



**REGIONAL CENTRE FOR BIOTECHNOLOGY**  
an institution of education, training and research

Established by the Dept. of Biotechnology, Govt. of India  
Under the Auspices of UNESCO  
180 Udyog Vihar Phase 1, Gurgaon - 122016, India

## **TENDER DOCUMENT**

### **Name of work:**

Design, Supply, Fabrication, and  
Installation of Modular Lab Furniture and  
Fume Hoods in New Lab Blocks of  
Regional Center for Biotechnology  
Campus, at NCR Biotech Science Cluster,  
Faridabad

### **CLIENT:**

**EXECUTIVE DIRECTOR, RCB GURGAON**

**COST OF TENDER DOCUMENT: - Rs. 1,500/-**



# REGIONAL CENTRE FOR BIOTECHNOLOGY

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180 Udyog Vihar Phase 1, Gurgaon - 122016, India

Bidding Document No: - RCB/BSC/TENDER/Lab Furniture-2013-14/007

## NOTICE INVITING TENDER (NIT)

For Lab case work and Fume Hood works for the construction of New Laboratory Blocks of Regional Center for Biotechnology at NCR Biotech Science Cluster, village-Bhankri, Faridabad Harayana.

### 1. Name of work:

Design, Supply, Fabrication and Installation of Modular Lab Furniture and Fume Hoods in New Lab Blocks of *Regional Center for Biotechnology Campus, at NCR Biotech Science Cluster, Faridabad.*

Sl.No	Estimated Cost	EMD	Cost of Tender document	Time for Completion	Sale of Tender Documents	Last date for submission of sealed bids	Time & date of opening of tenders
1.	Rs. 450.00 Lakhs	Rs. 9.00 Lakhs	Rs. 1500/-	4 months	27/01/2014 to 21/02/2014 upto 15.00 Hrs.	24/02/2014 upto 15:00 Hrs	24/02/2014 15.30 Hrs.

### 1. Introduction:-

- 1.1. Regional Center for Biotechnology (RCB), under the Deptt. of Biotechnology, Ministry of Science & Technology, Govt. of India is setting up its new campus at NCR Biotech Science Cluster Faridabad with the State-of-art Research & Development facilities.
- 1.2. Regional Center for Biotechnology invites sealed bid for Labs casework and Fume Hood works for furnishing its newly constructed campus at NCR Biotech Science Cluster at village-Bhankri (on Gurgaon- Faridabad highway) Faridabad from experienced & competent OEM with sound technical & financial capabilities fulfilling Bidder's qualification criteria (BQC) as mentioned in the tender document.

### 2. Brief of Scope: Brief scope of work includes but not limited to the following:

- Fabrication, Supply & fixing of lab case work in RCB Block laboratories
- Manufacture, Supply, Installation, testing & commissioning of Fume Hoods & labs benches.

- Utility connections (plumbing, electrical etc) to the Case Work & Fume Hood.
- Gas & process piping connections to Case Work & Fume Hoods (as required).

**3. Time schedule:**

**Four (4) months** from the date of issue of letter/fax of Intent/P.O whichever is earlier.

**4. Salient features of Bidding documents:**

S.No	Salient feature	Details
(a)	Bidding document No.	RCB/BSC/TENDER/Lab Furniture/2013-14/007
(b)	Bidding document on sale	From <u>27/01/2014</u> to <u>21/02/2014</u> .
(c)	Date & time of Pre-Bid meeting.	On <u>07/02/2014</u> at <u>11.30 A.M</u>
(d)	Venue of pre bid meeting	Board Room, Regional Center for Biotechnology, # 180, Udyog Vihar phase-I, Gurgaon-122016.
(e)	Last date of receipt of bidders queries for pre-bid meeting	Bidders may submit their queries if any latest by 07/02/2014 addressed to Sr. Manager (A&F) through email at <a href="mailto:mathew@rcb.res.in">mathew@rcb.res.in</a> / <a href="mailto:shyam_budhwar@rcb.res.in">shyam_budhwar@rcb.res.in</a>
(f)	Last date & time for receipt of Bids	24/02/2014 upto 15.00 Hrs
(g)	Bids to be submitted at	Reception of Regional Centre For Biotechnology
(h)	Opening of Bids (date, time & venue)	24/02/2014, 15:30 PM at Regional Center for Biotechnology Gurgaon in the presence of authorized representatives of attending Bidders.
(i)	Cost of Bidding Document (Non-refunded)	Rs. 1500/- (Rupees One thousand five hundred only) in the form of crossed Demand Draft/ Pay-order/ banker's Cheque, in favour of Executive Director, Regional Center for Biotechnology, payable at Gurgaon.
(j)	Earnest money deposit (EMD)	Rs. 9.00 Lakhs (Rupees Nine Lakhs only) in the form of crossed Demand Draft/ Pay-order/ banker's Cheque/ BG, in favour of Executive Director, Regional Center for biotechnology, payable at Gurgaon.

Tender documents can be obtained up to 15.00 Hrs. on all working days on payment of Rs. 1,500 (Rupees One thousand & Five hundred only) by way of DD (Non refundable) towards the cost of tender drawn on any Scheduled bank in favour of **Executive director, Regional Centre for Biotechnology**. Tenders downloaded from the website must be accompanied with a Demand Draft of Rs. 1,500 (Rupees One thousand & Five hundred only) (Non refundable) drawn in favour of the

*Executive Director, Regional Centre for Biotechnology*, towards the cost of Tender Document. In case the tender cost is not submitted, the tender will not be considered.

The earnest money should be deposited in the form of Demand Draft / B.G also of a Scheduled Bank issued in favour of the *Executive Director, Regional Centre for Biotechnology*, payable at Gurgaon.

**5. Bidders Qualification Criteria (BQC):**

Eligibility criteria with respect to experience & financial requirement are as follows:-

5.1. Estimated cost of work for tender purpose based on detailed estimate is Rs.450 Lakhs.

**5.2. Experience Criteria**

Bidder should have completed in previous seven (7) years ending last day of month previous to the one in which application are invited;

One contract involving similar completed works costing not less than the amount of (Rs. 360 Lakhs)

Or,

Two contracts involving similar completed works costing not less than the amount (Rs. 225 Lakhs)

Or,

Three contracts involving similar completed works costing not less than the amount (Rs. 180 Lakhs)

**Similar works means:** Design, Manufacture, Supply and Installation of Modular Steel Lab Furniture and Fume Hoods (including Testing & Commissioning where ever required) in government national Laboratories/ Institutes/ Universities, engaged in the frontier areas of Scientific Research & Development).

**5.3. Financial Criteria**

Average annual financial turnover during the preceding three financial years should be at least. Rs. 300.0 lakhs, bank solvency minimum Rs. 90 lakhs.

**6. General:**

6.1. Intending Tenderers must enclose copies of documents such as Completion Certificate, valid Registration, Partnership Deed, Bank solvency certificate of Rs. 90 lacs, Sale Tax Clearance Certificate (Works contract cell registration), List of T&P / Machinery etc., along with self attested true copies, with the tenders.

- Experience of only the bidding entity shall be considered for eligibility criteria. In house work experience shall not be considered as valid experience for the purpose of eligibility criteria,
- Joint ventures/ consortium bids/ bids from wholly owned subsidiary relying on parent company's experience shall not be accepted.
- Bids may be submitted by a single person/ entity (called sole bidders).
- Decision of Executive Director in case of any dispute will be binding on all bidders.

**Note: All amendments, time extension, clarifications etc. will be uploaded in the websites only and will not be published in newspapers. Bidders should regularly visit the above websites to keep themselves updated. No extension in the bid due date / time shall be considered on account of delay in receipt of any document by mail.**

**Sr. Manager (A&F)**  
**RCB**

**REGIONAL CENTER FOR BIOTECHNOLOGY, (NEW CAMPUS)  
AT NCR BIOTECH SCIENCE CLUSTER  
VILL- BHANKRI, FARIDABAD**

**Design, Supply, Fabrication and Installation of Modular Lab Furniture and Fume Hoods in New Lab Blocks of Regional Center for Biotechnology Campus, at NCR Biotech Science Cluster, Village-Bhankri, Faridabad, Haryana.**

**2 PART BID**

Sealed tenders are invited from the manufacturers & their authorized dealer only for **Furnishing New campus of** Regional Center for Biotechnology at NCR Biotech Science Cluster Faridabad Village-Bhankri, District Faridabad. The tender document consists of the following two parts.

**Part-1: "TECHNO-COMMERCIAL BID"**

- A. PRE QUALIFICATION CRITERIA – FIRST & SECOND
- B. TERMS & CONDITIONS
- C. TECHNICAL BID

**Part-2: "FINANCIAL BID"** of the tender.

The technical discussion/ (Pre-bid meeting) with the interested bidders **will be held on 07/02/2014** at 11:30 A.M in the Board Room of RCB, Plot No 180, Udyog Vihar Ph-I, Gurgaon- 122016. The interested bidders may visit the proposed site before submitting the tender, if so desired.

The sealed envelope containing "Terms & Conditions", "Techno-commercial Bid" and "Financial Bid" on prescribed tender document purchased from the REGIONAL CENTER FOR BIOTECHNOLOGY, Gurgaon should reach the Sr. Manager(A&F) , REGIONAL CENTER FOR BIOTECHNOLOGY, #180 Udyog Vihar Ph-I, Gurgaon-122016 , Haryana on or before **24/02/2014– up to 15.00 Hr.** otherwise the tender will not be accepted.

The sealed envelope of the bidders containing Part-1 - "First Pre qualification" Second Pre qualification" "Terms & Conditions" and " Techno-commercial Bid" shall be opened on **24/02/2014 at 15.30 Hrs.** One representative of each vendor may participate at the time of opening the bids. **Technical bid of only those parties will be considered for evaluation who qualify in both First & Second Pre qualification criteria.** The Part -2 "Financial Bid" of only those parties who qualify in Part -1 will be opened on a later date. The date of opening will be informed to each qualified party separately.

The Institute can provide following documents.

1. Custom Duty / Excise duty exemption certificate (Haryana).
2. Undertaking Certificate for entering into Haryana state (Supplier has to deposit the entry tax at entry point of Haryana and get the reimbursement from RCB).

The Institute cannot provide following documents.

1. Form C/D for Central Sales tax/ III-D for State Trade Tax.

**Sr. Manager (A&F) RCB**

**NIT (OPEN) DOCUMENT**

**DESIGN, SUPPLY, FABRICATION, INSTALLATION OF MODULAR STEEL LAB FURNITURE  
IN LABORATORY BLOCKS – NEW CAMPUS OF REGIONAL CENTER FOR  
BIOTECHNOLOGY AT NCR BIOTECH SCIENCE CLUSTER- FARIDABAD, VILLAGE-  
BHANKRI, DISTRICT FARIDABAD (HARYANA)**

**FIRST PRE QUALIFICATION CRITERIA**

**FIRST PRE QUALIFICATION CRITERIA:**

<b>Part A - Mandatory:</b>		<b>*Whether complied or not (specify Yes/No)</b>	<b>Yes</b>	<b>No</b>
1.	The bidder should be a manufacturer registered in India or should be 100% subsidiary in India of parent company if any.		Qualified	Not Qualified

<b>Part B - Qualifying criteria and Marking :</b>		<b>Max Marks</b>	<b>Evaluation</b>
2.	<p>Three contracts involving similar completed works costing not less than the amount 40% of the estimated cost (Rs.1.80 Crores)</p> <p>Two similar completed works each costing not less than Rs. 2.25 Crores for educational &amp; research centers under Central / State Government / Central Autonomous Body / Central Public Sector Undertaking/ Educational Institute/University. Last 7 years</p> <p>One similar completed work costing not less than Rs. 3.60 Crores for educational &amp; research centers under Central/State Government/Central Autonomous Body/Central Public Sector Undertaking/Educational Institute/University.</p> <p>Note:- satisfaction completion certificate should be attached as a proof of documentary evidence simply attaching work order will not be sufficient.</p>	20	<p>i) 60 % marks for minimum eligibility criteria.</p> <p>ii) 100% marks for twice the minimum criteria or more in between (i) &amp; (ii) on pro-rata basis</p> <p><u>Note:</u> Valuation based on No. of contracts with respect to minimum eligibility criteria</p>

3	Should have had an annual financial turnover of <b>Rs. 3.00 Crore</b> in respect of fume hood, laboratory furniture during each of the <b>last three years</b> ending 31st March 2013 (Group turnover of any other business other than Fume hood, Exhaust System, Lab work Benches, and Lab Furniture can't be included). Latest audited financial statement to this effect may be submitted.	20	<p>i) 60% marks for minimum eligibility criteria.</p> <p>ii) 100% marks for twice the minimum criteria or more in between (i) &amp; (ii) on pro-rata basis</p> <p><u>Note:</u> Valuation based on turn over with respect to minimum eligibility criteria</p>
4	The bidder or its parent company in India should have a well established (their own) in house manufacturing unit for the steel lab furniture and fume hood, quality management system as per International standards providing the products and services on the continuous basis at least for the <b>last 7 years</b> . The bidder or its parent company in India should possess the current/valid approval for such items manufacturing facility by a statutory certifying authority, like factory inspector etc.	10	<p>i) 60 % marks for minimum eligibility criteria.</p> <p>ii) 100% marks for twice the minimum criteria or more in between (i) &amp; (ii) on pro-rata basis</p> <p><u>Note:</u> Valuation based on year of operations with respect to minimum eligibility criteria</p>
5	The bidder / parent company should be an Official member with SEFA (Scientific Items and Furniture Association) on a continuous basis at least for the past 3 yrs. from the date of this notification.	10	
6	The bidder / parent company should possess the key professional staff, <b>at least one</b> , in his organization with good knowledge of codes and standards like SEFA, OSHA, ASHRAE 110 and NFPA 45. Such professionals should have a valid membership of SEFA and in addition membership of any of the international governing standards.	10	<p>i) 60 % marks for minimum eligibility criteria.</p> <p>ii) 100% marks for twice the minimum criteria or more in between (i) &amp; (ii) on pro-rata basis</p> <p><u>Note:</u> Valuation based on</p>

			No. of key person with respect to minimum eligibility criteria
7	The bidder should have the ability to do ASHRAE testing at site through self or third party. The bidder should submit back-up documents verifying similar tests having been conducted at client site in the past.	10	
8	The range of furniture offered by the bidder should have compliance certificate through third party, for all the parameters of SEFA-8. Detailed documentary evidence for the same must be included in the technical bid.	10	
9	Considering the Size of the Project, the Bidder should have minimum Rs. 90.00 lacs Solvency. The Bidder shall produce the Solvency Certificate for Rs. 90.00 lacs from the Bank, dated within 3 Months from this Notification.	10	<p>i) 60 % marks for minimum eligibility criteria.</p> <p>ii) 100% marks for twice the minimum criteria or more in between (i) &amp; (ii) on pro-rata basis</p> <p><u>Note:</u> Valuation based on solvency with respect to minimum eligibility criteria</p>
<b>Total points</b>		<b>100</b>	

Important: The minimum qualifying points will be 60 for First qualification criteria

**Prequalification / Short listing Criteria:**

- 1) **Compliance is mandatory in case of Part-A of First Pre Qualification;** otherwise it will result in disqualification.
- 2) The parties who will qualify in first pre qualification only will be considered for second pre qualification.
- 3) For support & verification of above criteria necessary self attested document must be attached with each point.

**Signature of Bidder with Stamp & Seal**

## SECOND PRE QUALIFICATION CRITERIA:

The bidder should provide following details for their work experience. The bidder should provide name & address of only those organizations where they have completed the similar works including fume hoods, laboratory furniture & Gas Piping Work, duly supported by satisfactory completion certificate from the client.

The committee designated by Executive Director RCB will inspect these organizations to assess the quality of work, infrastructure & feedback from the users.

The committee will submit its report on the basis of its visit, after due evaluation based on the documents, physical inspection of the site of the parties.

Sl. No.	Name of the Organization with complete address with Ph. No./Fax No. & E-Mail address	Name of the concerned Authority with Post & Communication details.	Value of the work done	Time over run if any
1				
2				
3				

The tenderer may also be required to install mock up sample of lab benches & Fume-hood at new labs of RCB coming up at NCR Biotech Science Cluster, Faridabad village- Bhankri for evaluation by the committee constituted by the Executive Director, RCB at bidders cost & risk, within a period of 10 days from the date of intimation by RCB.

**Signature of Bidder with Stamp & Seal**

**Note: Parties who will qualify in second pre qualification will only be considered for technical evaluation.**

**Evaluation Criterion for II<sup>nd</sup> Evaluation/ based on the sample module installed by the vender at RCB lab at NCR- Biotech Science Cluster, Faridabad**

<b>Sl. No.</b>	<b>Description</b>	<b>Maximum Point</b>	<b>Point Assumed</b>	<b>Remarks</b>
1	Adherence to specifications (YES /NO)	35		
2	Quality of Hardware used (YES /NO)	30		
3	Ease of compatibility (YES /NO)	15		
4	Use of low amusing / eco friendly model (YES /NO)	5		
5	Flexibility in Modular design (YES /NO)	5		
6	Compatibility with existing utility points (YES /NO)	5		
7	Adherence to delivery schedule (YES /NO)	5		

Total Point = 100

The minimum qualifying points are 60. The financial Bids of only those bidders will be opened who qualify in the II<sup>nd</sup> Evaluation criteria.

**ii) Financial Bid (30% weightage):-** the lowest bidder (overs L1 in BOQ) will get full marks other pro-rata.

### **Selection Criteria**

The Ist evaluation criteria will carry 20 % weightage.

The IInd evaluation criteria will carry 50% weightage & financial bid will carry 30% weightage. The bidder who gets highest point as total Technical & Financial evaluation points will be awarded order

## GENERAL CONDITIONS

1. Sealed tenders on item rate basis are hereby invited from pre-qualified contractors for the work of:

**Name of work:**            **Design, Supply, Fabrication and Installation of Modular Steel Furniture in New Laboratory Blocks at Regional Centre for Biotechnology, NCR Biotech Science Cluster, Faridabad.**

The tender document consists of Tender form, Notice inviting tender, Instructions to bidders, General Information, Schedule of quantity, General Conditions of contract Agreement, List of tests and technical specification, etc., which can be procured at a cost of Rs. 1,500 (Rupees One thousand & five hundred only) from the office of, RCB, 180, Udyog Vihar Phase-I, Gurgaon or downloaded from website of RCB [www.rcb.res.in](http://www.rcb.res.in) / [www.rcb.res.ac](http://www.rcb.res.ac). Purchase of tender document is obligatory on the part of the tenderers & bid in no other form will be accepted.

2. The tender document shall be placed in a sealed cover as mentioned in the Procedure of Submission of tender and addressed to the Executive Director, RCB, 180, Udyog Vihar Phase-I, Gurgaon-122016. The tender shall be received by RCB, Gurgaon, on or before 15.00 hrs. on 24/02/2014 and the technical bid shall be opened on the same day at 15.00 hrs. in the presence of tenderers or their authorized representatives, who may like to be present. Any envelope received after the said date and time shall not be entertained under any circumstances and no consideration what so-ever shall be given to anything that might be contained in any such envelope.
3. The bids will be accepted in respect of those contractors having successfully completed three similar works of Rs. 180 Lakhs, two similar works each of value not less than Rs. 240 Lakhs & Single work of value not less than Rs. 320 Lakhs and having annual financial turnover of Rs. 3.00 crores each in last 3 years ending 31-03-2013.
4. The bidder shall possess a valid membership of Scientific Equipment and Furniture Association (SEFA) and membership of any of the international governing standards.
5. The time allowed for the completion of work is **FOUR months** to be reckoned from the 10th day after the date of written order to commencement of the work.
6. Every tender shall be accompanied by earnest money for Rs. 9.00 lakhs (Rupees Nine Lakhs Only) in the form of demand draft, BG from Indian scheduled bank drawn in favour of the **Executive Director, Regional Centre for Biotechnology payable at Gurgaon**. Any tender not accompanied by such earnest money will be rejected forthwith.
7. The contractor shall ensure submission of his tender after examining the tender document, scope of work, specifications, clauses, additional terms of contract agreement special terms & conditions, bill/schedule of quantity, instructions to bidders, general information, etc.
8. The offer shall remain valid for 360 days from the date of opening of tender. The scope & value of tender can be increased or decreased and any item can be added, deleted, withdrawn or substituted as per the requirements of RCB.

9. If a tenderer whose tender is accepted, fails to undertake the work as per terms of the contract within 30 days to be reckoned from the date of issue of allotment letter, RCB is free to cancel the award of tender and forfeited the earnest Money deposited.
10. RCB does not bind itself to accept any tender and reserves the right to reject any or all tenders without assigning any reason.
11. RCB will not pay any expense, whatsoever incurred by tenderer for the preparation and submission of tenders.
12. This notice inviting tender, will form part of the contract agreement to be executed by the successful tenderer with the RCB

The successful tenderer shall have to sign the contract agreement within 15 days of the allotment of work.

