hood Understructure

-Fume Hood Under-Cabinet (Chemical Storage Purpose)

-Grills in the fume hood should have both vertical and horizontal rods

-Accessories

2. Supply & Installation of exhaust ducting in PP+FRP (300mm Dia)

Construction (3mm + 2mm) complete with necessary bends, reducers, T-connections, supports, flanges, gaskets, nutbolts etc.

Quantity: Length of Ducting (~38.00 Square Mtr.)

Note 2: Amount for ducting work shall be payable as per actual measurement.

3. Exhaust Fan(PP 25) (Premier Make) -1 fan for 1 No 1500mm wide fume hood

Consisting of the following (Detailed specification provided in **Specification A)**

-Single piece molded UV treated chemical resistant SISW direct driven centrifugal fan in PP constuction with suitable stand in MS powder coated construction, CFM 640

-Corrosive resistant PP Impeller with extra strength,high efficiency, properties which produces lower noise and power consumption.

- Drive – 1 HP, 1400 RPM, 415V, 50Hz, TEFC Class B insulation induction motor with IP55 enclosure, in Non- FLP const.

- Fresh Air Bleed controller : comprising AFA1000/E/BLD controller MK2, duct pressure transducer,(0-1000pa), power supply / relay interface, with electric actuator 6Nm

- 315mm Combi Bleed damper

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INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
THIRUVANANTHAPURAM (IISER TVM)
(An Autonomous Institute under MHRD, Govt. of India)

IISER
THIRUVANANTHAPURAM

TECHNICAL SPECIFICATIONS FOR SUPPLY, INSTALLATION AND COMMISSIONING OF FUME HOODS AND FURNITURE IN PSB B201

- Manual Bypass PP Damper 300 mm Dia- 1 Nos

- 16A, 3Ph MCB for Fan - Legrand or eq. Make

-DOL starter for motor

- Electrical Panel with necessary internals and VFD for fan.

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Specification A

Furnishing Laboratory Fume Hood at the aforementioned labs at Chemical Science Block, IISER Campus, Thiruvananthapuram

Contents

DETAILS OF CERTIFICATION

1. COMPANY PROFILE: The vendors/ bidders, Indian should be registered as per the Company norms in India having a place of business in India. Clear supportive documents in this regard should be uploaded. Vendor / Bidder must upload the scanned copy of PAN Card , Trade License (If applicable) , Incorporation Certificate , Factory License , Income Tax Return of the last 3 (Three) Financial Years. GST Registration Certificate and Certificate of Registration with EPF and ESI.

2. CERTIFICATIONS : OEMs (Vendors/Bidders) should have valid i) ISO – 9001: 2015; ISO – 14001:2015 ; ISO 45001 : 2018 certification / certified company; ii); IGBC CERTIFICATE in technical bid and iii) should also have valid SEFA Membership for minimum 12 consecutive years and valid ASHRAE Membership certificate for Fume Hoods.

3. Vendor / Bidder should submit valid certificate of SEFA 8 and SEFA 10. Vendors /Bidders should submit third party Test Certificate of SEFA 8M (2016) by SEFA as well as SEFA 10 – 2016 by SEFA approved Laboratory for Laboratory Furniture and third party certificates of ASHRAE 110-2016 for Laboratory Fume Hoods. Detailed documentary evidence for the same must be included in the technical bid.

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1 GENERAL CONDITIONS

1.1 SUMMARY

A. This Section specifies requirements for the selection, installation, and testing of laboratory fume hoods. The scope of work includes, but is not limited to, the following:

1. The installation of all specified accessories such as monitor, cup sinks, petcocks, lighting, electrical, base cabinets, work surfaces, and filler panels.

2. Internal hoods plumbing and wiring.

B. The Contractor shall provide all miscellaneous parts and labor required to provide a complete and functioning fume hood.