**The tenderers, whose technical bids are accepted, are required to make general presentation to the Institute, regarding their profile and work plan to execute the job.**

All the correspondence on the tender shall be addressed to the Executive Director, RCB, # 180, Udyog Vihar Phase-I Gurgaon-122016 and any communication addressed to anyone else shall not in any manner be binding upon the RCB, Gurgaon.

Sr. Manager (A&F)  
RCB

## INSTRUCTIONS TO BIDDERS

**1. GENERAL INSTRUCTIONS:**

The works referred here-in shall cover the entire scope of the proposal which includes supplying and installation of material including successful completion and tests which RCB desires to get carried out. The "Owner" where appearing in these documents shall mean Executive Director, RCB.

**2. PROCEDURE FOR SUBMISSION OF TENDERS:**

The following procedure shall be adopted for submission and opening of tenders. The sealed envelope

SUPERSCRIBED Tender for: **Name of work: Design, Supply, Fabrication and Installation of Modular Lab Furniture and Fume Hoods in New Lab Blocks of Regional Center for Biotechnology Campus, at NCR Biotech Science Cluster, Village-Bhankri, Faridabad (Haryana).**

**PART-I**

**ENVELOPE NO: - 1**

This envelope shall contain only the **earnest money deposit, cost of tender** (if downloaded from website) **& technical bid** and will be opened first.

**ENVELOPE NO: - 2**

Techno-Commercial/ Un-priced Bid.

**PART-II**

**ENVELOPE NO: - 2**

This sealed envelope shall contain the financial bid of the contractor as per bill of quantities. **This envelope shall be opened only after the EMD contained in envelope No.1 & technical bid is found in order as per the requirements of RCB. The date of opening of price bid shall be intimated later on.**

The sealed cover containing envelope 1 & 2 shall be opened on the prescribed date and time in the presence of tenderers or their authorized representatives who may wish to be present.

**3. TENDERERS TO STUDY ENTIRE TENDER DOCUMENT CAREFULLY:**

Submission of a tender by a tenderer implies that he has read all the stipulations contained in this tender document and has acquainted himself of the nature, scope and specifications of the works to be followed.

**4. TENDERER TO SUBMIT THE ENTIRE TENDER DOCUMENT:**

The tenderer shall submit all documents issued to him for the purpose of this tender after duly filling the same in all respects. Tenders which are found to be vague or incomplete shall be rejected summarily.

**5. TENDER SHALL BE WRITTEN IN ENGLISH LANGUAGE:**

Every tender shall be written in English language. All information such as documents and drawings supplied by the tenderer will also be in the English language only. Drawings and designs shall be dimensioned according to the metric system of measurements. **Tenders shall be forwarded under cover or a letter type written on the tenderer's letter-head and duly signed by the tenderer.** Signatures must be in long hand, executed in ink by a duly authorized principal of the tendering firm. No oral, telegraphic or telephonic tenders or subsequent modifications there-to shall be entertained; If a tender is submitted on behalf of the firm, then all the partners shall sign or may be signed by one in whose favour all the partners have given General Power of Attorney. In case of tender submitted by a company, it shall be signed by one who has been authorized by the Board of Directors through a resolution. Copy of resolution and the authority letter in favour of the person signing must accompany the tender.

**6. TENDERERS TO QUOTE FOR ALL ITEMS AND IN FIGURES & WORDS:**

The tenderer shall quote his rates in words and figures with reference to each item and must enter for all the items shown in the attached Bill of quantities. Incomplete offer shall be liable for rejection. In case there is a discrepancy in "words" and "figures", the rate in words will be taken as correct for evaluation of tender. The total amount shall be written both in figures and in words.

**7. VALIDITY PERIOD OF OFFERS:**

The rates quoted in the tender shall hold good for 360 days from the date of opening of the tender. The validity period shall be extendable with the mutual consent of both the parties. No tenderer can withdraw/or modify his tender or revoke the same within the said period of 360 days. If a tenderer on his own withdraws or revokes the tender or revises or alters or modifies the tender for any item or condition within a period of aforesaid 360 days his earnest money deposit shall stand forfeited.

**8. TENDERER TO SIGN ALL PAGES:**

The tenderer shall stamp and sign at the bottom right hand corner of every page of the tender documents in token of acceptance of tender conditions and for the purpose of identification.

**9. ERASURES AND ALTERATIONS:**

Tenders containing erasures and alterations of the tender documents are liable to be rejected unless these are authenticated by the person signing the tender documents.

**10. TENDERER TO SATISFY HIMSELF OF SITE CONDITIONS:**

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tender regarding nature of the site conditions, the means of access of the site, the accommodation they may require and in general obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender in any manner. A tenderer shall be deemed to have full knowledge of the site, whether he inspects it or not and no compensation or otherwise of any charges incurred or to be incurred consequent on any misunderstanding or otherwise shall be admissible.

**11. EARNEST MONEY:**

The tender shall be accompanied by earnest money of **Rs. 9.00 lakhs (Rupees Nine Lakhs Only)** in the form of Demand Draft / BG from any Indian Scheduled Bank only, drawn in favour of the *Executive Director, Regional Centre for Biotechnology payable at Gurgaon*. Earnest money of the unsuccessful bidder(s) shall be refunded after expiry of the validity period of the tenders/award of works whichever is earlier. In case of successful tenderer the earnest money shall be adjusted against performance security.

**12. TENDER LIABLE FOR REJECTION:**

Tenders which do not fulfill all or any of the conditions laid down in this notice, or contain conditions not covered and / or not contemplated by the Conditions of contract and/or expressly prohibited therein or stipulate additional/alternative conditions shall be liable to be rejected.

**13. Tenders shall also be liable for rejection on any of the following grounds:-**

- i) Tenders submitted late
- ii) Tenders containing remarks uncalled for.
- iii) Conditional tenders
- iv) Tenders not submitted on prescribed Performa.
- v) Telegraphic tenders.
- vi) Tender submitted without E.M.D. / Cost of tender document

**14. CORRESPONDENCE:**

Tenderers must mention their postal address and telephone number(s) of the Chief Executive/authorized agent or attorney in the tender. The tender submitted by the tenderer will

be rejected if he or his agent cannot be contacted on the last known address or on the intimated telephone number(s) after reasonable search in which event earnest money may be forfeited by the RCB.

**15. RCB NOT TO ASSIGN ANY REASON FOR REJECTION OF TENDER:**

RCB hold absolute discretion to accept or reject the lowest or any other tender without assigning any reason. No claim on this account shall be entertained.

**16. AMENDMENT IN TENDER DOCUMENTS:**

RCB reserves the right to revise or amend the Bid Documents upto the date prior to the date notified for opening of the tenders and also the right to postpone the date of submission and opening of tenders without assigning any reason, whatsoever.

**17. REFERENCE IN TENDER DOCUMENTS:**

Executive Director, RCB, shall be referred as "Owner" in all the documents of Tender documents/contract agreement.

**18. Sr. MANAGER**

Where ever the word "Sr. Manager" occurs it shall mean the authorized Officer appointed by Executive Director (RCB) for the superintendence of the execution of works.

**Sr. Manager (A&F)**

**RCB**

## GENERAL INFORMATION

- |   |  |   |
|---|--|---|
| 1 | Accepting Authority                            | Executive Director,<br>Regional Center for Biotechnology, Gurgaon   |
| 2 | Earnest money                                  | Rs. 9.00 lakhs (Rupees Nine lakhs only) to be furnished with the tender in the form of the demand draft / BG drawn on Indian scheduled bank.  |
| 3 | Security deposit                               | The security deposit will be collected by deductions from the running bills of the contractors at the rate mentioned below and the earnest money, deposited at the time of tender, will be treated as part of security deposit. Performance security may be accepted as Bank Guarantee of Indian Scheduled Banks and State Bank of India. A sum @ 5% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum along with the sum already deposited as earnest money, will reach to the extent of 10% of the tendered value of the work as security deposit. In addition, the contractor shall be required to deposit an amount equal to 5% of the tendered value of the contract as Performance Security within the period prescribed for commencement of work in the letter of award issued to him. |
| 4 | Authority competent to grant extension of time | Executive Director RCB or authorized person by<br>Executive Director, RCB   |
| 5 | Tools & plants                                 | To be arranged by contractor  |
| 6 | Defect Liability Period                        | Twelve months from the date of acceptance of completion by the RCB.   |
| 7 | Warranty certificate                           | All items supplied/Installed shall have a warranty of 5 yrs. From the date of takeover by Institute for any manufacturing/workmanship defects   |
| 8 | Release of Security Deposit                    | The performance security shall be refunded to the contractor on completion of the Defect Liability Period.  |
| 9 | Authority Competent to Appoint Arbitrator      | Executive Director, RCB.  |

Sr. Manager (A&F)

RCB

MEMORANDUM

- a) Name of work Design, Supply, Fabrication and Installation of Modular Lab Furniture and Fume Hoods in New Lab Blocks of Regional Center for Biotechnology Campus, at NCR Biotech Science Cluster, Village-Bhankri, Faridabad, Haryana.
- b) Estimated cost Rs.450.00 lakhs (Approx.)
- c) Earnest money Rs. 9.00 lakhs (Rupees Nine lakhs only) in the form of Demand Draft / BG in favour of "Executive Director, Regional Centre for Biotechnology" payable Gurgaon. (No interest is payable on earnest money).
- d) Time allowed for the completion of work(to be reckoned from 10th day after the date of issue of written order to commence work) 4 Months.

**Place**

**(Seal & Signature of Contractor)**

**Date:**



## GENERAL CONDITIONS OF CONTRACT AGREEMENT

### **1. SECURITY DEPOSIT**

The person/persons whose tender may be accepted (herein after called the contractor) shall permit Sr. Manager (A&F), RCB at the time of making any payment to him for works done under the contract to deduct such sum as will amount to 10 % of all moneys so payable to be held by the RCB, by way of security deposit. Earnest money shall also be adjustable towards this security deposit. All compensation or other sums of money payable by the contractor to RCB under terms of this contract may be deducted from his security deposit or from any account what so ever, and in the event of his security deposit being reduced by reason of any such deduction, the contractor shall within 10 days thereafter make good in cash any sum or sums which may have been deducted from his security deposit or any part thereof.

### **2. COMPENSATION CLAUSE**

- 2.1 The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor, and shall be reckoned from the 10th day of the date on which the order to commence the work is given to the contractor. The contractor within ten days of award of work, shall prepare and submit a schedule for work execution in the form of a bar chart/CPM network and submit the same for approval of the Sr. Manager (A&F), RCB. The work on the contract shall be executed according to the approved schedule as aforesaid and shall throughout the stipulated period of the contract be proceeded with all due diligence (time being deemed to be the essence of the contract on the part of the contractor)/ and the contractor shall pay as compensation an amount equal to **0.50 percent** or such smaller amount, as Sr. Manager (A&F), RCB may decide on the value of work as per contract, for every week that the work remains uncompleted or unfinished after the dates mutually agreed upon by the parties. Further to ensure good progress during the execution of the work, the contractor shall be bound in all cases in which the time allowed for any work exceeds one month to complete one fourth of the whole of the work before one fourth of the whole time allowed under the contract has elapsed, one half of work before one half of such time has elapsed and three fourth of the work before three fourth of such time has elapsed. In the event of the contractor failing to comply with this condition he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the Sr. Manager (A&F), RCB, may decide of the value of balance work for everyday that the due quantity of work remains incomplete. Provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed ten percent of the awarded cost of work as shown in the tender. The Executive Director, RCB, on a representation from the Contractor, is however; empowered to reduce the amount of compensation and his decision in writing shall be final.
- 2.2 In any case under which any clause or clause of this contract the contractor shall have rendered himself liable to pay compensation Sr. Manager (A&F), RCB on behalf of the RCB, shall have power to adopt any of the following courses as he may deem best suited in the interest of the RCB.
- a) To rescind the contract (of which rescission notice in writing to the contractor under the hand of Sr. Manager (A&F), RCB shall be conclusive evidence), and in which case the security deposit of the contractor shall stand forfeited, and be absolutely at the disposal of Sr. Manager (A&F), RCB.
  - b) To employ labour to be paid by Sr. Manager (A&F), RCB and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of

the materials (of the amount of which cost and price a certificate of Sr. Manager (A&F), RCB shall be final and conclusive against the contractor) and crediting him with the value of the work done, in all respect in the manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of Sr. Manager (A&F), RCB as to the value of the work done shall be final and conclusive against the contractor.

- c) To measure up the work of the contractor, and to take such part thereof as shall be unexecuted out of his hands and to give to another contractor to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of Sr. Manager (A&F), RCB shall be final and conclusive shall be borne and paid by the original contractor and may be deducted from any money due to him by the Sr. Manager (A&F), under this contract or otherwise from his security deposit or sale proceeds of the materials and tools and plants of the contractor lying at site.

In the event of any of the above courses being adopted by the Sr. Manager (A&F), RCB, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any material entered in to any agreement or made any advance on account thereof or with a view to the execution of the work of the performance of the contract and in case the contract is rescinded under the aforesaid provisions, 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 Sr. Manager (A&F), RCB has certified in writing the performance of such work and the value payable in respect thereof, and the contractor shall only be entitled to be paid for the value so certified.

- 2.3 In any case in which any of the powers conferred upon the Sr. Manager (A&F), RCB by clause 3 thereof shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions thereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor for which by any clause or clauses thereof he is declared liable to pay compensation amounting to the whole of his security deposit and the liability of the contractor for past and future compensation shall remain unaffected. In the event of Sr. Manager (A&F), RCB putting force either of the powers (a) or (c) vested to him under the preceding clause he may, if he so desire, take possession of all or any tools, plants, materials and stores in or upon the works, or the site thereof or belonging to the contractor or procured by him and intended to be used for the execution of the work any part thereof, paying or allowing for the same in account at the contract rates, or in case of these not being applicable at current market rates to be certified by the Sr. Manager (A&F), RCB whose certificate hereof shall be final, otherwise Sr. Manager (A&F), RCB by notice in writing to the contractor or his authorized agent require him to remove such tools, plants, materials or stores from the premises within a time to be specified in such notice: and in the event of the contractor failing to comply with any such requisition, the Sr. Manager (A&F), RCB or his authorized representative may remove them at the contractor's expenses to sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificate of Sr. Manager (A&F), RCB as to the expense or any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

- 2.4 All sums payable by way of the compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of Executive Director, RCB without

reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

**3. TIME EXTENSION**

- 3.1 If the contractor desires an extension of the time limit for completion of the work on the grounds of his having been unavoidably hindered in its execution or on any other ground he shall apply in writing to the Sr. Manager (A&F), RCB within 30 days of the date of the hindrance on account of which he desires such extensions as aforesaid but before the expiry of time limit and the Executive Director, RCB if in his opinion (which shall be the final) reasonable grounds as shown thereof, authorized such extension of time if any, as may, in his opinion be necessary or proper.

**4. COMPLETION OF WORK**

- 4.1 Without prejudice to the rights of Sr. Manager (A&F) under any clause hereinafter contained on completion of the work, the contractor shall be furnished with a certificate by the Sr. Manager (A&F) or his representative of such completion, but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work has been executed, all scaffolding .surplus materials and rubbish, and cleaning off the dirt from all doors, walls, floors, or any other parts of buildings said to have been completed, and the measurements in the said certificate shall be binding and conclusive against the contractor, if the contractor shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials, and rubbish and cleaning off dirt on or before the date fixed for the completion of the work, Sr. Manager (A&F), RCB may at the expense of the contractor have removed such scaffolding .surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the contractor shall forth with pay the amount of all expenses so incurred, and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any such sale proceeds actually realized by the sale thereof.

**5. ADDITIONS/ALTERATIONS/ DEVIATIONS**

- 5.1 The Sr. Manager (A&F), RCB shall have power to make any alterations or omissions or additions or substitutions in the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and the contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing signed by the Sr. Manager (A&F) and such alterations, additions or substitutions shall not invalidate the contract and any altered, additional or substituted work which the contractor may be directed to carry out in the manner above specified as part of the work shall be carried out by the contractor on same conditions in all respects on which he agreed to do the main work. The time for the completion of the work shall be extended in the proportion that the altered additional or substituted work has to the main work at the sole discretion of the Sr. Manager (A&F), RCB and his decision in this regard shall be final and binding on the contractor.

All tenderers are required to quote as per specifications stipulated hereunder. Rates for all items shall be quoted as specified hereunder. After the award of the contract, the work shall be carried out as per approved drawings and samples. For dimensional changes  $\pm 5$  mm, should they occur during approval stage, there shall not be any rate difference. If the dimensional changes are more than the above limit, modified rates shall be worked out derived from the quoted contract rates. Rates for extra/substituted items, should they became necessary during the execution of the work shall be settled on analysis of rate to be submitted by the contractor for such items.

Quantities in the B.O.Q. or estimated quantities which can vary up to  $\pm 50\%$  during the execution of the work. Payment shall be made as per actual quantum executed without any change in the contracted rate due to variation in quantity, if any.

6. **ARBITRATION**

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, designs, 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 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 completion or abandonment thereof shall be referred to the sole arbitration of the person selected from out of a panel of names to be supplied upon a request in writing by party invoking the arbitration by the Executive Director, RCB, at the time of the dispute. It will be no objection to any such appointment that the arbitrator so appointed was associated with the work and that he had to deal with the matters to which the contract relates and that in the course of his duties in association with the Sr. Manager (A&F), RCB, he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally referred being unable to act for any reason, the Executive Director shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. It is also a term of this contract that no person other than a person appointed by the Executive Director as aforesaid shall act as arbitrator. In all cases where the amount of the claim in dispute is Rs. 50,000/- (Rupees Fifty thousand only) or above, the arbitrator shall give reasons for the award. Subject as aforesaid the provisions of Arbitration and Cancellation Act 1996 or any statutory modifications or reenactment thereof and the rules framed there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of the contract that while invoking arbitration the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

It is also a term of the contract that if a party does not make any demand for arbitration in respect of any claim(s) in writing within 90 days of receiving the intimation from the Sr. Manager (A&F), RCB that the bill is ready for payment, the claim if any, shall be deemed to have been waived and absolutely barred and the owner shall be discharged and released of all liabilities under the contract in respect of these claims.

The Arbitrator should be of the rank of retired / working Chief Engineer (CPWD) or (B & R) Delhi or equivalent post. The contractor will be entitled to file only those claims for arbitration which had already been raised before the Executive Director (RCB) and rejected by him time to time during the execution of work.

7. **CARRYING OUT OF WORK**

All the work shall be carried out in accordance strictly as per the specifications given in the tender to the total satisfaction of the RCB. In the case of an item for which specification are not available in the said specifications relevant BIS specifications/attached/SEFA specification applicable as on the date of tenders shall be followed.

**8. QUALITY CONTROL OF MATERIAL**

If it shall appear to the, Executive Director or the Sr. Manager (A&F), RCB 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 are unsound, or of a quality inferior to that contracted for or otherwise not in accordance with contract, the contractor shall on demand in writing from the Sr. Manager (A&F), RCB specifying the work materials or articles complained of notwithstanding that the same may have been inadvertently passed, certified and paid for forthwith rectify, or remove & reconstruct the work so specified in whole or in part ,as the case may require, or as the case may remove the materials or articles so specified and provide other proper and suitable material or articles at his own charge and cost and in the event of his failing to do so within a period to be specified by Sr. Manager (A&F), RCB, in his demand as aforesaid then the contractor shall be liable to pay compensation at the rate of 1% on the contract agreement of work for every week delay Sr. Manager (A&F), RCB may rectify or remove, and re-execute the work or replace with other materials or articles complained of as the case may be at the risk and expense in all respects of the contractor.

**9. INSPECTION OF WORK**

9.1 All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of Sr. Manager (A&F), RCB, or representative in-charge of the work and the contractor shall at all times, during the usual working hours and at all other times at which reasonable notice of the intention of the Sr. Manager (A&F), RCB to visit the works shall have been given to the contractor .either himself be present to receive order 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.

9.2 The contractor shall give not less than 5 days notice in writing to Sr. Manager (A&F), RCB, of the work before covering up or otherwise placing beyond the reach of measurement of any work in order that the same may be measured and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement and any work without the consent in writing of Sr. Manager (A&F), RCB, or placed beyond the reach of measurement without such notice having been given to or consent obtained, the same shall be uncovered at the contractor's expense or in default thereof, no payment or allowance shall be made for such work of the materials with which the same was executed.