1.2 RELEVANT CODES AND STANDARDS:

The following are the primary organizations and standards regarding fume hoods:

-OSHA Part 1910.1450. OSHA stands for Occupational Safety and Health Administration. The agency regulations regarding fume hood operation are listed in the Code of Federal Regulations Volume 29 Part 1910.1450. This code addresses several aspects of laboratory design and operation. Regarding hoods, it is primarily concerned with airflow at the face of the hood, monitoring, maintenance and exhaust.

-ANSI/ASHRAE 110-1995. Method of Testing Performance of Laboratory Fume Hoods. This standard is published by the American National Standards Institute and the American Society of heating, Refrigerating and Air Conditioning Engineers, Inc. It concerns itself primarily with methods of testing fume hoods to check their operation.

-ANSI/AIHA Z9.5. Titled "The American National Standard for Laboratory Ventilation" this standard is published by ANSI and the American Industrial Hygiene Association. It covers a variety of lab ventilation issues including hood monitoring, face velocities and exhaust.

-IS 4209, Indian Standard code for Chemical Laboratories- Code of Safety. It generally deals with the factors involving safety, laboratory design for safety, etc.

-NFPA 45. This standard is prepared by the National Fire Protection Association. It recommends hood construction, location, fire protection, specialty hoods, identification, inspection, testing and maintenance and exhaust.

-SEFA 1.2-1996. SEFA is the Scientific Equipment & Furniture Association. Its publication "Laboratory Fume Hoods Recommended Practices" covers design requirements of hoods, face velocities and testing.

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1.3 INSTALLER QUALIFICATIONS

Fume hoods shall be installed by skilled electricians and mechanics, all of whom are properly trained and qualified for this work. As a minimum, the system must conform to all codes and manufacturers' instructions and recommendations.

1.4 SUBMITTALS

A Prepare and submit CAD Shop Drawings and product data. Includes:

1 Plans, elevations, sections, and details illustrating shop fabrication, field assembly, and installation.
   a) Show size and location of all cutouts.

2 Fume hood data including all components and accessories
   a) Identify all manufacturer standard components with catalog numbers and identify all materials of custom-fabricated items.

3 Monitor manual with calibration instructions

4 Manufacturer's test and certification data

5 Manufacturer's installation manual

B For Owner's Final Inspection, prepare and submit fume hood FPT documentation

C For Substantial Completion, submit O&M Manual information required

2 SCOPE OF WORK

a) Supply and Installation of fume hoods (both superstructure and under structure cabinets) including worktops based on the specified Make List based on ASHRAE 110 (American Society of Heating, Refrigeration and Air Conditioning Engineers) - American Standards for Laboratory fume hood testing and European Standards for fume hood testing

b) Supply and Installation of fume hood accessories like service outlets/fittings, electrical switches as per the specified make list. Fittings attached to the fume hood superstructure shall be mounted on the front fascia of the hood.

c) Plumbing fixtures mounted on the fume hood super structures shall be pre – plumbed and electrical fixtures shall be pre – wired. All fume hoods to be fitted with electrical control box with motor starter and all the required electronic circuits.

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d) Removal of all debris, dirt and rubbish accumulated as a result of installation of the fume hoods leaving the premises clean and orderly.

e) Manufactures should provide data indicating compliance with ASHRAE 110 or BS EN-14175 standards, at least one of the two.

Standard Fume Hood Performance Requirements

Fume hoods shall be of complete airfoil design to ensure maximum operating efficiency. Foil sections at the front facials of the hood shall minimize eddying of air currents at the hood face and the rear baffle system shall minimize turbulence in the upper portion of the hood interior. All the fume hoods shall be designed for an approximate face velocity of **80 to 100** fpm.

3 SPECIFICATION

Type of Fume Hood: Low Constant Volume (LCV) Type bench Fume hoods for AC Lab;

Overall Dimension: ≥ L 1500 x D 915 x H 2300

Inner Dimension: L 1300 x D 645 x H 1250

(I) Outer Construction/ Super structure

The super structure shall be double walled construction housing, concealed steel angle frame members of size 45x45x2mm, attaching brackets and remote service fixture valves, constructed using high quality, cold rolled, mild and degreased steel (conforming to IS: 513/ASTM A366).