9.3 The work during its progress shall from time to time inspected by the Sr. Manager (A&F), RCB or their representative on behalf of Sr. Manager (A&F), RCB, and the contractor shall extend all co-operation to the representative inspecting the work.

**10. CONTRACTOR'S RISKS**

All risks of loss of a or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the contract other than the excepted risks are the responsibility of the contractor.

**11. ADDITIONAL WORK**

The contractor shall make arrangements for and provide at no extra charges all temporary approaches, if required at site, after obtaining prior approval of the Executive Director, RCB of the layout of such approaches.

The contractor shall prepare shop drawings of each discipline & get it approved from the Sr. Manager (A&F), RCB before the commencement of work. The contractor shall submit fabrication drawing in triplicate for obtaining preliminary approval of the Sr. Manager (A&F), RCB for all design drawings of structural steel, electrical, public health, curtain wall, etc. elements already issued to him. One copy of these drawings duly corrected and signed wherever necessary by Sr. Manager (A&F), RCB will be returned to the contractor for preparing and resubmitting drawings after incorporating the said corrections again in triplicate for final approval. Along with the completion and approval of fabrication drawing, the contractor shall also submit the materials, list, for checking and approval to the Sr. Manager (A&F), RCB. No drawing shall be approved finally without material list. Once the drawing is finally approved, no request for an alternative section will be entertained. The contractor shall also submit to Sr. Manager (A&F), RCB 8 prints of all approved drawings. Approval of fabrication drawings however will not absolve the contractor of his responsibility for the safety and correctness of the fabrication.

**12. CONTRACTOR TO BE LIABLE FOR ALL TAXES ETC.**

The rates specified in the tender shall be inclusive of sales taxes or any taxes, toll customs, fees, octroi, royalty, etc. in respect of the contract and the rates shall be firm irrespective of any variation in the prevailing rates of taxes, levies, octroi, etc. and any fresh imposition of any of these by State/Central/Statutory bodies. The contractor shall indemnify the Executive Director (RCB) against levy of any taxes etc., in regard to this contract and in the even of the Executive Director (RCB) being assessed for any of the said imports, Executive Director (RCB) shall have the right to recover the total amount so assessed from the contractor's dues and the contractor shall also be responsible for all costs or expenses that may be incurred by Executive Director (RCB) in connection with any proceedings or limitation in respect of the same.

**13. INSURANCE**

- 1 The following insurance cover is to be provided by the contractor in the joint names of the employer and the contractor for the period from the start date to the end of the Defects liability period:
  - (a) Cover against damage to other people's property caused by the contractor's acts or omission;
  - (b) cover against death or injury caused by the contractor's acts or omission to:
    - i) Anyone authorized to be on the site;
    - ii) Third parties who are not on the site;
  - (c) Cover against damage to the Works and materials during construction.
    - i) Policies and certificates for insurance are to be produced by the contractor to the Sr. Manager (A&F), RCB for approval before the start date given in the contract and subsequently as the Sr. Manager (A&F) RCB may require.
    - ii) If the contractor does not produce any of these policies and certificates required, the employer may effect the insurance for which the contractor should have produced the policies and certificates and recover the premiums it has paid from payments otherwise due to the contractor or, if no payment is due, the payment of the premiums shall be a debt due.
    - iii) Alterations to the terms of an insurance may be made either with the approval of the Sr. Manager (A&F), RCB or as a result of general changes imposed by the insurance company with which the insurance policy is effected.
    - iv) Both parties are to comply with any conditions of the insurance policies.
2. No Escalation shall be paid.

3. Insurance clause: - The insurance shall be upto the end of the completion of the project. Cover against damage to others people property caused by the contractor's acts or omission to the extent of cost of work done.

Sr. Manager (A&F)  
RCB

## **GENERAL SITE RULES. PROCEDURES AND PRECAUTIONS**

### **1 SITE WORKING RULES AND REGULATIONS**

- a) The contractor shall furnish Sr. Manager (A&F), RCB the Power of Attorney name and signature of his authorized representative who will be in-charge of the execution of the works at site. The contractor shall also furnish the list of technically qualified persons employed by him for execution of the works. Daily reports of number of men employed by crafts and weekly reports of progress achieved, expected date of completion of the works and any actual or potential delays stating the reasons thereof shall be furnished by the contractor.
  
- b) Save as otherwise specifically provided in this Agreement the rates and prices herein, unless otherwise stipulated elsewhere in this Agreement, include all the costs, expenses and outlays of the contractor for executing the works and fulfilling all the obligations of the Contractor under this agreement.

**Sr. Manager (A&F)**  
**RCB**

## **SPECIAL TERMS AND CONDITIONS OF CONTRACT**

### **1. SPECIFICATIONS:**

If specifications for an item of work are not covered by the CPWD Specifications/B.I.S. Specifications/attached/SEFA specifications prevailing as on date of tender, the same shall be decided by the RCB and shall be binding on the contractor.

The Executive Director (RCB) shall have the power to insist upon the contractor to purchase and use such materials of particular approved make which may in his opinion be necessary for proper and reasonable compliance with the specifications and execution of work.

In the event of any variation/discrepancy in the drawings, specification and tender documents the decision of the Executive Director, (RCB) shall be final binding and conclusive on the contractor.

- a) As required by Sr. Manager (A&F), RCB, or his representative the contractor shall provide all facilities at site or at manufacturer's works or an approved laboratory for testing of materials and/or workmanship. All the expenditure in respect of this shall be borne by the contractor wherever applicable. The contractor shall, when required to do so by Sr. Manager (A&F), RCB submit manufacturer's certificate that the materials have been tested in accordance with requirements of the specifications.
- b) Neither the omission by Sr. Manager (A&F), RCB to test the materials nor the production of manufacturer's certificate etc., as aforesaid shall affect the right of the Sr. Manager (A&F) to reject after delivery of the materials found not in accordance with the specifications.

### **2. WORK AND WORKMANSHIP:**

To determine the acceptable standard or workmanship, the Sr. Manager (A&F) may order the contractor to execute certain portions of works and services and the like under the close supervision of Sr. Manager (A&F), RCB or his representative. On approval, these items shall be labeled as guiding samples and works executed to conform to these samples.

### **3. TESTING OF MATERIAL**

- a) As required by the Sr. Manager (A&F) or his representative the contractor shall provide all facilities at site or at manufacturer's work or an approved laboratory for testing of materials and / or workmanship. All the expenditure in respect of this shall be borne by the contractor unless specified otherwise in the contract. The contractor shall when required to do so by the Sr. Manager (A&F), submit that the materials have been tested in accordance with requirements of the specifications.
- b) Neither the omission by the Sr. Manager (A&F) or his representative to test the materials nor the production of manufacture(s) certificate etc. as aforesaid shall affect the right of the Sr. Manager (A&F) to reject, after delivery of the materials found not in accordance with the specifications.
- c) The contractor shall prepare shop drawings of each discipline & get it approved from the Institute before the commencement of work. The contractor shall submit fabrication drawing in triplicate for obtaining preliminary approval of the Sr. Manager (A&F) or his representative for all design drawings. One copy of these drawings duly corrected and signed wherever necessary by Sr. Manager (A&F), RCB will be returned to the contractor for preparing and resubmitting drawings after incorporating the said corrections again in triplicate for final approval. Along with the completion and approval of fabrication drawing, the contractor shall also submit the materials list, for checking and approval to the Sr. Manager (A&F). No drawing shall be

approved finally without material list. Once the drawing is finally approved, no request for any alternative section will be entertained. The contractor shall also submit to Sr. Manager (A&F) 5 prints of all approved drawings. The contractor shall also submit 4 copies of design calculations for the designs of joints. All joints shall be designed for full strength of members, unless otherwise specified. Approval of fabrication drawings however will not absolve the contractor of his responsibility for the safety and correctness of the fabrication.

**4. CONTRACTOR TO BE LIABLE FOR ALL TAXES ETC.**

The rates specified in the tender shall be inclusive of sales taxes, service tax, toll, Customs fees, octroi, royalty etc. or any other taxes. However, if any fresh taxes are imposed by State/Central/Statutory bodies during the currency of contract, the same shall be borne by RCB.

**5. FORCE MAJEURE:**

The right of the contractor to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, including not limited to acts of God, or of the public enemy, restraints of a sovereign state, firms, floods, unusually severe weather.

**6. APPROVAL OF SAMPLES**

After qualifying the technical bid, the contractor shall arrange and manufacture relevant samples at his own cost of each item of work within 10 days of communication in this regard by Institute. The price bid of those contractors whose samples will be approved by the committee of the institute shall be opened in the presence of intending tenderer. These samples will be sealed by the Sr. Manager (A&F) in the presence of the contractor, if he so desires and shall remain in the custody of the Sr. Manager (A&F) for reference and comparison till the completion of work.

**7. JURISDICTION:**

Not with standing any other courts having jurisdiction to decide the questions forming subject matter of a suit any and all actions and proceedings arising out of or relative to this contract (including any arbitration in terms thereof) shall lie only in the court of competent Civil jurisdiction in this behalf at Gurgaon., where this contract is to be signed on behalf of Executive Director (RCB) and only the said court shall have jurisdiction to try any such actions and/or proceedings to the exclusion of all other courts.

**8. SCOPE OF WORK:**

The scope of work is as per enclosed preliminary drawings. The contractor should note that during the preparation of detailed working drawings, according to which the contractor has to execute the work covered under this contract, may undergo changes. The scope drawings for the entire work are not enclosed, but only a few indicating the probable nature of fabrication are attached. The scope of work is thus not limited only to the drawings attached. All aspects of design, manufacture, supply, installation including site alignment, testing and commissioning of furniture and also services such as water supply, drainage, electrical wiring and outlets etc., are deemed to be part of the contract.

Scopes also include the following:

1. Submission of shop drawings and sample of each type of furniture after award of contract for RCB approval. Manufacturing shall be strictly as per approved drawings/samples and specifications.
2. In addition to the cost of all labour and materials as per general scope outlined above, all incidental charges such as loading shop, freight and transit charges from work shop to site, transit/storage insurance charges, all duties and taxes like excise duty, sales tax work tax, octroi etc. are deemed to be included in the contract.
3. Deviations, if any, in commercial or technical specifications, offered by the tenderers shall be clearly brought out in the tender failing which it shall be assumed that tender specifications are acceptable to the tenderer in Toto.

Covered lockable storage space at work site. However, the responsibility for security and safe custody of all items covered in this contract shall be the contractor's till the furniture is satisfactorily installed, commissioned and taken over by RCB.

Electric supply and water, if any, required for installation and testing of the furniture/service system shall be arranged by the tenderer and nothing extra will be paid.

**9. CONTRACTOR'S RESPONSIBILITY FOR THE MANNER OF EXECUTION OF WORKS**

The contractor shall be solely responsible for the manner and the method of executing the work. The work shall be subject to the approval of Sr. Manager (A&F) from time to time for purposes of determination of the question whether the work is executed by the contractor in accordance with the contract.

**10. NO WORK SHALL BE UNDERTAKEN WITHOUT APPROVED WORKING DRAWINGS:**

No work shall be undertaken at site by the contractor until detailed approved working drawings marked "Good" for execution/construction is issued by the Sr. Manager (A&F) in writing. Any work done without the aforesaid working drawing shall be at the contractor's own risk and costs.

**11. TIME LIMIT**

The entire work is required to be completed within four months after the date of award of contract.

**12. SUBMISSION OF BILLS:**

Contractor is to submit the bills and record of measurements in triplicate on approved Performa of the Sr. Manager (A&F) or his representative for works executed by him. The Bill shall be submitted once in a month. Part / Partial payment may be considered with respect to supply of material & status of progress.

**13. ADVANCE PAYMENTS:**

Contractor is to submit the bills for partial / part advance payments may be released against the bank Guarantee from Indian scheduled banks may be considered by authority.

**14. TERMS OF PAYMENT**

The entire furniture supplied under this contract shall be guaranteed by the contractor to give Zero defect and trouble free usage for minimum one year after the date of completion of this contract, during this period, any defect in an component of the job deemed by RCB to be on account of bad workmanship or use of sub-standard materials shall be replaced/rectified to the entire satisfaction of RCB by the contractor at his cost. 10% of the contract value shall be retained by RCB during the defect liability period as security deposit for this purpose. The security can be either in the form of deduction from the payment due to the contractor or in form of a bank guarantee in approved Performa satisfactorily attended to within reasonable time by the contractor during performance guarantee period i.e. one year after the date of completion if no defect as above are noticed during the period or if noticed they are attended to satisfactorily by the contractor.

**15. ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK:**

If it shall appear to Sr. Manager (A&F), RCB or his representatives, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to the contracted for, or attached/SEFA specifications the contractor shall on demand in writing from the Sr. Manager (A&F) specifying the work materials, articles complained or not with-standing that the same have been inadvertently 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, remove the materials or articles so specified and provide other and suitable materials or articles so specified at his own cost and in the event of his failing to do so within a period to be specified by the Sr. Manager (A&F) in his demand aforesaid, **then the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate** for every day not exceeding ten percent. While his failure to do so that continue, and in the case of any such failure Sr. Manager (A&F), RCB may rectify or remove, and re-execute the work or remove and replace with other materials or articles complained of, as the case may be at risk and expenses in all respects of the contractor.

1. The works shall be inspected by Sr. Manager (A&F) & his representative. The contractor shall extend full cooperation and render all necessary facilities for inspection of the work to the inspecting authority without any additional cost to Sr. Manager (A&F), RCB. It must be noted that any observations/ comments/ recommendations of the said committee of RCB shall be binding on the contractor.

2. It shall always prevail, unless otherwise specifically stated, that the entire provisions of Tender document been opened upon and accepted for compliance by the contractor without any reservation.

Sr. Manager (A&F)  
RCB

**APPROVED MAKE LIST FOR LABORATORY FURNITURE**

S/N	DESCRIPTION	APPROVED MAKES
1	Chemical cabinet	OEM meeting the specification, of the item as prescribed in the tender.
2	Laboratory Furniture	OEM meeting the specification, of the item as prescribed in the tender.
3	Laboratory Fighting	Water Saver / Broen / CHC / VWR International
4	Laboratory Sink and Drip cups	Water Saver / Broen / Appoyplas / CHC / VWR International
5	Electrical Sockets	Northwest/ Legend /MK / CHC / VWR International
6	Data & Voice Sockets	Northwest/ Legend /MK / BG Electricals / Astra / PIPO
7	Eyewash / Shower	Water Saver / Broen / CHC / VWR International
8	Blower	Colasit / Europ-Plast / Technowind / Showa-Denki / Hemco
9	FM Approved safety Cabinets for Flammable liquids and acids	Justrite/Kewaunee/Eagle
10	Fume Hood Service Fixture	Water Saver / Broen
11	Fume Hood Electrical Sockets	Northwest/ Legend /MK

**APPROVED MAKE LIST FOR EXHAUST SYSTEM**

S/N	DESCRIPTION	APPROVED MAKES
1	PP sheets for exhaust ducting	Mandhani/ Dugar/ Khanna
2	Isothelic Resin	Mechemco/ Kaysynth/ Orsyn
3	PP molded Exhaust Blower	Colasit/ Europlast
4	VFD	Invetek/Siemens/ABB/ Danfoss/ Delta
5	Hume hood face velocity monitor	Tel/ Phoenix
6	Room pressure Monitor	Tel/ Phoenix
7	Actuator	Belimo/ Neptronic
8	Motor	ABB/ CG/ Kirloskar

## INSTRUCTIONS TO BIDDERS

## **A GENERAL**

### **1.0 BRIEF SCOPE OF WORK**

The scope of work is given in Technical Part of Bidding Document.

### **2.0 ELIGIBLE BIDDERS:**

2.1 The invitation of bid is open to any bidder in India meeting the BQC.

2.2 Bidder should not be under liquidation, court receivership or similar proceedings.

2.3 The bidder shall not be on Holiday / negative list of RCB as on the due date of submission of bid. If the documents were issued inadvertently / downloaded from website, offers submitted by such bidders shall not be considered for opening / evaluation / award.

2.4 If the agency is placed on holiday / negative list of RCB after opening of un- priced bids but before opening of price bids, further evaluation shall be stopped and the corresponding price bid will not be opened.

### **3.0 COST OF BIDDING**

3.1 The Bidder shall bear all costs associated with the preparation and delivery of its bid, including costs and expenses related to visits to the site and the Owner will in no case be responsible or liable for these costs regardless of the outcome of the bidding process.

### **4.0 ACKNOWLEDGEMENT & CONFIRMATION**

4.1 Within 7 (Seven) days of receipt of Bidding Document, Bidder shall acknowledge the receipt for the tendered work as per proforma "Acknowledgement Letter" enclosed in Bidding Document.

### **5.0 SPLIT-UP OF WORK**

5.1 No Split up of work is envisaged. Total work shall be awarded to one agency only.

### **6.0 SITE VISIT**

6.1 Bidder is advised to visit and examine the site, its surroundings and familiarize himself / herself with the existing facilities and environment, and collect all other information which he may require for preparing and submitting the bid and entering into the Contract. Claims and objections due to ignorance of existing conditions or inadequacy of information will not be considered after submission of the Bid and during implementation.

6.2 Any loss to the property / life of the visitor due to visitor's negligence shall be the visitor's responsibility. Visitor shall keep Owner indemnified from any legal consequences arising there from.

## **7.0 LOCATION OF SITE:**

The location of the proposed site is at NCR Biotech Science Cluster Faridabad, in Village Bhankri, Faridabad Haryana on Gurgaon-Faridabad Highway merely One Kms from Faridabad  
Nearest Railway Station: **Faridabad.**

Nearest Airport: **Indra Gandhi International Airport.**

## **B BIDDING DOCUMENT, CLARIFICATIONS AND AMENDMENT**

### **8.0 BIDDING DOCUMENT**

8.1 The Bidding Document can be downloaded from the designated website(s) of RCB.

The Bidding Document shall consist of the following and should be read in conjunction with any amendment issued subsequently:

- i) Invitation for Bids (IFB).
- ii) Instructions to Bidders and its attachments.
- iii) General Conditions of Contract (GCC).
- iv) Special Conditions of Contract (SCC) and its attachments.
- v) Schedule of Rates (SOR) / Schedule of Prices (SOP).
- vi) Technical Specifications / Standards, Drawings, if any

Bidder shall submit the Master Index of the bidding document duly signed and stamped in token of having received, read and complied to all parts of Bidding Document. The Bidding Document shall be read in conjunction with any Amendment.

8.2 The Bidder is expected to examine the Bidding Document, including all instructions, forms, terms, specifications and drawings in the Bidding Document. Failure to furnish all information required as per the Bidding Document or submission of a bid not substantially responsive to the Bidding Document in every respect may result in the rejection of the Bid.

8.3 Bidding documents once issued are non-transferable in other name and shall at all times remain the exclusive property of the OWNER with a license to the Bidder to use the Bidding Documents for the limited purpose of submitting the bid.

### **9.0 CLARIFICATION OF BIDDING DOCUMENT**

9.1 Although the details presented in this Bidding document consisting of Conditions of Contract, Scope of Work, Technical Specifications and Drawings have been compiled with all reasonable care, it is the Bidder's responsibility to ensure that the information provided is adequate and clearly understood and it includes all documents as per the Index.

- 9.2 Any failure by Bidder to comply with the aforesaid requirement shall not excuse the Bidder, after subsequent award of contract, from performing the work in accordance with the Letter of Acceptance (LOA) / Purchase Order (PO).
- 9.3 Bidders are requested to resolve all their clarifications/queries to the Bidding Document before due date of submission of bid and submit their bid in total compliance to Bidding Document without any deviation /stipulation /clarification /assumption. Accordingly, bidder must submit format for "Compliance to Bid requirement" as per FORM- E to ITB duly filled in along with Un-priced part of Bid.
- 9.4 The responses to Bidder's queries / clarifications raised will be furnished as expeditiously as possible to all who have been issued the Bidding Documents. Any modification

#### **AMENDMENT OF BIDDING DOCUMENT**

#### **10.0 Cost of Tender Document**

As mentioned in the NIT.

#### **11.0 Ammendment of Bidding Document**

- 11.1 RCB may, for any reason whether at his own initiative or in response to the clarification requested by the prospective bidder(s), issue amendment in the form of Addendum during the bidding period or subsequent to receiving the bids. Any Addendum thus issued shall become part of Bidding Document and Bidder shall submit a copy of the Addendum duly signed and stamped in token of his acceptance. Addendum shall be issued to only those bidders, who have been issued the Bidding Document.
- 11.2 In case Addendum is issued during the bidding period, Bidder shall consider its impact in his bid. In case Addendum is issued subsequent to receipt of bids, Bidder shall follow the instructions issued along with Addendum with regard to submission of impact on quoted price / revised price, if any.

#### **12.0 CONFIDENTIALITY OF BIDDING DOCUMENT**

- 12.1 The Bidding Document is and shall remain the exclusive property of the RCB without any right to Bidder to use them for any purpose except for the purpose of Bidding.
- 12.2 On no account will any agency to whom Bidding Documents is issued, part with possession thereof or copy or take copies or tracings of any drawing, plan etc. It should be understood that the information therein is confidential, and that the Bidding Documents are therefore being issued to bidders in the strictest confidence.

#### **13.0 LANGUAGE OF BID**

The Bid prepared by the Bidder, all correspondence and documents relating to the bid exchanged by the Bidder and the RCB shall be written in the English language. Any printed literature/certificate/any other document furnished by the Bidder may be in another language, provided they are accompanied by an accurate translation of the relevant passages in the English language, in which case, for purpose of interpretation of the Bid the English translation shall prevail.

In the event of submission of any document/ certificate by the Bidder in a language other than English, the English translation of the same duly authenticated by Chamber of Commerce of bidder's country shall be submitted by the bidder.

#### **14.0 COMPLIANCE TO BID REQUIREMENT**

##### **14.1 ZERO DEVIATION:**

Bidder to note that this is a ZERO deviation bidding document. Owner will appreciate submission of offer based on the terms and conditions in the enclosed GCC, SCC, ITB, Scope of Work, and Technical Specification etc. to avoid wastage of time and money in seeking clarifications on technical / commercial aspect of the offer.

14.2 Accordingly, Bidder must submit format for "Compliance to Bid requirement" as per Form-E duly filled in along with Un-priced part of Bid.

14.3 Notwithstanding the above, no deviation to the bid conditions in respect of the following shall be entertained and bids shall be liable for rejection.

- (a) Time Schedule
- (b) Schedule of Prices / Schedule of Rates
- (c) Defect Liability Period
- (d) Arbitration
- (e) Scope of Work
- (f) Scope of Supply
- (g) Composite Performance Bank Guarantee (CPBG)
- (h) Suspension of work
- (i) Termination of Contract
- (j) Force Majeure
- (k) Bid Validity
- (l) Pro-forma of all Bank Guarantees
- (m) Liquidated Damages/Price Reduction due to Delay in completion

14.4 Any other condition specifically mentioned in the tender documents elsewhere that non-compliance of the clause lead to rejection of the bid.

14.5 In case Bidder stipulate deviations, Owner have the right to reject such bid at its absolute discretion without giving any opportunity for such Bidder to make good such deficiency.

## 15.0 DOCUMENTS COMPRISING BID

15.1 The Bid should be prepared by the Bidder and shall be submitted in Two Parts with three separate sealed envelopes as per the following details. All the documents submitted by the bidder as part of the bid shall be signed and stamped by the authorized signatory of the bid.

i) PART – I **(Envelope-1):** Earnest Money Deposit (EMD), Cost of Bidding Document.

**(Envelope-2):** Techno-commercial / Un-priced Bid

ii) PART – II **(Envelope-3)** - Price Bid

15.2 PART- I (Envelope-1)– EMD, Cost of Bidding Document

15.3 This Part shall contain EMD, cost of Bidding document as per provision of Clause no. 19.0 of ITB in a separate sealed envelope super scribed with Bidding document no., Bid due date, Bidder's name & address and "EMD , Cost of Bidding Document– Envelope No. 1".

Envelope-2 shall be opened ONLY IF EMD & Cost of Bidding Document is submitted in Envelope-1. **Bidder's offer shall be summarily REJECTED if EMD& cost of Bidding Document is not submitted.**

15.4 PART – I (Envelope-2) -TECHNO-COMMERCIAL/ UNPRICED BID

15.5 This Part shall contain Technical and Un-priced Commercial bid in one original and two copies and shall comprise hard copies of the attachments specifying attachment number arranged in the order as per following in a separate sealed envelope super scribed with Bidding document no., Bid due date, Bidder's name & address and "**Techno-Commercial/ Un-priced Bid – Envelope No. 2**".

- i) Covering letter of Bid on bidder's letter head as per the proforma given in the Bidding document.
- ii) Master Index and copies of all technical and commercial amendments/addendums issued, duly signed and stamped on each page as a token of having received and read all parts of the bidding document and having accepted and considered the same in preparing their bid.
- iii) Power of attorney in favour of signatory (ies) of the bid.
- iv) Details of experience meeting the BQC in the last 7 years by the Bidder as per Form-A to ITB.
- v) Details of Annual Turnover as per Form-C to ITB along with copies of complete audited Annual Financial Year Statements including audited balance sheets, Profit & Loss account statement with all schedules for preceding 3 years.

- vi) Details of present commitments as per FORM-D, which include all work under execution, in hard copy and soft copy (file in Excel format) indicating the percentage progress as on date of sale of bid document
  - vii) Compliance to Bid requirement as per Form-E to ITB.
  - viii) Check List of submission of bid as per Form-F to ITB.
  - ix) Commercial Questionnaire as per Form-G to ITB.
  - x) Bidders queries as per Form-H to ITB.
  - xi) Declaration by Bidder as per Form-I to ITB.
  - xii) Details of P.F. Registration Number as per Form-J to ITB.
  - xiii) Bidders General Information as per Form-K to ITB.
  - xiv) Bank Account Particulars as per Form-L to ITB.
  - xv) Compliance to Deployment of minimum Construction Equipments, Supervisory personnel & Qualification & Experience requirement of Key personnel as per list enclosed with Special Conditions of Contract.
  - xvi) Bidder's declaration that they are not under any liquidation, court receiver ship or similar proceedings
  - xvii) Organization details
    - In case of a proprietorship firm, the name and address of proprietor, and certified copy of 'Certificate of Registration of firm'.
    - In case Bidder is a partnership firm, certified copy of the partnership deed.
    - In case of company (whether private or public), certified copy of the Certificate of Incorporation' together with certified Memorandum/ Articles of Association.
  - xviii) As a token of confirmation that the prices are quoted as per the requisite format, Unpriced copy of Summary of Prices (FORM SP-1) with the quoted price being replaced by the word "Quoted" duly signed and stamped.
  - xix) All the documents submitted for meeting the bidder's qualification criteria shall either be notarised by any Notary Public or shall be duly certified by the statutory Auditor of the bidder in original or a practicing Chartered Accountant, as the case may be, in line with the requirement of IFB. In case of notarisation, Bidder shall submit an affidavit in the format enclosed as Form-B1.
- Bidders submitting documentation against Bidder's Qualification Criteria are required to submit the same in a separate booklet. This Booklet shall be titled as "Documentation against Bidder Qualification Criteria (Technical & Commercial)" with proper index.
- xx) Any other information required in the Bidding Documents or considered relevant by the bidder.

15.6 **PART - II - PRICE BID**

15.7 This Part shall contain the Price Bid in one original plus one copy in separate sealed envelope clearly super scribing Bidding document no., Bid due date, Bidder's name & address and **"Price Bid - Envelope No. 3"** and shall contain the following:

This part of bid shall contain the schedule of Rates duely filled in all respects & other information specifically requested for submission in price part.

In this part of bid, the bidder shall not stipulate any conditions. There shall not be any overwriting or erasure of original writings by use of 'white fluid'. In case any erasure using 'white correcting fluid' is found, such Bid(s) shall be liable to be rejected.

No stipulation, deviation, terms & conditions, presumption, basis etc. shall be stipulated in the bid. Any conditions, if stipulated, shall be treated as null and void and shall render the bid liable for rejection.

**16.0 BID PRICES**

16.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the total works as described in Bidding Document, based on the Schedule of Rates submitted by the Bidder and accepted by the RCB.

16.2 In case any activity though specifically not covered in description of item under Schedule of Rates' (detailed), but is required to complete the work as per Scope of Work, Scope of Supply, Specifications, Standards, Drawings, General Conditions of Contract, Special Condition of Contract or any other part of Bidding Document, the prices quoted shall deemed to be inclusive of cost incurred for such activity.

16.3 The quoted prices shall be inclusive of all applicable Taxes, Duties, Service Tax, WCT/VAT, Cess etc except Labour Cess/Construction worker cess. RCB reserves the right to seek proof of payment of the taxes, duties, cess etc., if required. Owner shall make from Contractor's bills such tax deductions as are required as per rules and regulations in force from time to time.

The Service Tax amount considered by the bidder in their bid shall include the amount of Service Tax payable by the bidder and the amount of Service Tax, if any, directly payable by Owner , as applicable to recipient of service, as per the reverse charge rule of Service Tax. The Service Tax, if any, to be payable by the Owner under reverse charge rule shall be directly submitted to the Service Tax Authorities by Owner and shall be deducted / recovered / adjusted from the payment due to the Contractor.

16.4 Any new taxes/duties/cess/levies notified/imposed after the submission of last/final price bid but before the contractual date of completion of work shall be to RCB's account.

- 16.5 RCB is entitled to customs duty concessions for imports and Excise duty concessions for purchase in India for scientific and technical instruments apparatus, equipments (including computers), accessories, parts and consumables. Therefore, in order to avail the duty concessions the invoice and bill of entries for import of materials should be in the name RCB. RCB shall issue the required certificates in each case of clearance of goods/imports. For details clause 11 of SCC may be referred.
- 16.6 It is for the bidder to assess and ascertain the rates of applicable Taxes & Duties for the tendered work. It is clearly understood that RCB will not have any additional liability towards payment of applicable Taxes & Duties as a result of Bidder's wrong assessment / interpretation of applicable taxes & duties. Bidder must note that RCB shall not issue any concessional form (C - Form) against Sales Tax / CST / VAT.
- 16.7 Prices quoted by the bidder, shall remain firm and fixed and valid until completion of the Contract and will not be subject to variation on any account.
- 16.8 Alternative bids shall not be considered.

#### **17.0 CURRENCIES OF BID & PAYMENT**

The Bidder shall quote in Indian Rupees and shall be paid in Indian Rupees only.

#### **18.0 BID VALIDITY**

- 18.1 Bid submitted by Bidder shall remain valid for a minimum period of **360 days** from the due date of submission of Bids. Bidders shall not be entitled during the said period of **360 days**, without the consent in writing of the RCB, to revoke or cancel their Bid or to vary the Bid given or any term thereof. In case of Bidders revoking or cancelling their Bid or varying any terms in regard thereof without the consent of RCB in writing, RCB shall forfeit EMD paid by them along with their bids.
- 18.2 RCB may solicit the bidders consent to an extension of the period of validity of bid. The request and the responses there to shall be made in writing. If the Bidder agrees to the extension request, the validity of Bank Guarantee towards EMD shall also be suitably extended. Bidders may refuse the request of extension of Bid validity without forfeiting his EMD. However, bidders agreeing to the request for extension of validity of bid will not be permitted to modify the bid.

#### **19.0 EARNEST MONEY DEPOSIT (EMD)**

- 19.1 The Bid must be accompanied by Earnest Money (interest free) for the amount indicated in the form of Crossed Demand Draft/ Bank Guarantee e in favour of "Executive Director , Regional centre for Biotechnology" or a Non-revocable Bank Guarantee in the name of "Executive Director , Regional centre for Biotechnology" from any Scheduled Bank (excluding Co-

Operative Banks) as per pro-forma enclosed in the Bidding Document, and valid upto two months beyond the validity of the bids. EMD shall be submitted in a separate envelope (Envelope-1) marked EARNEST MONEY DEPOSIT ,COST OF BIDDING DOCUMENT, with Part-I of the Bid. Bank guarantee shall be revalidated for extended period as required by Owner / RCB in writing. **Any Bid not accompanied by EMD & Cost of Bidding Document as stated above will be summarily rejected.**

- 19.2 If the Bidder, after submission, revokes his Bid or modifies the terms and conditions thereof during the validity of his Bid except where OWNER / RCB has given opportunity to do so, the earnest money shall be liable to be forfeited. OWNER / RCB may at any time cancel or withdraw the Bidding Process without assigning any reason and in such cases the earnest money submitted by Bidder will be returned to him.
- 19.3 The successful Bidder shall be required to submit Composite **Performance Bank Guarantee** (CPBG) with Owner @ 10% of P.O value inclusive of Security Deposit (shall be accepted in lieu of deduction of retention money) within fifteen days from the date of intimation of acceptance of tender and shall be valid for a period of 3 months beyond the defect liability period. Should the successful Bidder fail to furnish the CPBG within the specified period, the earnest money shall be forfeited without prejudice to his being liable to any further loss or damage incurred in consequence by Owner.
- 19.4 After the award of work to the successful Bidder by Owner, Owner will return the Earnest Money to all unsuccessful Bidders. Earnest Money shall be returned to the successful Bidder after he has furnished the CPBG to Owner.

## **20.0 ARRANGEMENT OF BID**

- 20.1 The Bidder shall prepare EMD , Cost of Bidding Document, one Original and two copies of the Techno-Commercial Bid and One Original plus One copy of Price Bid, clearly marking each one as "EMD, Cost of Bidding Document (PART-I-Envelope-1) ": "ORIGINAL – TECHNO-COMMERCIAL BID (PART-I-Envelope-2)", "ORIGINAL - PRICE BID (PART-II-Envelope-3)", "COPY NO.1& 2 – TECHNO-COMMERCIAL BID (PART-I), COPY NO. 1 PRICE BID (PART-II)", etc. as appropriate. In the event of discrepancy between the original and any copy, the original shall prevail.
- 20.2 The original and all copies of the bid shall be typed or written in indelible ink (in case of copies, Photostats are also acceptable) and shall be signed by person(s) duly authorized to sign on behalf of the bidder. All pages of bid shall be stamped and initialed by person(s) signing the bid.

## **21.0 CHECK LIST FOR SUBMISSION OF BID**

21.1 To assist Bidder in ensuring the completeness of bid, a checklist for submission of various documents/details in un-priced commercial part of bid', as per **FORM-F to ITB** has been enclosed.

21.2 Bidder is required to fill the checklist and submit along with the bid for ready reference.

## **C BID SUBMISSION**

### **22.0 ONE BID PER BIDDER**

22.1 A bidder shall submit only one final bid in the same bidding process. A Bidder who submits or participates in more than one final bid will cause all the proposals in which the bidder has participated to be disqualified.

### **23.0 SEALING AND MARKING OF BID**

23.1 The Bidder shall seal EMD, Cost of Bidding Document, one Original and two copies of the Techno-Commercial Bid and one Original plus one copy of Price Bid, clearly marking each one as " EMD, Cost of Bidding Document (PART-I-Envelope-1) ": "ORIGINAL – TECHNO-COMMERCIAL BID (PART-I-Envelope-2)", "ORIGINAL - PRICE BID (PART-II-Envelope-3)", "COPY NO.1& 2 – TECHNO-COMMERCIAL BID (PART-I), COPY NO. 1 PRICE BID (PART-II)", etc. as appropriate.

23.2 The Bidder shall seal the original and each copy of the bid in an inner and outer envelope, duly marking the envelopes "Original" and "copy".

23.3 The inner and outer envelopes shall be addressed to the RCB at the following address:

**Sr.Manager(A&F)**  
**Regional Centre for Biotechnology**  
**Plot no 180 , Udhyog Vihar Ph-I**  
**Gurgaon-122016, Haryana.**

and bear the name of works "(the project name)", the Bidding Document No.

23.4 In addition to above, the outer envelope shall indicate the name and address of the Bidder to enable the bid to be returned unopened in case it is declared "Late".

23.5 If the outer envelope is not sealed & marked as above, RCB will assume no responsibility for the misplacement or premature opening of the bid.

### **24.0 DEADLINE FOR SUBMISSION OF BIDS**

24.1 Bids must be submitted by the time and date mentioned in the Letter Inviting Bid at the address stated therein.

24.2 OWNER / RCB may, at its discretion, extend the deadline for submission of bids by issuing an Amendment in which case all rights and obligations of the Owner and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

#### **25.0 LATE /UNSOLICITED BIDS**

25.1 Any bid received by the RCB after the deadline for submission of bids will be declared "Late" and rejected and representative of such Bidders shall not be allowed to attend the Bid opening. Unopened bids shall be returned to the Bidder.

25.2 Unsolicited bids or bids submitted at address other than one specifically stipulated in the bid document shall not be considered for opening/evaluation.

25.3 Bids received by way of Fax or Telex or Telegram or email or in open condition shall not be considered.

#### **26.0 MODIFICATION AND WITHDRAWL OF BIDS**

26.1 No modification of bid will be allowed after submission. However bidder may withdraw the bid before the due date of submission making such a request in writing.

26.2 No bid shall be modified after the deadline for submission of bids.

### **D BID OPENING AND EVALUATION**

#### **27.0 OPENING OF TECHNO-COMMERCIAL BIDS**

27.1 The EMD, Cost of bidding Document (Part-I-Envelope-1) and Techno-Commercial part of the Bid (Part-I-Envelope-2) shall be opened in the presence of attending representatives of Bidder. The attending representative(s) of the Bidder may have to produce authorization letter from their competent authority, otherwise they will not be allowed to attend the Bid opening. Number of representative will be restricted to maximum one person. The Bidder's representative who is present shall sign a Bid opening statement evidencing their attendance. Envelope-2 shall be opened ONLY IF EMD & COST OF BIDDING DOCUMENT is submitted in Envelope-1. Non-submission of EMD & COST OF BIDDING DOCUMENT shall summarily lead to REJECTION of offer.

27.2 The Bidder's names, modifications and Bid withdrawals, and the presence or absence of the requisite EMD & Cost of bidding Document, and such other details as the OWNER at its discretion, may consider appropriate, will only be announced, and recorded at the time of opening.

#### **28.0 EVALUATION OF TECHNO-COMMERCIAL BIDS**

- 28.1 Prior to detailed evaluation of bids, the Owner /RCB will determine whether each bid (i) is accompanied by required EMD , Cost of bidding document; (ii) totally comply to the requirement of bidding document.
- 28.2 The Owner / RCB will examine the bids to determine whether they are complete, and whether the bids are generally in order.
- 28.3 Prior to the detailed evaluation, the Owner will determine whether each bid is of acceptable quality, is generally complete and is responsive to the Bidding documents. A substantially responsive Bid is one which conforms to the terms, conditions and specification of the Bidding Documents without material deviation. A material deviation is one which affects in any substantial way the scope, quality or performance of the works, or which limits in any substantial way, inconsistent with the Bidding Documents, the OWNER's rights or the Bidder's obligations as envisaged in the Bidding Documents, and the rectification of which deviation or reservation would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 28.4 The Owner will carry out a detailed evaluation of the bids previously determined to be responsive in order to determine whether the technical aspects are in accordance with the requirements set forth in the Bidding Documents on the basis of details/documents submitted by the bidder in the bid at 1st instance. In order to reach such a determination, the Owner / RCB will examine and compare the technical aspects of the bids on the basis of the information supplied by the bidders, taking into account the following factors:
- (a) Overall completeness and compliance with the Technical Specifications; quality, function and operation of any process control concept included in the bid. The bid that does not meet minimum acceptable standard of completeness/ specifications defined in the bid document, consistency and detail will be rejected as non-responsive.
  - (b) Any other relevant factor, if any that OWNER / RCB deems necessary or prudent to be taken into consideration.
- 28.5 No stipulation, deviation, terms & conditions, presumption, basis etc. shall be stipulated in the bid. Any conditions, if stipulated, shall be treated as null and void and shall render the bid liable for rejection.
- 28.6 OWNER / RCB, if necessary, will obtain clarifications on the Bid by requesting for such information / clarifications from any or all Bidders, either in writing or through personal contact, All responses shall be in writing, and no change in the price or substance of the bid shall be permitted unless specifically sought by OWNER / RCB .
- 28.7 **UNSOLICITED POST TENDER MODIFICATIONS**  
Bidders are advised to quote strictly as per terms and conditions of the bidding document and not to stipulate any deviations/exceptions. Once quoted, the bidder shall not make any

subsequent price changes, whether resulting or arising out of any technical / commercial clarifications sought on any deviations or exceptions mentioned in the bid. Similarly, no revision in quoted price shall be allowed should the deviations stipulated by him are not accepted by Owner and are required to be withdrawn by him in favour of stipulation of the bidding document. Any proposed price changes is likely to render the bid liable for rejection.

In case of unsolicited price increase, such offer(s) of the Bidders shall be rejected. In case of unsolicited price decrease, the Bidder(s)'s offer shall be compared as per originally quoted prices and if the Bidder happens to be the recommended Bidder, the decrease in prices shall be taken into account for ordering.

#### **28.8 COMPLETE SCOPE OF WORK**

The complete scope of work has been defined in the bidding document. Only those bidders who take complete responsibility for the complete scope of work as contained in the bidding document shall be considered as acceptable.