Fume hood superstructure consisting of –

- Structure frame in 2.0 mm thick GI construction
- Outer panels in 1.2 mm thick GI construction
- The exterior of the structure shall be pre-treated with 8 tank chemical processes and powder coated with highly chemical resistant epoxy Colors having dry film thickness of 70 to 80 microns for chemical resistance, scratch resistance and to prevent rusting.

The rear part of the fume hood shall have service access for maintenance.

Inner lining and worktop

Internal side wall panels shall be fabricated using minimum 6 mm thick liner of high-pressure laminate made by compressing impregnated paper or wood fiber and epoxy, phenolic resin

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with an opening that provides access to the service piping and valves to facilitate installation and maintenance. The work top shall be made of minimum **20 mm thick Black Natural Granite** with a PP cup drain flush with the recessed work surface.

Sash

The sash shall be made of 5 mm thick transparent toughened glass having a breaking stress value of 24,000 psi with a clear openable height of 750mm and heat resistant. Combination sashes shall be provided. The sash handle should be of type anodized Al construction and should not generate eddies in the plane of the sash opening. It should be thin enough in profile to minimize interference with the line of sight of the fume hood user. The counterbalance mechanism should use a single counterweight, stainless steel wires on ball bearing pulley assemblies. A cable-retaining device should be provided, assembled to prevent tilting of the sash during operation. Spring counterbalance mechanisms are not acceptable. The sash should move easily and quietly and remain in place wherever it is stopped. The sash should open and close against rubber bumper stops, installed so that the user can readily adjust the sash opening when moving the sash from either end. The design should ensure that, in the event of a failure of the counterbalance mechanism, the sash cannot fall within 50 mm of the bottom airfoil. This is in order to avoid the potential for serious injury to the fume hood user.

Airfoil

A streamlined "flip-on" type airfoil shall be integral at the bottom of the hood opening on bench hoods. The horizontal airfoil should be of 1.6 mm stainless steel, type 316 L with Teflon coated, typically installed approximately 25 mm above the raised portion of the work surface. It should be designed and installed for eddy-free entry of air into the fume hood. The air should sweep across the work surface, minimizing eddies and lessening the possibility of fumes generated near the front of the fume hood from escaping. Airfoil width should project into the fume hood beyond the plane of the sash. The airfoil should be designed to eliminate reverse flow within 75 mm of the plane of the sash.

Baffle

The baffles shall be fabricated using minimum 6 mm thick liner of high-pressure laminate and should have excellent chemical and heat resistant and fire retardant. At least three slots shall be provided for effective distribution of flow of air which shall be placed at a distance of approximately 5 cm from the back liner and shall be removable for cleaning.

Scaffold/Lattice

A 4×4 height and width adjustable scaffold made of Epoxy rods (minimum 12 mm diameter) shall be provided on to the internal liner clamped with the PP clamps to hold the test samples and rotors within the fume hood.

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Cup Sink

There shall be provision for water supply with a single valve tap in each fume hood with a high density polypropylene (approx. dimension 80×160 mm) oval shaped cup sink directly below the tap and shall be connected to the existing water inlet as well as drain outlet respectively.

Electrical Services

Lighting fixtures shall be of twin LED type light with fluorescent lamps which are sealed, vapor tight and protected by a transparent, scratch-resistant, shatter-resistant and flame-resistant material. All the electrical switches and sockets (GI construction) shall be positioned outside the fume hood just below the work top. Each fume hood shall necessarily possess minimum six 3-pin electrical sockets (220-240V, 6-16A) and a shunt tripper for the safety control of all the electrical points.