#### **29.0 OPENING OF PRICE BID**

29.1 Priced commercial part of only those bidders shall be opened whose bids is determined to be technically and commercially acceptable to the RCB. Bidders selected for opening of their price bids shall be informed about the date of price bid opening. Bidders may depute their authorized representative to attend the opening. During price bid opening, only total price and rebate, if any, as quoted by the bidders shall be read out.

#### **30.0 ARITHMETIC CORRECTIONS**

The bids will be checked for any arithmetic errors.

#### **31.0 EVALUATION OF PRICE BIDS**

31.1 Based on Item rates quoted by the tenderer total quoted price will be calculated.

31.2 Conditional discount, if offered, shall not be considered for evaluation.

31.3 Any uncalled for lump sum / percentage or adhoc reduction / increase in prices, offered by the Bidders after submission of price Bid, shall not be considered. However, if reduction is from the recommended Bidder, such reduction shall be taken into account for arriving at the contract value. The Percentage increase/decrease quoted shall be applicable for all items of the tender without exception. The offers of vendors quoting separate/different rates and/or separate/different percentages for different items, shall be summarily rejected, without reference to/correspondence with the vendor.

- 31.4 Optional items shall not be considered for the purpose of arriving at the total cost. However, in case the rates quoted by the selected Bidder for optional items are considered high, the same shall be negotiated.
- 31.5 Purchase Preference to Central Public Sector Undertakings shall be allowed as per existing Government Policy. Price Preference shall be given to Small Scale Industry, registered with the NSIC, as per the provisions mentioned in IFB.

### **32.0 CONTACTING THE OWNER**

- 32.1 Bidders are advised not to contact OWNER / RCB on any matter relating to its bid from the time of Bid opening to the time Contract is awarded, unless requested to in writing. Any effort by a Bidder to influence OWNER / RCB in any of the decision in respect of Bid evaluations or Award of Contract will result in the rejection of Bid.

### **33.0 AWARD OF CONTRACT**

#### **33.1 OWNER'S RIGHT TO ACCEPT OR REJECT ANY BID**

The Owner reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or without any obligation to inform the affected Bidder or Bidders of the grounds or the reasons for the Owner's action.

### **34.0 NOTIFICATION OF AWARD**

- 34.1 The Owner will notify the successful Bidder in writing by Fax of Intent/ Acceptance / Letter of Acceptance that their bid has been accepted. The Letter of Acceptance will constitute the formation of a Contract. Contract Commitment Date starts from the date of Letter of Acceptance.
- 34.2 The Purchase Order shall consist of the following:
- i) Original Bidding Document along with its enclosures issued.
  - ii) Amendment/Corrigendum to original Bidding Document issued, if any.
  - iii) Fax/Letter of Intent/ Acceptance.

### **35.0 COMPOSITE PERFORMANCE BANK GUARANTEE (CPBG)**

- 35.1 Within FIFTEEN (15) days from the date of notification of award of works by the Owner, the successful Bidder shall furnish the required CPBG for an amount equal to ten percent of the total Contract Price in the form of a Bank issued by a Nationalized/Scheduled Bank (excluding co-operative banks) in favour of Executive Director, Regional centre for Biotechnology, in accordance with the proforma enclosed with General Conditions of Contract. CPBG shall be valid upto a period of 3 months beyond the expiry of Defect Liability Period.

35.2 Failure of the successful bidder to comply with requirement of clauses 35.1 above shall constitute sufficient grounds for annulment of the award of work and forfeiture of EMD.

**Details of RCB Laboratories Floor-wise Lab Number & Size**

**As per Drawing**

Sl.No.	FLOOR	Lab No	Lab Size (mtr.)	Sq. Mtr	Remarks
1.	L.G.FLOOR	Lab 101	26.210 x 7.50	196.58	
2.		Lab 102	22.370 x 7.50	167.78	
3.	U.G.FLOOR	Lab 201	25.950 x 7.50	194.63	Cold Room-1 Discussion Room-1 Scientist Chamber-2
4.		Lab 202	22.910 x 7.50	171.83	
5.		Lab 203	29.725 x 7.50	222.94	
6.		Lab 204	22.400 x 7.50	168.00	
7.	FIRST FLOOR	Lab 301	25.970 x 7.50	194.78	Cold Room-1 Discussion Room-1 Scientist Chamber-2
8.		Lab 302	22.370 x 8.10	181.20	
9.		Lab 303	26.200 x 9.30	243.66	
10.		Lab 304	22.370 x 8.10	181.20	
11.		Lab 305	26.200 x 9.39	246.02	
12.	SECOND FLOOR	Lab 401	25.970 x 7.50	194.78	Cold Room-1 Discussion Room-1 Scientist Chamber-2
13.		Lab 402	22.370 x 8.10	181.20	
14.		Lab 403	29.695 x 9.39	278.84	
15.		Lab 404	22.370 x 8.10	181.20	
16.		Lab 405	26.195 x 9.39	245.97	
17.	THIRD FLOOR	Lab 501	25.970 x 9.41	244.38	Cold Room-1 Discussion Room-1 Scientist Chamber-2
18.		Lab 505	26.195 x 7.50	196.46	
				3777.68	

(To be typed on Bidder's Letter Head)

**ACKNOWLEDGEMENT CUM CONSENT LETTER**

To

Regional Center for Biotechnology,  
Plot No -180, Udyog Vihar Ph-I,  
Gurgaon-122016, (Haryana)  
Email: [mathew@rcb.res.in](mailto:mathew@rcb.res.in)

**PHN:** 0124-2848809 / 2848808

**ATTN :** Mr. Biju Mathew, Sr. Manager (A&F)

**SUBJECT:** Design, Supply, Fabrication and Installation of Modular Lab Furniture and Fume Hoods in New Lab Blocks of Regional Center for Biotechnology Campus, at NCR Biotech Science Cluster, Village-Bhankri, Faridabad, Haryana.

**(BIDDING DOCUMENT NO.: RCB/BSC/TENDER/Lab Furniture-2013-14/007)**

Dear Sir,

We hereby acknowledge receipt of a complete set of Bidding Document along with enclosures for subject works as per the Master Index for our use in preparing the Bid.

We undertake that the contents of the above Bidding Document shall be kept confidential and further that the drawings, specifications and documents shall not be transferred and that the said documents are to be used only for the purpose for which they are intended.

A) We intend to bid as requested for the subject works and furnish following details with respect to our quoting office:

(i) POSTAL ADDRESS : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(ii) CONTACT PERSON : \_\_\_\_\_

(iii) TELEPHONE NUMBER : \_\_\_\_\_

(iv) MOBILE NUMBER : \_\_\_\_\_

(v) TELEFAX NUMBER : \_\_\_\_\_

(vi) E-MAIL ADDRESS : \_\_\_\_\_

B) Contact person at Delhi, if any:

(i) POSTAL ADDRESS : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(ii) CONTACT PERSON : \_\_\_\_\_

(iii) TELEPHONE NUMBER : \_\_\_\_\_

(iv) MOBILE NUMBER : \_\_\_\_\_

(v) TELEFAX NUMBER : \_\_\_\_\_

(vi) E-MAIL ADDRESS : \_\_\_\_\_

C) We are unable to submit bid for the reasons given below.

Reasons for non-submission of bid:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

AGENCY'S NAME : \_\_\_\_\_

SIGNATURE : \_\_\_\_\_

NAME : \_\_\_\_\_

DESIGNATION : \_\_\_\_\_

DATE : \_\_\_\_\_

NOTE : Bidder is requested to furnish the details mentioned at (A) and (B) or (C) immediately after receipt of Bidding Document.

**(SIGNATURE OF BIDDER)**

# **PROPOSAL FORMS**

**FORMAT FOR DETAILS OF SIMILAR WORK DURING PAST .....YEARS**

S. No	Description of the Goods/works/ Services	FOA / LOA/PO/ WO No. and date	Full Postal Address & phone nos. of Client. <i>Name, designation and address of Engineer/ Officer-in-Charge (for cases other than purchase)</i>	Value of Contract/ Order (Specify Currency Amount)	Date of Commencement Of Work/ Services or supply of goods	Scheduled Completion Time (Months) Delivery Schedule	Date of Actual Completion / Supply	Reasons for delay in execution, if any
1	2	3	4	5	6	7	8	9
Pl refer instruction								

Place:  
Date:

[Signature of Authorized Signatory of Bidder]  
Name:  
Designation:  
Seal:

Instructions:

- 1) Bidders are expected to provide details of the work **meeting the Bidder Qualification criteria** which shall be considered for qualification purpose.
- 2) Copies of Letter of awards/ Order/ Work Orders and completion certificate for all the works mentioned above shall be furnished.
- 3) The said documents, as mentioned at Sl.no.2 above, shall be notarized by any Notary Public along with an affidavit from the bidder in the prescribed format or duly certified by the Statutory Auditor of the bidder or a practicing Chartered Accountant (not being an employee or a Director or not having any interest in the bidder's company/ firm) where audited accounts are not mandatory as per law.
- 4) It may be noted that in the absence of above certificates, the details would be considered inadequate and could lead to the bid being considered ineligible for

**AFFIDAVIT**

AFFIDAVIT OF ....., S/o D/o \_\_\_\_\_,  
resident of

EMPLOYED AS \_\_\_\_\_

AS.....WITH.....

HAVING OFFICE AT..... PIN.....

I, the above named deponent do hereby solemnly affirm and state as under:-

1. That I am the authorized representative and signatory of M/s.....
2. That the document (s) submitted, as mentioned hereunder, by M/s ..... along with the Bid Document submitted under covering letter no. .... dated ..... towards Tender No. .... for..... (Project) has / have been submitted under my knowledge.

Sr. No.	Document Reference no. & date	Document subject	Issuing Authority

3. That the document(s) submitted, as mentioned above, by M/s ..... along with the Bid Document for meeting the Bid Qualification Criteria there under, vide covering letter no. .... dated ....., towards Tender No. .... for ..... are authentic, vide covering letter of their originals and have been issued by the issuing authority mentioned above and no part of the document(s) is false, forged or fabricated.
4. That no part of this affidavit is false and that this affidavit and the above declaration in respect of genuineness of the documents has been made having full knowledge of (i) the provisions of the Indian Panel Code in respect of offences including, but not limited to those pertaining to criminal breach of trust, cheating and fraud and (ii) provisions of bidding conditions which entitle the RCB to initiate action in the event of such declaration turning out to be a misrepresentation or false representation.
5. I depose accordingly.

**DEPONENT**

**VERIFICATION**

I, ..... the deponent above named do hereby verify that the factual contents of this affidavit are true and correct. No part of it is false and nothing material has been concealed there from.

Verified at ..... on this ..... day of .....20....

**DEPONENT**

**FORMAT FOR  
FINANCIAL CAPABILITY OF THE BIDDER**

**A.. ANNUAL TURNOVER OF LAST 3 YEARS:**

Year	Amount (Currency)
Year 1:	
Year 2:	
Year 3:	

**B. NET WORTH FOR LAST AUDITED FINANCIAL YEAR:**

[Signature of Authorized Signatory]  
Name:  
Designation:  
Seal:

**PRESENT COMMITMENTS AS ON .....**  
**(Specify the Date)**

<b>Sr. No.</b>	<b>Full postal Address of client &amp; name of officer in-Charge</b>	<b>Description of the work</b>	<b>Value of Contract (in rupees)</b>	<b>Date of Commencement of Work</b>	<b>Scheduled Completion Period</b>	<b>%age Completion As on date</b>	<b>Expected Date of Completion</b>	<b>Remarks</b>

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

**COMPLIANCE TO BID REQUIREMENT**

We M/s \_\_\_\_\_ hereby agree to fully comply with, abide by and accept without variation, deviation or reservation all technical, commercial and other conditions whatsoever of the Bidding Documents and Addendum to the Bidding Documents, if any, for subject work issued by Regional Center for Biotechnology.

We hereby further confirm that any terms and conditions if mentioned in our bid (Un-priced as well as Priced Part), shall not be recognized and shall be treated as null and void.

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

**CHECK LIST FOR SUBMISSION OF BID**

Bidder is requested to fill this check list and ensure that all details/documents have been furnished as called for in the Bidding Document along with duly filled in, signed & tamped check list **with each copy of the "Unpriced bid (Part – I)"**.

**Please tick the box and ensure compliance:**

**(A) UNDER SECTION –I**

(A.1) Bid Forwarding Letter

Submitted

(A.2) BID DOCUMENT FEE (in case of download)

SUBMITTED BY DEMAND DRAFT

DD No. \_\_\_\_\_ Dt. \_\_\_\_\_

Drawn on \_\_\_\_\_

For Rs. \_\_\_\_\_

(A-3) EMD/ BID BOND / BID SECURITY

Bidder to confirm that EMD/ Bid Bond/ Bid Security has been submitted by them as per Tender Proforma.

Submitted

(1) BY BANK GUARANTEE

BG No. \_\_\_\_\_ Dt. \_\_\_\_\_ From

Bank \_\_\_\_\_ Branch \_\_\_\_\_

For Rs. \_\_\_\_\_

Valid till \_\_\_\_\_

(2) BY DEMAND DRAFT

DD No. \_\_\_\_\_ Dt. \_\_\_\_\_

Drawn on \_\_\_\_\_

For Rs. \_\_\_\_\_

(3) Registration Certificate from NSIC for similar works(if applicable)

Submitted

(A.4) Power of Attorney in Favour of the bid signatory.

Submitted

**(B) UNDER SECTION -2**

- (B.1) Experience details as per FORM-A  
Submitted
- (B.2) Financial Details as per FORM-C  
Submitted
- (B.3) Audited Financial year Statements including Balance Sheet, profit and loss account and all other schedules submitted for the last three years.

YES  NO

- (B.4) Present Commitments as per FORM-D  
Submitted
- (B.6) Partnership Deed in case of partnership firm and Article of Association in case of limited company. In case of a proprietorship firm, the name and address of proprietor, and certified copy of Certificate of Registration of firm'

Submitted

- (B.8) Declaration regarding PF as per FORM-J.  
Submitted

**C) UNDER SECTION – 3**

- (C.1) Compliance to Bid Requirement as per FORM-E.  
Submitted
- (C.3) Reply to commercial questionnaire as per FORM-G with Bidder's reply/ confirmation for each Sl. No.  
Submitted
- (C.4) Reply to Technical questionnaire (if enclosed in bidding document) with Bidder's Reply/ Confirmation for each Sl. No.  
Submitted
- (C.5) Declaration by Bidder as per FORM-I.  
Submitted
- (C.6) Unpriced copy of Price Part i.e. Summary of Prices with prices replaced by word “Quoted”  
Submitted

**(D) UNDER SECTION – 4**

(D.1) Technical Details/ Documents specified in Bidding Document.

Submitted  Not Applicable

**(E) CONFIRM THE FOLLOWING**

(E.1) Master Index of Bidding Document, Compliance Letter for Addendum/ Amendment, if any, has been submitted along with offer, duly signed and stamped on each page.

YES

(E.2) All Documents pertaining to experience criteria are duly certified by the Statutory auditor/chartered accountant/notarized by the bidder

YES

(E.3) Integrity Pact duly filled in, signed & stamped Submitted

YES

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

## COMMERCIAL QUESTIONNAIRE

Bidder's reply/ confirmation as furnished in the Commercial Questionnaire (CQ) shall supersede the stipulations mentioned elsewhere in their bid.

SL.NO.	RCB'S QUERY	BIDDER'S REPLY/ CONFIRMATION
1.0	Confirm that your Bid is valid for 04 (Four) months from the date of opening of Unpriced Part of Bid.	
2.0	Confirm that Earnest Money Deposit (EMD) as per bid stipulations have been furnished along with bid.	
3.0	Confirm your compliance to total Scope of Work mentioned in the Bidding Document.	
4.0	Confirm that the following documents are submitted with Part-I:	
a)	All documents as per CHECK LIST.	
b)	Master Index as issued is submitted in unpriced part duly signed and stamped on each page.	
c)	Compliance letter for Addendum / Amendments as a token of acceptance (Applicable, if issued).	
5.0	Confirm your compliance to critical stipulations of Bidding Document as mentioned in ITB/NIB	
6.0	Schedule of Rates/Price	
a)	Confirm that the Price Part of Bid as per Price Schedule format enclosed with Bidding Document has been duly filled.	
b)	Confirm that the quoted price is for complete scope of work, supply of all material, labour, consumables etc. construction, erection, testing, commissioning, performance guarantee test run(s) and supply of spare parts as applicable as per the Scope of Work.	
7.0	Confirm that you have studied complete Bidding Document and your Bid is in accordance with the requirements of the Bidding Document.	
8.0	Confirm your acceptance for 'Scope of Supply' mentioned in the Bidding Document and confirm that all materials shall be supplied as per Standards and Specification.	

<b>SL.NO.</b>	<b>RCB'S QUERY</b>	<b>BIDDER'S REPLY/ CONFIRMATION</b>
9.0	Confirm your acceptance for Time Schedule as mentioned in Bidding Document.	
10.0	Confirm that your quoted price includes all taxes, duties as applicable for this Work including Service Tax in accordance with the provision of SCC.	
11.0	Confirm that your quoted price includes all types of insurance as per the provisions of SCC.	
12.0	Confirm that all costs resulting from safe execution of Work, such as safety induction, use of protective clothing, safety glasses and helmet, safety precaution taken during monsoon, or any other safety measures to be undertaken by the Contractor for execution of work are included in the quoted rates.	
13.0	Confirm that adequate numbers of construction equipments, tools, tackles etc. shall be deployed to complete the work as per the time schedule.	
14.0	Confirm that you shall deploy adequate project/site organization with qualified supervisory personnel having requisite experience including personnel responsible for safety, planning, stores, QA/QC etc.	
15.0	Confirm that while submitting your price, you have taken consideration of scope of supplies, scope of work and technical requirement mentioned in Bidding Document.	
16.0	Confirm that you have your own QA/QC programme for executing this work. In case of award of work, you will submit all QA/QC documents as given in the SCC.	
17.0	Confirm that Bidder is not involved in any Litigation/ Arbitration with OWNER. In case of Litigation / Arbitration, if any, please furnish information about the same.	
18.0	Confirm that Bidder is not under Liquidation, court receivership or similar proceedings.	
19.0	Confirm that the Bidder has not been banned OR delisted by any Government or Quasi Government agencies or Public Sector Units.	

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

BIDDER'S QUERIES

SL. NO.	BIDDING DOCUMENT			SUBJECT	BIDDER'S QUERY	OWNER'S REPLY
	PART /VOL.	PAGE NO.	CLAUSE NO.			

NOTE :

1. Bidder's Queries may be sent by fax to fax numbers 0124-2848808, 26167664 and also by e-mail to [mathew@rcb.res.in](mailto:mathew@rcb.res.in), [shyambudhwar@gmail.com](mailto:shyambudhwar@gmail.com)
2. Technical & Commercial queries, if any, must be submitted separately in editable format as per this format.

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

**DECLARATION BY THE BIDDER**

We \_\_\_\_\_ (Name of the Bidder) hereby confirm that we have gone through and understood the Bidding Document and that our Bid has been prepared accordingly in compliance with the requirement stipulated in the said documents.

We are submitting Master Index of Bidding Document as part of our Bid duly signed and stamped on each page in token of our acceptance. We undertake that the Bidding Document shall be deemed to form part of our bid and in the event of award of work to us, the same shall be considered for constitution of Contract Agreement. Further, we shall sign and stamp each page of this bidding document as a token of Acceptance and as a part of the Contract in the event of award of Contract to us.

We further confirm that we have indicated prices in Summary of Prices, considering detailed description of Items given in Schedule of Rates and submitted in Price Bid in separate envelope. We confirm that rate quoted by us includes price for all works/activities/supply etc. as mentioned in Item Description of the respective Item(s) in Schedule of Rates.

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

**NOTE :** This declaration should be signed by the Bidder’s representative who is signing the Bid.

**DETAILS OF P.F. REGISTRATION**

Bidder to furnish details of Provident Fund Registration :

P.F REGISTRATION NO. :

DISTRICT & STATE :

We hereby confirm that the above PF Account is under operation presently and shall be used for all PF related activities for the labour engaged by us in the present work (if awarded to us).

**SIGNATURE OF BIDDER** : \_\_\_\_\_  
**NAME OF BIDDER** : \_\_\_\_\_  
**COMPANY SEAL** : \_\_\_\_\_

**BIDDER'S GENERAL INFORMATION**

To  
 Regional Center for Biotechnology,  
 Plot No- 180,  
 Udyog Vihar Phase-I  
 Dhundahera, Gurgaon-122016  
 Haryana, India

- 1-1 Bidder Name: \_\_\_\_\_
- 1-2 Number of Years in Operation: \_\_\_\_\_
- 1-3 Address of Registered Office: \_\_\_\_\_  
 City \_\_\_\_\_ District \_\_\_\_\_  
 State \_\_\_\_\_ PIN/ZIP \_\_\_\_\_
- 1-4 Operation Address  
 if different from above: \_\_\_\_\_  
 \_\_\_\_\_  
 City \_\_\_\_\_ District \_\_\_\_\_  
 State \_\_\_\_\_ PIN/ZIP \_\_\_\_\_
- 1-5 Telephone Number: \_\_\_\_\_  
 (Country Code) (Area Code) (Telephone Number)
- 1-6 E-mail address: \_\_\_\_\_
- 1-7 Website: \_\_\_\_\_
- 1-8 Fax Number: \_\_\_\_\_  
 (Country Code) (Area Code) (Telephone Number)
- 1-9 ISO Certification, if any {If yes, please furnish details }
- 1-10 Banker's Name: \_\_\_\_\_
- 1-11 Branch: \_\_\_\_\_
- 1-12 Branch Code: \_\_\_\_\_
- 1-13 Bank account number: \_\_\_\_\_
- 1-14 Excise Registration number: \_\_\_\_\_
- 1-15 Excise Range: \_\_\_\_\_
- 1-16 Excise Division: \_\_\_\_\_
- 1-17 Excise Collectorate: \_\_\_\_\_
- 1-18 Service Tax Registration No. \_\_\_\_\_
- 1-19 Local ST No. : \_\_\_\_\_
- 1-20 CST No. : \_\_\_\_\_
- 1-21 PAN No. : \_\_\_\_\_
- 1-22 Whether SSI Registered or not: \_\_\_\_\_

**BANK ACCOUNT PARTICULARS**

- 1. BIDDER'S NAME:
- 2. ADDRESS OF BIDDER:
- 3. PARTICULAR OF BANK ACCOUNT:
  - a). NAME OF THE BANK
  - b). NAME OF THE BRANCH
  - c). BRANCH CODE
  - d). ADDRESS OF THE BANK
  - e). 9 DIGIT CODE NUMBER OF THE BANK & BRANCH  
(as appearing in MICR Cheque issued by the Bank)
  - f). TYPE OF ACCOUNT (SB, CURRENT, CASH, CREDIT)
  - g). ACCOUNT NUMBER
  - h). WHETHER BRANCH IS RTGS/INTERNET ENABLED  
(if yes, then Bank's IFSC Code number)

I hereby declare that the particulars given above are correct and complete and accord our consent for receiving payment through electronic mechanism.

( \_\_\_\_\_ )  
Signature of the authorised signatory(ies)  
& Designation

Place:

Date:

Official seal of the company

**BANK CERTIFICATION**

Certified that the particulars furnished above are correct as per our records.

Bank's Stamp

Place:

Date:

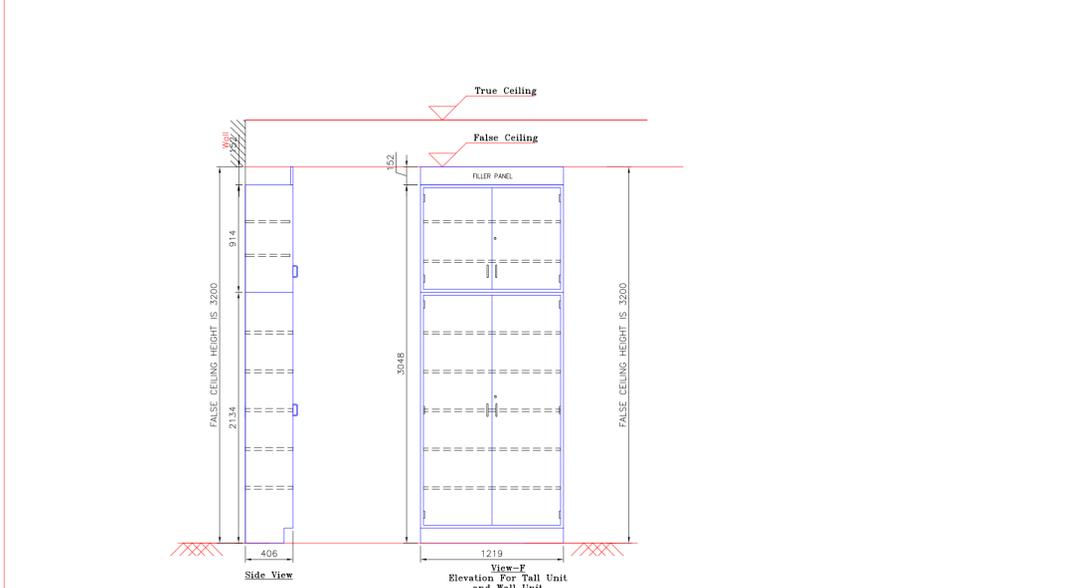
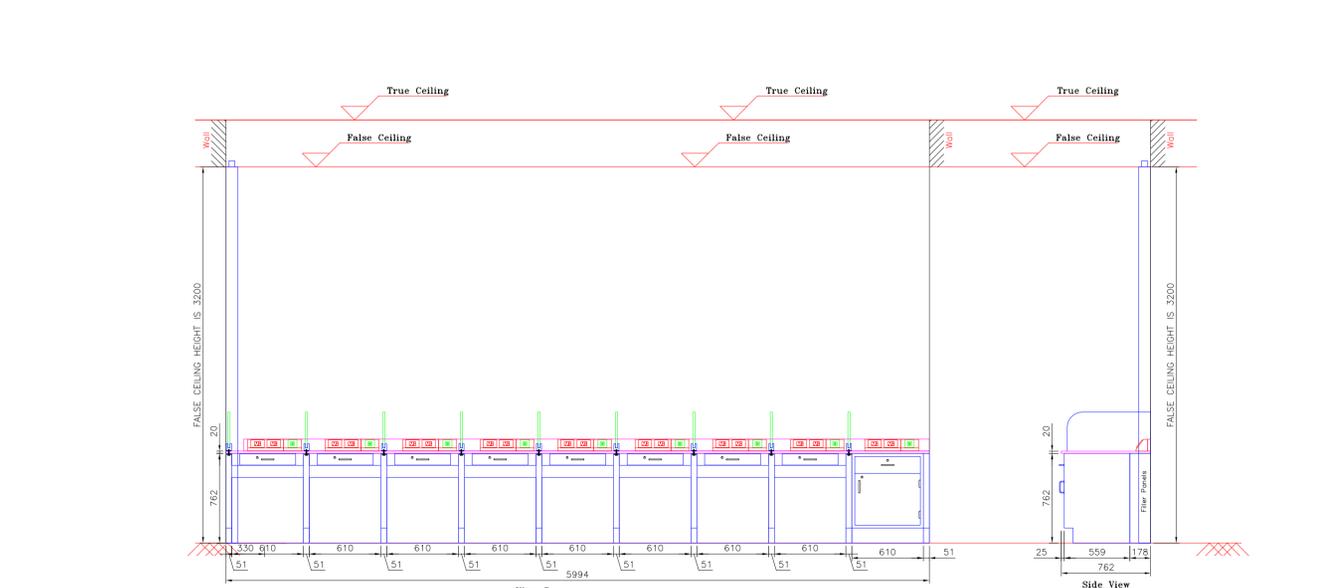
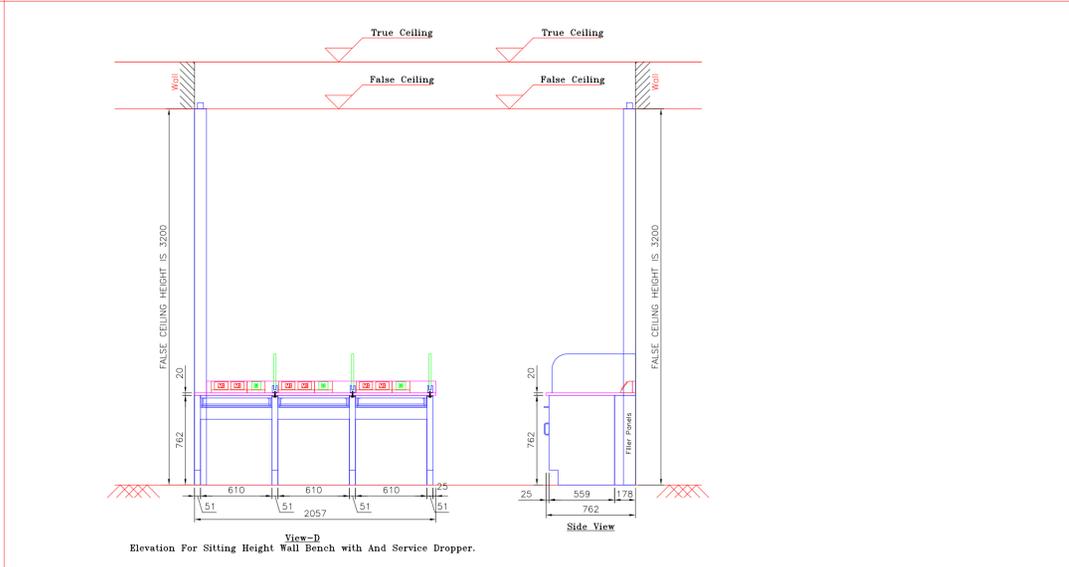
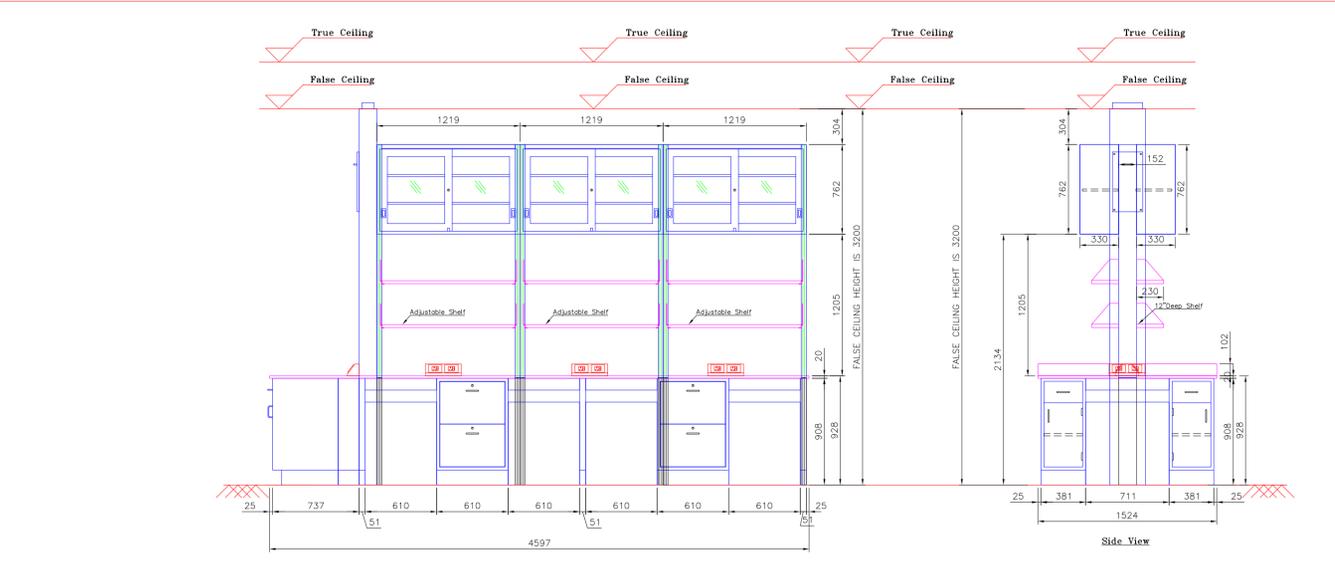
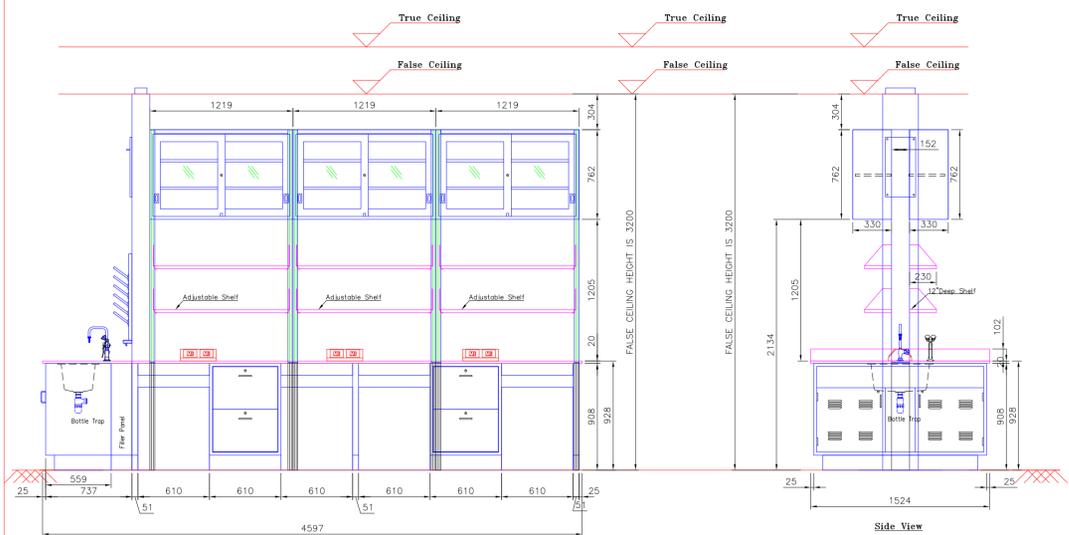
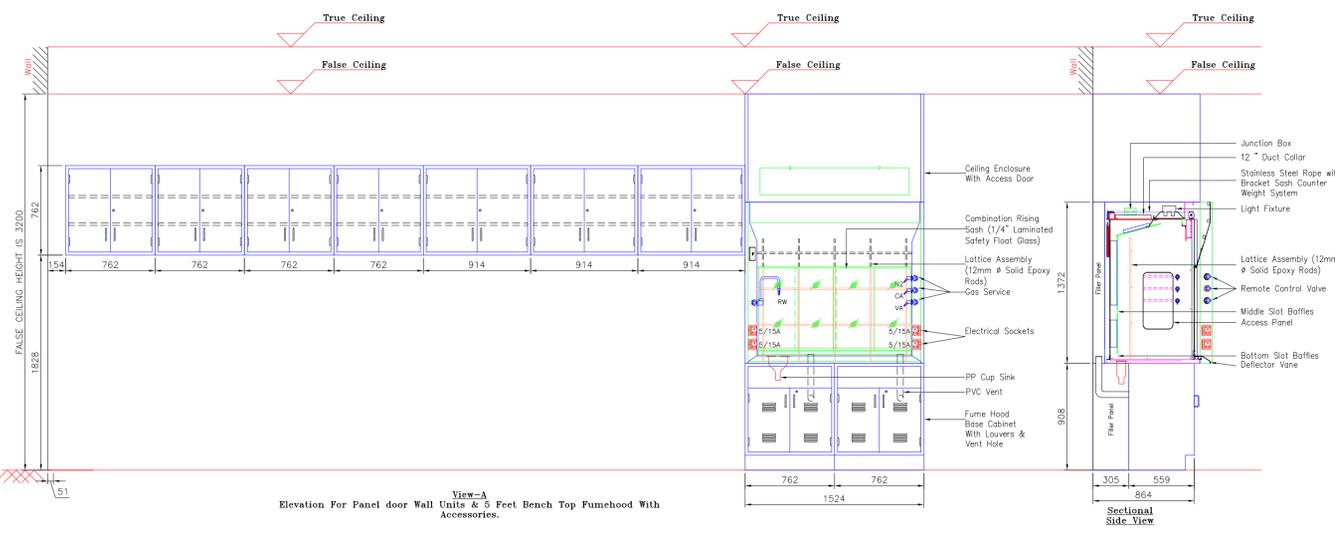
Signature of the authorized official of the bank

**Typical Tender Drawing  
for  
Lab Furniture & Fume Hood**



**NOTE:**  
 ○ All dimensions in mm  
 ○ All wall to wall dimensions are to be verified at site.  
 ○ All Floor mounted case work should be with 100mm height toe space.

# TENDER



Drawing Title:  
**Laboratory Furniture and Fumehood Layout  
 Typical Tender Drawing  
 Elevation View**

Issue Date: 07.01.2014	Drawing No: RCB-TEND-FUR-1002
	Revision: 00

# **REGIONAL CENTRE FOR BIOTECHNOLOGY, Gurgaon**



## **TECHNICAL SPECIFICATION FOR LABORATORY FURNITURE, FUMEHOOD & EXHAUST SYSTEM**

### **INDEX**

<b>SL.</b>	<b>CHAPTER NAME</b>	<b>DESCRIPTION</b>
1	CHAPTER-01	LABORATORY FURNITURE SPECIFICATION
2	CHAPTER-02	FUMEHOOD SPECIFICATION
3	CHAPTER-03	EXHAUST SYSTEM SPECIFICATION



United Nations  
Educational, Scientific and  
Cultural Organization

**REGIONAL CENTRE FOR BIOTECHNOLOGY**  
an institution of education, training and research

Established by the Dept. of Biotechnology, Govt. of India  
Under the Auspices of UNESCO  
180 Udyog Vihar Phase 1, Gurgaon - 122016, India

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## **CHAPTER-01**

# **LAB FURNITURE SPECIFICATIONS**

## DESCRIPTION OF WORK

### 1.00 SUMMARY AND SCOPE

#### A. Section Includes:

1. Furnish all cabinets and casework, including tops, ledges, supporting structures. Include delivery to the building, set in place, level, and scribe to walls and floors as required. Furnish and install all filler panels, knee space panels and scribes as shown on drawings.
2. Furnish and deliver all utility service outlet accessory fittings, electrical receptacles and switches identified on drawings as mounted on the laboratory furniture. All plumbing and electrical fittings, not preinstalled in equipment, will be packaged separately and properly marked for delivery to the appropriate contractor.
3. Furnish and deliver, for installation by the mechanical contractor, all laboratory sinks, cup sinks or 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 less the couplings required to connect them to the drain piping system.
4. Furnish service strip supports where specified, and setting in place service tunnels, service turrets, supporting structures and reagent racks of the type shown on the drawings.
5. Removal of all debris, dirt and rubbish accumulated as a result of the installation of the laboratory furniture to an onsite container provided by others, leaving the premises broom clean and orderly.

### 1.01 BASIS OF WORK

**Laboratory Furniture** as the standard of construction for steel laboratory furniture. The construction standards of this product line shall provide the basis for quality and functional installation.

### 2.00 CABINET STYLE:

#### **Steel:**

Cabinet bodies, drawer bodies, shelves, drawer heads and door assemblies shall be fabricated from Cold Rolled Steel.

## **2.01 DRAWER AND DOOR STYLE:**

The outer drawer and door head shall have a channel formation on all four sides to eliminate sharp raw edges of steel and the top front corners shall be welded and ground smooth. Drawer and door, when closed, shall be recessed to create an overall flush face, and with optional pull.

## **2.02 MATERIALS**

### **A. General Requirements:**

It is the intent of this specification to provide a high quality steel cabinet specifically designed for the laboratory environment.

### **B. Steel:**

Cold Rolled Steel:

Cold rolled sheet steel shall be prime grade 12, 14, 16, 18 and 20 gauge U.S. Standard; roller leveled, and shall be treated at the mill to be free of scale, ragged edges, deep scratches or other injurious effects.

### **C. Glass:**

Glass used for framed sliding and swinging doors shall be 1/8" float glass. Glass used for unframed sliding doors, shall be 1/4" float glass. Glass used in fume hoods or other hazardous locations shall be 7/32" laminated safety float glass, except the glass shielding fluorescent lights in fume hoods shall be tempered glass to provide greater resistance to heat and impact.

### **D. Drawer and Door Pulls:**

Pull shall be of modern design, offering a comfortable handgrip, and be securely fastened to doors and drawers with screws. All pulls shall be satin finish aluminum, with a clear, lacquer finish. Two pulls shall be required on all drawers over 24" long. Use of plastic pulls (molded or extruded), or a design not compatible for usage by the handicapped will not be acceptable.

### **E. Hinges:**

Hinges shall be made of Type 304 stainless steel .089 thick, 2-1/2" high, with brushed satin finish, and shall be the institutional type with a five-knuckle bullet-type barrel. Hinges shall be attached to both door and case with two screws through each leaf. Welding of hinges to door or case will not be accepted. Doors less than 36" in height shall be hung on one pair of hinges, and doors over 36" high shall be hung on 3 hinges.