Service Valves and Plumbing

The shut-off valve or cock for the water supply shall be provided outside the fume hood. All the fittings shall be of approved makes. Utility services like Potable water shall consist of remote control valves as selected located within the end panels, controlled by in and out facility with flexible hose passing through the side panels of the hood. Interior fitting for water shall be with polypropylene/epoxy coated forged brass construction 2.0 m long flexible tubing with end fittings for following services:

SERVICE	LETTER CODING	COLOUR CODING	Tube construction
Water	DIW	White	PU-4

Digital Face Velocity Monitor

Fume hoods shall be provided with an alarm system to detect low and high hood face velocities. The alarm system shall indicate the actual face velocity of the hood regardless of sash position. The system shall have an air velocity sensor mounted on the interior side liner of the hood. The velocity monitor shall have a digital display of the air velocity through the hood face in feet per minute. The alarm signals shall activate any time the face velocity falls below the low velocity alarm set point or rises above the high velocity alarm set point. There shall be both visual and audible alarm signals. The audible alarm shall have a mute provision.

- Provide fume hood manufacturer's recommended face velocity monitor with a local audible and visual alarm, capable of detecting a drop or rise in airflow (not static pressure) through the hood.
- The monitor shall be digital with a LCD screen.

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- All parts of the system which are apt to be in contact with vapors or gases in the fume hood shall be chemically resistant, such as the controller, sensing device, and wiring.
- Provide a means to mute the audible alarm. The silence device shall not turn off the warning light.
- Provide a means for setting the alarm set point to the exhaust level desired. This adjustment shall be "internal" so that it is not readily adjustable by operating personnel.
- The low-level alarm point is 80 feet per minute (fpm) for conventional fume hoods and 56 fpm for low flow fume hoods.

Duct Collar

A 8"-10" diameter polypropylene duct collar shall be located in the top of the hood plenum chamber.

Volume Control Dampers

Damper sets in PP construction complete with pre drilled flanges on both sides, manual operation handle and extended spindle, suitable for motorized drive

Under Hood Cabinets (General Storage Purpose)

Under hood cabinets of approved makes shall be of double wall construction having an air space of 1 1/2 "throughout using 18-gauge GI/CRCA sheet epoxy coated for chemical resistance, scratch resistance and to prevent rusting. The cabinets shall be provided with leak proof sills to prevent leakage in case of accidental spills. The doors shall be of self-latching mechanism for complete closure with flush mounted locking handles and secured on full length heavy duty piano hinges. Suitable air ducts ready for connection to main exhaust system of the fume hood shall be provided. Adjustable levelling legs shall be provided to place the cabinet on uneven surface. Cabinets should be provided with large illuminating warning label to identify the type of material stored within the unit.

Finally: *No fumes leak point should be present when the fume hood is in closed condition. This is extremely important from safety point of view.*

(II) Centrifugal Blower

Silent high efficiency single piece molded PP blower consisting of continuous rating motor and chemical resistant impeller. The blower is designed to give a face velocity at safe working height as per the international safe velocity norms. (ANSI/AIHA Z9.5). The blower body is polypropylene UV treated high density and chemical (corrosion) resistant and is mounted on a metallic stand. Centrifugal Blower shall be with specs: CFM 640, 40 mm WC, Drive – 5.0 HP, 1400 RPM, TEFC class B insulation induction motor with IP55 enclosure, in Non-FLP construction.

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General:

The exhaust fans supplied and installed shall be of 'Centrifugal Corrosion Resistant' type and shall be capable of delivering the design flow rate against all duct losses. The fans shall be robust in construction and suitable for continuous duty operation. It shall be mounted with ease of maintenance and shall be installed with proper vibration isolators to minimize vibration transmission to ductwork and support structure. Fans selected shall be silent and vibration free when running and suitable for outdoor use.

Specifications:

- Housings: PP- Single block strong high-density UV treated with no welded joint. Reversible and rotable to any 8 standard discharge positions by 45-degree increments. All fan mounting hardware in stainless steel.
- Wheels: PP - Forward curved centrifugal type impeller made, of injection moulded PPH. Fan wheel supplied with hub cap constructed of PPH. Wheels electronically and dynamically balanced to ISO 1940.
- Motors – Direct drive, asynchronous, three phases, IP55. Single speed: three phase 230/400 V-50/60 Hz. Motor is outside the airstream. Three phase motors speed adjustable by variable frequency inverter drive.
- Motor Support – Several options: no stand, metal stand constructed of epoxy coated sheet metal, polypropylene motor pedestal or roof unit kit.
- Temperature Resistance – PPH casing and wheel recommended up to 80 °C.
- Performance – Fan performance based on tests conducted in accordance with AMCA 210-85 and ISO 5801.
- Warranty – Equipment to be free from defects in workmanship and material under normal use and service for one year after shipment.

Exhaust System

Technical Specifications for PP/FRP Ducting:

- PP means PPGL: One side smooth & glossy finish and other end is matt finish.
- The smooth surface should be the inner surface of the duct.
- On mat side, FRP lining to be done.
- 25 mm x 25 mm Stitch welding is done on inner surface and continuous welding on outer surface with 5 mm welding thickness.
- FRP Lining to be done on the outer surface of PPGL i.e., on mat side.

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- One-layer FRP is one mm.
- The final layer should be with fine mat to have smooth and good finish.
- While making the lining, there should not be any air pockets or any sort of uneven finish.

(III) Ducting

(i). Rigid Ducting of PP (Polypropylene) + FRP (Fiber Reinforced Polyester) and flexible ducting with flanges, bends, damper transitions, clamps etc. Flexible joint is provided in the ducting in order to avoid transmitting the blower vibrations to the hood. A weather proof rain cowl is provided at the outlet of blower. All PP FRP to be 3+2 mm thick.

In addition, the following points should be also taken into account while fabrication of ducts.

1) All ducts of size larger than 450mm shall be cross broken.

2) All ducts shall be supported from the ceiling / slab by means of MS rods of dia 8mm with MS angle of size 40 x 40 x 5 mm at the bottom with neoprene pad in between the duct & MS angle. The ducts shall be suspended from the ceiling with the help of dash fasteners. Provision for necessary ancillary materials required for hanging the ducts shall be arranged by the contractor.

3) The vanes shall be provided wherever required and shall be securely fastened to prevent noise & vibration.

4) The rubber gasket shall be installed between duct flanges in all connections and joints.

5) All flanges and supports should be primer coated.

6) The ducting work can be modified if deemed necessary in consultation with the Engineer in Charge to suit actual site conditions in the building

3.1 Terms and conditions

A. Mechanical, electrical, and associated systems shall be safe, reliable, efficient, durable, easily, and safely operable, maintainable, and accessible.

B. All equipment must be compatible with Indian electrical standards and codes.

C. Standard Products: Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of the products for at least 3 years. Digital electronics devices, software, and systems such as controls, instruments, shall be the current generation of technology and basic design that has a proven satisfactory service record of at least three years.

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D. All items furnished shall be free from defects that would adversely affect the performance, maintainability and appearance of individual components and overall assembly.

E. Vendor must provide a list of satisfied Indian users and their contact details for using offered items.

F. Electrical Components and Devices: UL listed and labeled for intended use.

3.2 Test and Submittals

A. Manufacturer's Literature and Data: Include the following:

1. Illustrations and descriptions of laboratory fume hoods and factory-installed devices for fume hoods.

2. Catalog or model numbers for each item incorporated into the work.

3. Results of testing according to ASHRAE 110.

B. Field Test Reports: Indicate dates and times of tests and certify test results.

C. Factory Test Reports: Provide manufacturer's QC checklist or other reports that indicate comprehensive factory testing has been performed, and the results of these tests have been certified.

3.3 TESTING EQUIPMENT

A. Testing equipment must be maintained and calibrated in accordance with manufacturer's specifications and have been calibrated within the past year. Indicate calibration dates and equipment type on test data form.

4 INSTRUCTIONS FOR INSTALLATION

4.1 DELIVERY AND IDENTIFICATION

A. Deliver fume hoods to the jobsite, clearly identified in plain view by specifying fume hood manufacturer, size and type of fume hood, sash type and any special features included.

4.2 INSTALLATION

A. Make all field measurements and verify all dimensions and that required utilities are roughed-in and ready for hook-up prior to installation.