**F. Locks:**

Exposed lock noses shall be dull nickel (satin) plated and stamped with identifying numbers. Locks shall have capacity for 2000 primary key changes. Master key one level with the potential of 10 different, non-interchangeable master key groups.

**G. Positive Catch:**

A two-piece heavy-duty cam action positive catch shall be provided on all base cupboard doors and shall be positioned near the pivoting edge of door to provide a clean unobstructed opening. Main body of the catch shall be confined within an integral cabinet divider rail, while latching post shall be mounted on the hinge side of door. Nylon roller type catches are not acceptable.

**H. Elbow Catches:**

Elbow catches and strike plates shall be used on left hand doors of double door cases where locks are used, and are to be burnished cast aluminum, with bright brass finish.

**I. Shelf Adjustment Clips:**

Shelf adjustment clips shall be nickel-plated steel.

**J. Base Molding:**

Base Molding shall be provided on all table legs, unless otherwise specified, to conceal leveling device. Shoes shall be a pliable, black vinyl material. Corner clip should be provided to hold the base molding firmly. Use of a leg shoe, which does not conceal leveling device, will not be acceptable

**K. Sink Supports:**

Sink supports shall be the hanger type, suspended from top front and top rear horizontal rails of sink cabinet by four 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full length reinforcements welded to the front and rear top rails. Two 3/4" x 1-2/2" x 12 gauge channels shall be hung on the threaded rods to provide an adjustable sink cradle for supporting sinks. When sink capacity exceeds 3,750 cu. in., the sink supports shall be suspended from full-length reinforcements welded to the two end rails. Two 1" x 2" x 10 gauge full-length channels shall be hung from the four 1/4" dia. rods to provide an alternate sink cradle.

## 2.03 CONSTRUCTION

### L. Steel Base Cabinet Construction:

#### 1. General:

- a. The steel 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, dies, fixtures and skilled workmanship to meet the intended quality and quantity for the project.
- b. All cabinet bodies shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, top rails, bottoms and vertical posts in same plane without overlap. 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.
- c. Each cabinet shall be complete so that units can be relocated at any subsequent time without requiring field application of finished ends or other such parts.
- d. Case openings shall be rabbetted on all four sides for both hinged and sliding doors to provide a dust resistant case.
- e. All cabinets shall have a cleanable smooth interior. Bottom edges shall be formed down on sides and back to create easily cleanable corners with no burrs or sharp edges, and front edge shall be offset to create a seamless drawer and door recess rabbet for dust stop.

#### 2. Steel Gauges:

Gauges of steel used in construction of cases shall be 18 gauge, except as follows:

- a. Corner gussets for leveling bolts and apron corner braces, 12 gauges.
- b. Case and drawer suspension channels, 14 gauges.
- c. Top and intermediate front horizontal rails, table aprons, hinge reinforcements, and reinforcement gussets, 16 gauge.
- d. Drawer assemblies, door assemblies, bottom, bottom back rail, toe space rail, and adjustable shelves, 20 gauge.

### 3. Base Cabinets:

- a. End uprights shall be formed into not less than a channel formation at top, bottom, back and front. The front edge shall further offset to form a strike for doors and drawers, and shall be perforated for the support of drawer channels, intermediate rails and hinge screws. Upright filler shall be screwed in place in all cupboard units to close the back of the channel at front of the upright and to provide a smooth interior for the cupboard to facilitate cleaning. The upright filler shall be perforated with shelf adjustment holes at not more than 2" centers painted prior to assembly. The inside front of the upright shall be further reinforced with a full height 16 gauge hinge reinforcement angle.
- b. Top horizontal rail on base cabinets shall interlock within the flange at top of end panels for strength, but shall be flush as face of unit. Top rail shall have a full width rabbet for swinging doors and drawers. Reinforcements shall be provided at all front corners for additional welded strength between vertical and horizontal case members.
- c. Intermediate rails shall be provided between doors and drawers, but shall not be provided between drawers unless made necessary by locks in drawers. When required, intermediate rails shall be recessed behind doors and drawer fronts, and designed so that security panels may be added as required.
- d. Intermediate vertical uprights shall be furnished to enclose cupboards when used in a unit in combination with a half width bank of drawers. However, to allow storage of large or bulky objects, no upright of any type shall be used at the center of double door cupboard units.
- e. Cabinet bottom, and bottom rail shall be formed of one piece of steel except in corner units and shall be formed down on sides and back to create a square edge transition welded to cabinet end panels, and front edge shall be offset to create a seamless drawer and door recess rabbet for dust stop.
- f. Toe space rail shall extend up and forward to engage bottom rail to form a smooth surfaced fully enclosed toe space, 3" deep x 5" high. Whenever toe space base is omitted for units to set on building bases on separate steel bases, then the toe space rail shall extend back 4-1/2".
- g. Back construction shall consist of a top and bottom rail, channel formed for maximum strength and welded to back and top flange of end uprights, open for access to plumbing lines.

Cupboard units only shall be provided with removable back panels.

- h. Die formed gussets, with multiple ends for strength, shall be furnished in each bottom corner of base units to insure rigidity, and a 3/8"-16 leveling bolt, 3" long, and shall engage a clinch nut in each gusset. Access to the leveling bolts shall be through plug buttons in the bottom pan. Each leveling bolt and gusset shall be capable of supporting 500 lbs. Access to leveling bolts through toe space or leveling bolts requiring special tools to adjust are not acceptable.
- i. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear; formed down 3/4" at each end, shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf.
- j. Drawer bodies shall be made in one-piece construction including the bottom, two sides, back and front. They shall be fully coved at interior bottom on all four sides for easy cleaning. The top front of the inner drawer body shall be offset to interlock with the channel formation in drawer head providing a 3/4" thick drawer head.
- k. Drawer suspension assembly shall consist of 2 sections providing a quiet, smooth operation on ball bearing nylon rollers. All drawers shall be self-closing from a point 5" open. Cabinet channels shall maintain alignment of drawer and provide an integral drawer stop, but the drawer shall be removable without the use of tools. Drawers shall provide 13-5/8" front to back clearance when fully extended. Drawers shall rise when opened thus avoiding friction with lower drawers and/or doors. Drawer suspension system shall incorporate a double stop, lock open feature. Case suspension channels shall be Galvanized Steel, drawer suspension channels shall be Cold Rolled Steel. Drawer suspension channels on Stainless Steel Cabinets shall be zinc plated after they are formed.
- l. Steel Door assembly (two-piece) for solid pan swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed at all four sides. The corners on the pull side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material.

- m. Steel Drawer/door assemblies shall be painted prior to assembly. Both shall be punched for attaching drawer pulls. Likewise, inner pan formation of door and drawer body shall be indented for in-field installation of locks when required.
- n. Doors shall be readily removable and hinges easily replaceable. Hinges shall be applied to the cabinet and door with screws. Welding of hinges to either cabinet or door will not be acceptable.
- o. Knee space panels, where shown or specified, shall be 20 gauges, finished same as casework cabinets, and easily removable for access to mechanical service areas.

#### **4. Upright Racks:**

6" wide 114" height vertical Uprights are designed to grout directly to the floor. It will have slots in the front with 1" vertical increment for adjusting the Shelves. Shelves are 15" deep and sized to match the vertical upright spacing. Steel shelves are with a steel front edge lip.

### **2.04 PERFORMANCE REQUIREMENTS**

#### **M. Steel Casework Construction Performance:**

1. Base cabinets shall be constructed to support at least a uniformly distributed load 200 lbs. per square foot of cabinet top area, including working surface without objectionable distortion of interference with door and drawer operation.
2. Base cabinet corner gussets with leveling bolts shall support 500 lbs. per corner, at 1-1/2" projection of the leveling bolt below the gusset.
3. Each adjustable and fixed shelf 4 ft. or shorter in length shall support an evenly distributed load of 40 lbs. per square ft. up to a maximum of 200 lbs., with nominal temporary deflection, but without permanent set.
4. Drawer construction and performance shall allow 13-5/8" clear when in an extended position and suspension system shall prevent friction contact with any other drawer or door during opening or closing. All drawers shall operate smoothly, a minimum of 10,000 cycles with an evenly distributed load of 150 lbs.

5. Swinging doors on floor-mounted casework shall support 200 lbs. suspended at a point 12" from hinged side, with door swung through an arc of 160 degrees. Weight load test shall allow only a temporary deflection, without permanent distortion or twist. Door shall operate freely after test and assume a flat plane in a closed position.

#### **N. Steel Paint System Finish and Performance Specification:**

##### **Steel Paint System Finish:**

After Cold Rolled Steel and Textured Steel 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.

After the phosphate treatment, the steel shall be dried and all steel surfaces shall be coated with a chemical and corrosion-resistant, environmentally friendly, electro statically applied powder coat finish. All components shall be individually painted, insuring that no area be 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.

The completed finish system in standard colors shall meet the performance test requirements specified under PERFORMANCE TEST RESULTS.

#### **1. Performance Test Results (Chemical Spot Tests):**

##### **a. Testing Procedure:**

Chemical spot tests for non-volatile chemicals shall be made by applying 5 drops of each reagent to the surface to be tested and covering with a 1-1/4" dia. watch glass, convex side down to confine the reagent. Spot tests of volatile chemicals shall be tested by placing a cotton ball saturated with reagent on the surface to be tested and covering with an inverted 2-ounce wide mouth bottle to retard evaporation. All spot tests shall be conducted in such a manner that the test surface is kept wet throughout the entire test period, and at a temperature of 77° ±3° F. For both methods, leave the reagents on the panel for a period of one hour. At the end of the test period, the reagents shall be flushed from the surface with water, and the

surface scrubbed with a soft bristle brush under running water, rinsed and dried. Volatile solvent test areas shall be cleaned with a cotton swab soaked in the solvent used on the test area. Immediately prior to evaluation, 16 to 24 hours after the reagents are removed, the test surface shall be scrubbed with a damp paper towel and dried with paper towels.

**b. Test Evaluation:**

Evaluation shall be based on the following rating system.

Level 0 – No detectable change.

Level 1 – Slight change in color or gloss.

Level 2 – Slight surface etching or severe staining.

Level 3 – Pitting, cratering, swelling, or erosion of coating. Obvious and significant deterioration.

**After testing, panel shall show no more than three (3) Level 3 conditions.**

**c. Test Reagents**

Test No.	Chemical Reagent	Test Method
1.	Acetate, Amyl	Cotton ball & bottle
2.	Acetate, Ethyl	Cotton ball & bottle
3.	Acetic Acid, 98%	Watch glass
4.	Acetone	Cotton ball & bottle
5.	Acid Dichromate, 5%	Watch glass
6.	Alcohol, Butyl	Cotton ball & bottle
7.	Alcohol, Ethyl	Cotton ball & bottle
8.	Alcohol, Methyl	Cotton ball & bottle
9.	Ammonium Hydroxide, 28%	Watch glass
10.	Benzene	Cotton ball & bottle
11.	Carbon Tetrachloride	Cotton ball & bottle
12.	Chloroform	Cotton ball & bottle
13.	Chromic Acid, 60%	Watch glass
14.	Cresol	Cotton ball & bottle
15.	Dichlor Acetic Acid	Cotton ball & bottle
16.	Dimethylformamide	Cotton ball & bottle
17.	Dioxane	Cotton ball & bottle
18.	Ethyl Ether	Cotton ball & bottle
19.	Formaldehyde, 37%	Cotton ball & bottle
20.	Formic Acid, 90%	Watch glass
21.	Furfural	Cotton ball & bottle
22.	Gasoline	Cotton ball & bottle

23.	Hydrochloric Acid, 37%	Watch glass
24.	Hydrofluoric Acid, 48%	Watch glass
25.	Hydrogen Peroxide, 3%	Watch glass
26.	Iodine, Tincture of	Watch glass
27.	Methyl Ethyl Ketone	Cotton ball & bottle
28.	Methylene Chloride	Cotton ball & bottle
29.	Mono Chlorobenzene	Cotton ball & bottle
30.	Naphthalene	Cotton ball & bottle
31.	Nitric Acid, 20%	Watch glass
32.	Nitric Acid, 30%	Watch glass
33.	Nitric Acid, 70%	Watch glass
34.	Phenol, 90%	Cotton ball & bottle
35.	Phosphoric Acid, 85%	Watch glass
36.	Silver Nitrate, Saturated	Watch glass
37.	Sodium Hydroxide, 10%	Watch glass
38.	Sodium Hydroxide, 20%	Watch glass
39.	Sodium Hydroxide, 40%	Watch glass
40.	Sodium Hydroxide, Flake	Watch glass
41.	Sodium Sulfide, Saturated	Watch glass
42.	Sulfuric Acid, 33%	Watch glass
43.	Sulfuric Acid, 77%	Watch glass
44.	Sulfuric Acid, 96%	Watch glass
45.	Sulfuric Acid, 77% and Nitric Acid, 70%, equal parts	Watch glass
46.	Toluene	Cotton ball & bottle
47.	Trichloroethylene	Cotton ball & bottle
48.	Xylene	Cotton ball & bottle
49.	Zinc Chloride, Saturated	Watch glass

\* Where concentrations are indicated, percentages are by weight.

**2. Performance Test Results (Heat Resistance):**

Hot water (190° F - 205° F) shall be allowed to trickle (with a steady stream at a rate not less than 6 ounces per minute) on the finished surface, which shall be set at an angle of 45° from horizontal, for a period of five minutes. After cooling and wiping dry, the finish shall show no visible effect from the hot water treatment.

**3. Performance Test Results (Impact Resistance):**

A one-pound ball (approximately 2" diameter) shall be dropped from a distance of 12 inches onto the finished surface of steel panel supported underneath by a solid surface. There shall be no evidence of cracks or checks in the finish due to

impact upon close eye-ball examination.

**4. Performance Test Results (Bending Test):**

An 18 gauge steel strip, finished as specified, when bent 180° over a 1/2" diameter mandrel, shall show no peeling or flaking off of the finish.

**5. Performance Test Results (Adhesion):**

Ninety or more squares of the test sample shall remain coated after the scratch adhesion test. Two sets of eleven parallel lines 1/16" apart shall be cut with a razor blade to intersect at right angle thus forming a grid of 100 squares. The cuts shall be made just deep enough to go through the coating, but not into the substrate. They shall then be brushed lightly with a soft brush. Examine under 100 foot-candles of illumination. Note: This test is based on ASTM D2197-68, "Standard Method of Test for Adhesion of Organic Coatings".

**6. Performance Test Results (Hardness):**

The test sample shall have a hardness of 4-H using the pencil hardness test. Pencils, regardless of their brand are valued in this way: 8-H is the hardest, and next in order of diminishing hardness are 7-H, 6-H, 5-H, 4-H, 3-H, 2-H, F, HB, B (soft), 2-B, 3-B, 4-B, 5-B (which is the softest).

The pencils shall be sharpened on emery paper to a wide sharp edge. Pencils of increasing hardness shall be pushed across the paint film in a chisel-like manner until one is found that will cut or scratch the film. The pencil used before that one-that is, the hardest pencil that will not rupture the film-is then used to express or designate the hardness.

**Granite Table Tops:**

The tabletops shall be of 25mm Pre-Laminated Board and 18/19mm Jet black Granite of an even surface and the level Tolerance less than 1 mm. The front edge of the granite shall be chamfered at an angle of 28 deg and smoothed. The back splash for the wall bench shall be granite 18/19mm thick material for a height of 4" from the finished table top level.

**Laminated Table Tops**

Laminated worktops and back-splash shall be built up to a 1/16" thick plastic surface (of the color and pattern selected), attached to the sub-top with a water resistant adhesive. Substrate shall be of 40-45 lbs. medium density particle board to make a finished top thickness of 1". All exposed edges shall be self-edge banded unless otherwise specified. All particle board edges and underside of top shall be sealed.

### **Polypropylene Molded Sinks:**

The sinks should be injection molded from Poly propylene co-polymer resin. Polypropylene to have very high resistance to attack from a wide range of chemicals and the ability to withstand temperatures up to 100 deg C. The impact resistance should be high which will minimize damage during and after installation. The sinks should be with self draining base and should be suitable for mounting on top or underside of the work benches. The sinks should be compatible to a vast number of acids, alkalis and reagents. The size of the sink is 711Lx468Dx245Hmm & Bowl size will be 651Lx406Dx245Hmm. This sinks shall have bottle trap with reducing coupler of size 51x31mm and with 38mm polypropylene pipe of one foot length.

## **LABORATORY SERVICE FIXTURES & SAFETY EQUIPMENTS**

### **I. General**

A. All laboratory service fixtures shall have the construction and shall meet the performance requirements set forth in this specification. Fixture types shall be as indicated in the fixture schedule or fixture details included in either the project drawings or these specifications.

B. All laboratory service fixtures shall be the product of one service fixture manufacturer to assure uniform appearance and ease of maintenance of the laboratory facility. Remote control valves and fittings furnished with fume hoods shall be the product of the same fixture manufacturer.

C. All service fixtures shall be factory assembled (including the assembly of valves and shanks to turrets, flanges and other mounting accessories), and each fixture shall be individually factory tested. Fixtures shall be tested in the manner and at the pressures set forth below.

D. Except as otherwise indicated, faucet and valve handles shall be forged brass Nylon type and shall have a color coded screw-on index disc. Color code requirements for indexing service fixtures shall follow DIN Standard 12920:1995.

### **II. Finish**

#### **A. General**

Laboratory service fixtures shall be furnished with a powder coated finish to enhance the appearance of the fitting and to protect against corrosion. Coating material shall be a blend of epoxy and polyurethane. The hybrid blend shall ensure a finish coating with and optimum combination of chemical resistance, mar and abrasion resistance and resistance to fading under ultraviolet (UV) light.



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## 2. Mar and Abrasion Resistance

Finishes shall have a pencil hardness of 2H-4H with adhesion substantial enough to withstand both direct and reverse impacts of 160 inch pounds. Finish shall have excellent mar resistance and be capable of withstanding scuffing, marring and other ordinary wear.

## 3. Reparability

Finish shall be capable of surface repair in the event that a fixture is scratched or a surface rupture occurs. The service fixture manufacturer shall have available an air-drying aerosol coating, specially formulated to match the existing epoxy coating color, which may be applied in the field to repair coated surfaces.

## III. Water Faucets

A. All faucets for water service shall have a renewable unit containing all working components subject to wear, including a stainless steel replaceable seat and an integral adjustable volume control (designated by the suffix "AC"). The renewable unit shall be interchangeable among all faucets and valves for water service. The renewable unit shall be broached for position locking in the valve body. The unit shall have a high durometer thermoplastic valve disc and a molded TFE stem packing. The unit shall be capable of being readily converted from compression to self-closing, and vice versa, without disturbing the faucet body.

B. Goosenecks shall have a separate outlet coupling with a 3/8" IPS female thread securely brazed to the gooseneck for attachment of serrated hose ends, aspirators and other outlet fittings. Rigid goosenecks shall have a 3/8" IPS male inlet thread and be threaded directly into the faucet body so as to be absolutely rigid. Swing goosenecks shall utilize a TFE packing with an externally adjustable packing nut.

C. All fixtures for water service shall meet the requirements of ANSI/ASME A112.18.1M-1989 and be certified by the Canadian Standards Association (CSA) under Standard CAN/CSA B.125.M89.

D. Water faucets and valves shall be fully assembled and individually tested at 80 pounds per square inch (PSI) water pressure.

## IV. Safety Equipment

### A. General

1. Provide emergency eyewash and drench hose units with spray-type outlet heads to deliver a soft, wide, high volume spray of water. Outlet heads shall have an internal self-regulating flow control, a reticulated polyurethane filter, a threaded spray cover and a hinged swing-away dust cover. Hinged cover shall be permanently attached to outlet head body with a stainless steel pin. All wearing components shall be located inside spray head for ease of service.

2. All emergency eye wash and shower equipment should comply with ANSI Z358.1-1990.

**B. Dual Purpose Eye Wash/Drench Hose Units\***

Deck mounted eye wash/drench hose units shall be capable of use as a fixed eye wash with hands-free operation or as a drench hose. Units shall have two Gentle Spray outlet heads mounted parallel and angled forward, each with a self-regulating volume control, reticulated polyurethane filter and removable spray cover. Dust covers shall be hinged swing-away style and shall be permanently attached to the spray head with a stainless steel pin. The valve shall be self-closing type with a stainless steel squeeze handle and a locking clip to hold the valve open once activated. Units shall be furnished with a deck flange with locator guide to hold the unit facing forward and an 8 ft. reinforced PVC hose.