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B. Install fume hood base cabinets plumb and level and parallel to walls and in accordance with manufacturer's instructions.

C. Install monitors in accordance with manufacturer's instructions.

Adjust sash, fixtures, accessories and other moving or operating parts to function smoothly.

Fume hood Installation shall meet seismic support and anchorage requirements. Coordinate the installation of all supplementary framing and backing plates.

D. Repair or remove defective work upon completion of installation. Touch up as required.

E. Remove all packing materials, tags, tape, and shipping materials.

4.3 CLEANING AND PROTECTION

A. Clean all exposed interior and exterior surfaces and protect from damage by work of other trades.

5 - CONTRACTOR FUNCTIONAL PERFORMANCE TESTING (FPT)

A. Pre-test meeting: The Contractor shall coordinate its FPT activities of fume hoods, including test procedures and FPT documentation, with the Client's confirmation testing activities.

1. This meeting shall include a face velocity test of at least one fume hood by third party with a representative of the department present.

B. Contractor face velocity testing shall not start until the following is complete:

1. Pre-test meeting
2. Verification that all specified fume hood components and accessories are provided.
3. Start-up and functional performance testing of all fume hood accessories and utilities is complete and in accordance with manufacturer's specifications
4. Ceiling tiles are in place and laboratory doors are closed (the space is contained).

C. For each fume hood, the Contractor shall perform and document the following FPT requirements:

1. Face velocity

a) For conventional flow fume hoods, the target air velocity with the sash height at 18 inches is 100 feet per minute (fpm) +/- 10%.

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b) Face velocity shall be tested using a VelGrid probe by Shortridge instruments, or an anemometer.

2. Sound level

a) Sound level must be at or below 50 dB measured with the sash height at 18" and the sound level meter located 3 feet from the sash and 5 feet above the floor.

b) Sound level shall be tested using a Type 2 sound level meter manufactured to meet the American National Standards Institute (ANSI) S1.4 "Standard for Sound Level Meters" capable of measuring decibels in dBA.

3. Monitor functionality

a) The fume hood monitor is verified to be functioning and properly calibrated.

b) Verify that the face velocity is displayed.

c) Raise the sash to reduce the face velocity. Confirm that both the visible and audible alarm signal's function when the velocity drops below 80 fpm

d) Test the monitor's mute function and the reset button.

e) This test fails if the monitor does not alarm, is more than 10 fpm out of calibration, or if it fails any functional test or is damaged.

D. Fume Hood FPT Documentation

1. Record all test data on FPT data field forms for each fume hood.

5 FINAL INSPECTION REQUIREMENTS

A. The Contractor shall provide EIC ten (10) working days advance notice to schedule Client's fume hood confirmation testing.

1. Include:

a) Complete fume hood FPT documentation.

b) For each fume hood type, the manufacturer's installation and operation manual.

c) For each monitor type, the manufacturer's manual with calibration instructions.

B. The EIC, will review the Contractor's FPT documentation. If the documentation meets the performance requirements of these specifications, then the EIC will conduct confirmation testing of the fume hood in accordance with the Scientific Equipment and Furniture Association (SEFA) standard 1 for face velocity, sound level and, monitor

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functionality. Also, the under-hood cabinetry shall be tested in accordance with SEFA 8 standards.

C. The EIC will notify the Contractor if any fume hoods fail confirmation testing. Any fume hoods that do not meet the performance requirements shall be repaired and re-tested by the Contractor. The Contractor shall submit new FPT documentation for review and additional confirmation testing until each fume hood passes the Departments confirmation testing.

1. Once the final testing is accepted and complete, the EIC will place appropriate labels on the fume hoods allowing use and this Work shall be substantially complete.

6 LIST OF APPROVED MAKES:

Below mentioned makes to be used unless/otherwise defined in technical Specifications details.

1) STEEL ANGLES:	SAIL, TATA, VIZAG, JINDAL
2) CRCA SHEETS:	SAIL, TATA, VIZAG
3) LABORATORY FITTINGS:	WATER SAVER, BROEN, BROWNALL LABTAP Premier makes are acceptable here.
4) LABORATORY SINKS/DRIP CUPS:	KLLAB, WATER SAVER, BROEN Premier makes are acceptable here.
5) ELECTRICAL SOCKET:	Highly reputed brands such as LEGRAND, NORTHWEST, MK, NORISYS
6) EYEWASH/SHOWER:	WATER SAVER, BROEN Premier makes are acceptable here.
7) HINGES:	Highly reputed brands such as HETTICH, HAFFLE
8) LEGS:	HETTICH, HAFFLE
9) LOCKS:	Highly reputed brands such as HETTICH, HAFFLE
10) DOUBLE EXTENTION BALL SLIDE:	HETTICH, HAFFLE

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11) CABLES & WIRES	GLOSTER/POLYCAB/FINOLEX / RR KABEL
12) VARIABLE FREQUENCY DRIVES	EMERSON / ABB / HITACHI /SIEMENS/ SCHNEIDER
13) CABLE MANAGEMENT SYSTEM	LEGRAND / MK / LK / CENTAUR / RR EUBIQ
14) MODULAR (PLATE TYPE) SWITCHES, SOCKETS,	LEGRAND / SCHNEIDER / SIEMENS /NORTH-WEST
15) MCBS, RCBOS & SUBDISTRIBUTION, BOARDS/ ENCLOUSURES	LEGRAND / SCHNEIDER / NORTH-WEST / SIEMENS / ABB/HAGER
16) LIGHT FITTINGS, LAMPS	PHILIPS/WIPRO/CROMPTON or Equivalent
17) FUME HOOD MONITORS/ CONTROLLER/OPERATION & DISPLAY PANEL	TEL/SCHNEIDER/SIEMENS/HONEYWELL/TSI/SAUTER
18) AIR BLEED CONTROL	TEL/HONEYWELL/SAUTER/SIEMENS
19) CENTRIFUGAL BLOWERS	M K PLASTICS/ ROKADE/ APZEM/ PREMIER OR EQUIVALENT
20) MOTORS	SIEMENS/BHARAT BIJLEE/CROMPTON GREAVES/ ABB OR EQUIVALENT
21) VOLUME CONTROL DAMPERS (ISOLATION DAMPER)	M K PLASTICS/ APZEM/ PREMIER OR EQUIVALENT
22) PP WITH FRP LINING PIPES	AS PER SAMPLE APPROVED.
23) ALL OTHER ITEMS NOT COVERED ABOVE	AS PER SAMPLE APPROVED.

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APPROVED MAKE OF MATERIALS FOR FUMEHOOD

1) FUME HOOD SERVICE FIXTURES:	WATER SAVER, BROEN Premier makes are acceptable here.
2) ELECTRICAL SOCKETS:	Highly reputed brands such as LEGRAND, NORTHWEST, MK, NORISYS
3) FACE VELOCITY AND CONTROLS:	TEL, TROX, PHOENIX
4) CENTRIFUGAL BLOWERS:	SEAT, COLASIT Premier makes are acceptable here.
5) WORK TOP:	**BLACK GRANITE CONST.**
6) INNER LINING:	**BLACK GRANITE CONST.**
7) TOUGHENED GLASS:	SAINT GOBAIN, MODI, ASAHI INDIA, GSC, ATUL

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CHECK LIST OF DOCUMENT REQUIRED

Ser	List of documents required	Yes / No
1.	Certificate by the bidder as per Annexure 3 of the tender document	
2.	Tender Acceptance Letter as per Annexure 4 of the tender document	
3.	EMD Details / MSME Certificate	
4.	Certificate by the bidder as per Annexure 5 of the tender document	
5.	Technical Compliance statement with tender specifications	
6.	Brochure/ Catalogue/ Datasheet	
7.	BoQ	
8.	Statutory Registration Certificates	
9.	Previous purchase orders (if any)	
10.	Tender document duly signed on all pages along with bidders seal.	
11.	Other documents pertaining to technical aspects	
12.	Any other document as provided in technical specifications