**APPLICABLE CODES & STANDARDS**

- a. SEFA 3 – Scientific Equipment and Furniture Association
- b. SEFA 8 - Scientific Equipment and Furniture Association
- c. NFPA 30 - National Fire Protection Association
- d. NFPA-45 - National Fire Protection Association
- e. UL - Underwriters Laboratories
- f. ASTM D552 – Bending Test



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## **CHAPTER-02**

# **FUMEHOOD SPECIFICATIONS**

## DESCRIPTION OF WORK

### 1.00 SUMMARY AND SCOPE

- A. Section Includes:  
Furnish and install all fume hoods, work tops, and understructures as shown on drawings.
- B. Accessorization:  
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 at the factory.
- C. Removal of all debris, dirt and rubbish accumulated as a result of the installation of the fume hoods to an on-site container provided by others, leaving the premises clean and orderly.

### 1.02 STANDARD FUME HOOD PERFORMANCE REQUIREMENTS

- A. Fume hoods shall be of complete airfoil design to insure maximum operating efficiency. Foil sections at the front facias of the hood shall minimize eddyding of air currents at the hood face and the rear baffle system shall minimize turbulence in the upper portion of the hood interior.
- B. Standard Fume Hood Type Variable Air Volume:  
The fume hoods shall be of the variable air volume type in which the exhaust air volume varies proportionally to the hood opening when used with a hood face velocity controller system. The air bypass shall be RESTRICTED AS PER THE VAV Manufacturer's recommendation.

### 2.01 MATERIALS AND CONSTRUCTION

- A. **Fume Hood Superstructure Frame:**  
A free-standing rigid frame 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 4" 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 fascia section shall have a full 135 degree 1" radius at the front leading edge to provide a streamlined section and insure smooth even flow of air into the hood. The vertical facias shall contain the required service controls, electrical switches and receptacles. The hood interior end panels and sash track shall be flush with the fascia 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 1" 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 1" opening. The foil shall be removable to allow large equipment into the hood. The foil shall be of 12-gauge 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 1" opening between the bottom of the sash and the floor.

**D. Fume Hood Top Panel:**

Restricted Bypass Configuration:

The top front panel shall be of the same material as the exterior fascia.

**E. 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 2-1/4" from the back liner. The baffle shall be removable for cleaning

**F. Fume Hood Duct Collar :**

A 12" diameter polyethylene bell-mouthed duct collar shall be located in the top of the hood plenum chamber. Coated common steel duct collars are not acceptable

**G. Fume Hood Lighting:**

A one-tube, energy-efficient, T-5 fluorescent light fixture of the size given below shall be provided in the hood roof. Illumination at 13" above the worksurface shall be at least 100 foot-candles.

Hood Size, Ft.	Nominal Fixture Length, Ft.
6	4

The light fixtures shall be isolated from the hood interior by a 1/4" thick tempered glass panel sealed from the hood cavity.

**H. Fume Hood Sash:**

**Combination Sash:**

A combination sash shall be provided. The sash shall have horizontal sliding glass panels in 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 1/4" laminated safety float glass mounted on metal rollers in an aluminum track.

**I. Fume Hood Plumbing Service:**

Utility services like **Nitrogen, Vacuum, Compressed Air and Raw water** 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, with color coded plastic handles. Interior fitting for gases and water shall be nylon panel flanges and angle serrated hose connectors, color coded. Interior fittings for distilled water shall consist of a bronze tin lined, white color-coded, panel flange and angle serrated hose connector. Interior fittings for steam shall consist of a cast bronze flange and angle serrated hose connector with a chemical resistant metallic bronze finish. Water goosenecks shall be cast bronze with a chemical resistant metallic bronze finish. All plumbing fittings shall be factory installed and piped between the valve and the outlet. Inlet piping shall have a single-point connection for each valve provided and carried to a point 1" above the fume hood roof. Points of final service connection by other trades shall be at the stub provided by the fume hood manufacturer.

**J. Fume Hood Electrical Service:**

The hood superstructure shall be pre-wired and contain wire gauge, connections, fixtures and wire color coding. Wiring electrical services shall consist of two duplex receptacles and a light switch. 4 nos of 5/15 Amps (Make: North West), 230 Volt AC, and 3-wire polarized grounded with ground fault interruption. The receptacles shall be of specification grade, side wired only, to insure a positive connection. The light switch shall be 5

Amps. 230 volt AC and 3-wire polarized grounded. Wiring shall terminate in one 6" x 6" x 4" service junction box located on the fume hood roof

**K. Hood Work Surface:**

**Black Granite:**

Hood worksurface shall be 1-1/4" thick jet black granite made in the form of a watertight pan, not less than 3/8" deep to contain spillage with a 8" & 6" wide safety ledge across the front edge. A cup drain flush with the recessed worksurface shall be provided. The worksurface and cup drain shall be available in black.

**L. Polyethylene Cup Sinks:**

Molded 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 a 1-1/2" I.P.S. male straight thread outlet.

**M. 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.

**N. Fume Hood Finish:**

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.

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, insuring that no area be 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.

The completed finish system in standard colors shall meet the performance test requirements specified under PERFORMANCE TEST RESULTS.

**O. Fire Extinguisher**

The model 1120 Automatic Dry Chemical fire extinguisher, being activated by a melting metal tank plug (fusible link), needs no electrical hookup of any kind. In a hood fire of over 160 degrees F, the Wood's metal tank plug melts, activating the pressurized tank valve which sprays the dry fire retardant all over the hood interior, coating all surfaces and denying these surfaces an oxygen supply.

**P. Performance Test Results (Chemical Spot Tests):**

**a. Testing Procedure:**

Chemical spot tests for non-volatile chemicals shall be made by applying 5 drops of each reagent to the surface to be tested and covering with a 1-1/4" dia. watch glass, convex side down to confine the reagent. Spot tests of volatile chemicals shall be tested by placing a cotton ball saturated with reagent on the surface to be tested and covering with an inverted 2-ounce wide mouth bottle to retard evaporation. All spot tests shall be conducted in such a manner that the test surface is kept wet throughout the entire test period, and at a temperature of 77° ±3° F. For both methods, leave the reagents on the panel for a period of one hour. At the end of the test period, the reagents shall be flushed from the surface with water, and the surface scrubbed with a soft bristle brush under running water, rinsed and dried. Volatile solvent test areas shall be cleaned with a cotton swab soaked in the solvent used on the test area. Immediately prior to evaluation, 16 to 24 hours after the reagents are removed, the test surface shall be scrubbed with a damp paper towel and dried with paper towels.

**b. Test Evaluation:**

Evaluation shall be based on the following rating system.

Level 0 – No detectable change.

Level 1 – Slight change in color or gloss.

Level 2 – Slight surface etching or severe staining.

Level 3 – Pitting, cratering, swelling, or erosion of coating. Obvious and significant deterioration.

**After testing, panel shall show no more than three (3) Level 3 conditions.**

**c. Test Reagents**

Test No.	Chemical Reagent	Test Method
1.	Acetate, Amyl	Cotton ball & bottle
2.	Acetate, Ethyl	Cotton ball & bottle
3.	Acetic Acid, 98%	Watch glass
4.	Acetone	Cotton ball & bottle
5.	Acid Dichromate, 5%	Watch glass
6.	Alcohol, Butyl	Cotton ball & bottle
7.	Alcohol, Ethyl	Cotton ball & bottle
8.	Alcohol, Methyl	Cotton ball & bottle
9.	Ammonium Hydroxide, 28%	Watch glass
10.	Benzene	Cotton ball & bottle
11.	Carbon Tetrachloride	Cotton ball & bottle
12.	Chloroform	Cotton ball & bottle
13.	Chromic Acid, 60%	Watch glass
14.	Cresol	Cotton ball & bottle
15.	Dichlor Acetic Acid	Cotton ball & bottle
16.	Dimethylformamide	Cotton ball & bottle
17.	Dioxane	Cotton ball & bottle
18.	Ethyl Ether	Cotton ball & bottle
19.	Formaldehyde, 37%	Cotton ball & bottle
20.	Formic Acid, 90%	Watch glass
21.	Furfural	Cotton ball & bottle
22.	Gasoline	Cotton ball & bottle
23.	Hydrochloric Acid, 37%	Watch glass
24.	Hydrofluoric Acid, 48%	Watch glass
25.	Hydrogen Peroxide, 3%	Watch glass
26.	Iodine, Tincture of	Watch glass
27.	Methyl Ethyl Ketone	Cotton ball & bottle
28.	Methylene Chloride	Cotton ball & bottle
29.	Mono Chlorobenzene	Cotton ball & bottle
30.	Naphthalene	Cotton ball & bottle
31.	Nitric Acid, 20%	Watch glass
32.	Nitric Acid, 30%	Watch glass
33.	Nitric Acid, 70%	Watch glass
34.	Phenol, 90%	Cotton ball & bottle
35.	Phosphoric Acid, 85%	Watch glass
36.	Silver Nitrate, Saturated	Watch glass

37.	Sodium Hydroxide, 10%	Watch glass
38.	Sodium Hydroxide, 20%	Watch glass
39.	Sodium Hydroxide, 40%	Watch glass
40.	Sodium Hydroxide, Flake	Watch glass
41.	Sodium Sulfide, Saturated	Watch glass
42.	Sulfuric Acid, 33%	Watch glass
43.	Sulfuric Acid, 77%	Watch glass
44.	Sulfuric Acid, 96%	Watch glass
45.	Sulfuric Acid, 77% and Nitric Acid, 70%, equal parts	Watch glass
46.	Toluene	Cotton ball & bottle
47.	Trichloroethylene	Cotton ball & bottle
48.	Xylene	Cotton ball & bottle
49.	Zinc Chloride, Saturated	Watch glass

\* Where concentrations are indicated, percentages are by weight.

**Q. Performance Test Results (Heat Resistance):**

Hot water (190° F - 205° F) shall be allowed to trickle (with a steady stream at a rate not less than 6 ounces per minute) on the finished surface, which shall be set at an angle of 45° from horizontal, for a period of five minutes. After cooling and wiping dry, the finish shall show no visible effect from the hot water treatment.

**R. Performance Test Results (Impact Resistance):**

A one-pound ball (approximately 2" diameter) shall be dropped from a distance of 12 inches onto the finished surface of steel panel supported underneath by a solid surface. There shall be no evidence of cracks or checks in the finish due to impact upon close eye-ball examination.

**S. Performance Test Results (Bending Test):**

An 18 gauge steel strip, finished as specified, when bent 180° over a 1/2" diameter mandrel, shall show no peeling or flaking off of the finish.

**T. Performance Test Results (Adhesion):**

Ninety or more squares of the test sample shall remain coated after the scratch adhesion test. Two sets of eleven parallel lines 1/16" apart shall be cut with a razor blade to intersect at right angle thus forming a grid of 100 squares. The cuts shall be made just deep enough to go through the coating, but not into the substrate. They shall then be brushed lightly with a soft brush. Examine under 100 foot-candles of illumination. Note: This test is based on ASTM D2197-68, "Standard Method of Test for Adhesion of Organic Coatings".

**U. Performance Test Results (Hardness):**

The test sample shall have a hardness of 4-H using the pencil hardness test. Pencils, regardless of their brand are valued in this way: 8-H is the hardest, and next in order of diminishing hardness are 7-H, 6-H, 5-H, 4-H, 3-H, 2-H, F, HB, B (soft), 2-B, 3-B, 4-B, 5-B (which is the softest).

The pencils shall be sharpened on emery paper to a wide sharp edge. Pencils of increasing hardness shall be pushed across the paint film in a chisel-like manner until one is found that will cut or scratch the film. The pencil used before that one—that is, the hardest pencil that will not rupture the film—is then used to express or designate the hardness.

**V. Fume Hood Dimensions**

Double wall end panel thickness shall not exceed 4". Interior clear working height shall be not less than 41-3/4" at any location in the interior of the hood on bench hoods and 76" on walk-in and distillation hoods. Interior depth from the back of the sash to the front of the rear baffle shall not be less than 25-1/4". The sash opening shall be not less than 28" in height above the worksurface on bench hoods and 60" on walk-in and distillation hoods.

**W. Fume Hood Liners :**

Interior liner panels shall be 1/4" thick fiberglass reinforced polyester sheet. Interior liner panels shall be fastened using stainless steel screws with plastic covered heads.

**Q. Liner Tests – Chemical Spot Tests – 24 Hours**

1. Chemical spot test shall be made by applying 10 drops (approximately 1/2 cc) of each reagent to the surface to be tested. Each reagent (except those marked \*\*) shall be covered with a 1-1/2" diameter watch glass, convex side down to confine the reagent. Spot tests of volatile solvents marked \*\* shall be tested as follows: A 1" or larger ball of cotton shall be saturated with the solvent and placed on the surfaces to be tested. The cotton ball shall then be covered by an inverted 2-ounce, wide mouth bottle to retard evaporation. All spot tests shall be conducted in such a manner that the test surface is kept wet throughout the entire 24-hour test period and at a temperature of 77 degrees F.  $\pm$  3 degrees F.
2. At the end of the test period, the reagents shall be flushed from the surfaces with water and the surface scrubbed with a soft bristle brush under running water, rinsed, and dried. Volatile solvent test areas shall be cleaned with a cotton swab soaked in the solvent used on the test area. Spots where dyes

have dried shall be cleaned with a cotton swab soaked in alcohol to remove the surface dye. The test panel shall then be evaluated immediately after drying.

RESULTS:	1	2	3	4	5
1. Acetic Acid 98%	A	B	B	B	A
2. Acetone **	A	D	A	A	A
3. Acid Dichromate	A	A	A	A	A
4. Ammonium Hydroxide ** 28%	A	A	B	B	A
5. Amyl Acetate **	A	A	A	A	A
6. Benzene **	A	A	A	A	A
7. Butyl Alcohol **	A	A	A	A	A
8. Carbon Tetrachloride **	A	A	A	A	A
9. Chloroform **	A	D	A	A	A
10. Chromic Acid 60%	B	B	C	C	A
11. Cresol	A	A	A	A	A
12. Dichloroacetic Acid	A	D	B	A	A
13. Dimethylformamide	A	A	A	A	A
14. Dioxane **	A	A	A	A	A
15. Ethyl Acetate **	A	A	A	A	A
16. Ethyl Ether **	A	A	A	A	A
17. Ethyl Alcohol **	A	A	A	A	A
18. Formaldehyde	A	A	A	A	A
19. Formic Acid 90%	A	A	A	A	A
20. Furfural **	B	B	A	A	C
21. Gasoline **	A	A	A	A	A
22. Hydrochloric Acid 37%	A	A	B	B	A
23. Hydrofluoric Acid 48%	B	D	D	D	A
24. Hydrogen Peroxide 30%	A	A	A	A	A
25. Methyl Ethyl Ketone **	A	A	A	A	A
26. Methyl Alcohol **	A	A	A	A	A
27. Methylene Chloride **	A	D	A	A	A
28. Monochlorobenzene **	A	A	A	A	A
29. Naphthalene **	A	A	A	A	A
30. Nitric Acid 20%	B	A	B	A	A
31. Nitric Acid 30%	B	A	B	A	A
32. Nitric Acid 70%	B	D	B	A	A
33. Phenol ** 85%	A	C	A	A	A
34. Phosphoric Acid 85%	A	A	B	A	A
35. Silver Nitrate	B	C	A	A	C
36. Sodium Hydroxide 40%	A	D	A	A	A

37. Sodium Hydroxide 20%	A	D	A	A	A
38. Sodium Hydroxide 10%	A	D	A	A	A
39. Sodium Hydroxide Flake	A	B	A	A	A
40. Sodium Sulfide	A	B	A	A	A
41. Sulfuric Acid 77%	A	A	C	A	A
42. Sulfuric Acid 96%	C	D	C	A	C
43. Sulfuric Acid 33%	A	A	C	A	A
44. Tincture of Iodine	A	C	B	B	A
45. Toluene **	A	A	A	A	A
46. Trichlorethylene **	A	A	A	A	A
47. Xylene **	A	A	A	A	A
48. Zinc Chloride	A	A	B	A	A
49. Nitric 70%/Sulfuric Acid 77%*	B	B	B	A	A

\* Equal parts of Nitric Acid 70% and Sulfuric Acid 77%.

\*\* Indicates these solvents tested with cotton and jar method

#### S. Fume Hood Base Cabinets

##### 1. Standard Steel

- a. Unless otherwise indicated base units under hoods shall be fabricated of cold rolled prime grade roller leveled furniture steel. Gauges of steel used in construction shall be 18 gauge except as follows:
- b. Corner gussets for leveling bolts and apron corner braces, 12 gauge.
- c. Hinge reinforcements, 14 gauge.
- d. Top and intermediate front horizontal rails, apron rails and reinforcement gussets, 16 gauge.
- e. Door assemblies and adjustable shelves, 20 gauge.
- f. Performance of the painted surfaces shall match that of the fume hood outer panels.

#### 2.0 MATERIAL OF CONSTRUCTION

Fume Hood superstructure	: 18 gauge CRC Sheets, Electrode position Powder coated 80-100 micron
Table top	: 32 mm Jet Black Granite Table top
Electrical sockets	: PVC
Gas fixtures	: Brass Lacquer Coated
Internal piping	: SS304
Vacuum Fixtures	: Brass Lacquer Coated
Water fixtures	: Brass Lacquer Coated
Electrical cables	: Copper wire with PVC Sheath

### **3.0 APPLICABLE CODES & STANDARDS:**

ASHRAE Standard 110.1995	- Method of Testing Performance of Laboratory Fume Hoods
NSF STD#49	- Photometric Method of Testing
NIH03-112C	- National Institute of Health Specification
UL	- Underwriters Laboratories
ASTM D552	- Bending Test
NFPA-45	- National Fire Protection Association

**Note: VENDOR MUST HAVE ASHRAE TESTING FACILITY AT MANUFACTURING PLANT & ABLE TO CONDUCT THE SAME IN THE SITE.**



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## **CHAPTER-03**

# **EXHAUST SYSTEM SPECIFICATIONS**

## **SPECIFICATIONS FOR PP/FRP DUCTING AND ACCESSORIES**

### **Technical Specification for PP/FRP Ducting:**

- a. PP means PPGL: One side smooth & glossy finish and other end is mat finish.  
The smooth surface should be the inner surface of the duct. On mat side, FRP lining to be done.
- b. FRP Lining to be done on the outer surface of PPGL I.e. on mat side.  
One layer FRP is one mm.  
The final layer should be with fine mat to have smooth and good finish.
- c. Isothyllic resin to be used. (Fire resistant 20 Seconds).
- d. All the flanges should be properly ground and dressed.
- e. Duct support distance should not be more than 2500 mm.
- f. Any duct length should not be more than 3600 mm.
- g. The finish paint should be admiral grey unless specified.
- h. 5 mm Thick Neoprene gasket to be used between the flanges.

### **Support System**

A completely supporting system consisting of fully threaded rods, double L bottom brackets nuts, Washers, clamps for circular ducts and anchor bolts as supplied.

To provide the required thermal brake effect, Neoprene or equivalent material of suitable thickness shall be used between duct joints.

### **Installation**

#### **Tools and tackles for site work:**

For duct assembly and Installation the use of suitable tools and tackles should be used to give the required duct quality and speed of installation including.

- a) Drilling machine with drill bits – for drilling holes on the PP/FRP flanges.
- b) Hammer drill machine with drill bits – for drilling holes in building structure for anchors.
- c) Hoisting system – for lifting the duct assembly up to mounting heights.

#### **Installation Practice**

- a. All necessary allowances and provision shall be made for beams, pipes, or other obstructions in the building whether or not the same are shown on the drawings. Where there is interference/ fouling with other beams, structural work, plumbing and conduits, the ducts shall be modified suitably as per actual site conditions.
- b. Ducting over false ceiling shall be supported from the slab or from beams. In no case shall any duct be supported from false ceilings hangers or be permitted to rest on false ceiling. All Sheet work in dead or furred down spaces shall be erected in time to occasion no delay to other contractor's work in the building.

- c. All ducts shall be totally free from vibration under all conditions of operation. Whenever ductwork is connected to fans that may cause vibration in the ducts, ducts shall be provided with a flexible connection, located at the unit discharge.

### **Dampers and Flexible Hose**

#### **General**

Volume control damper sets shall be provided where specified according to the specifications in the offer BOQ. Dampers shall be double thickness heavier than the thickness of the large duct & shall be rigid in construction.

The volume control dampers shall be of an approved type , lever operated & complete with locking devices which will permit the dampers to be adjusted & locked in any positions.

Construct blades of 3 mm thick PP MOC, provide heavy-duty molded self-lubricating nylon bearings, 13mm (1/2") diameter Plastic axles spaced on 225mm (9") centers. Construct frame of 300 mm diameter outer with Flange for fitting minimum 6 bolts and nuts. The outer shell body shall be a transparent material of Poly propylene.

Automatic manual volume opposed blade shall be not over 225mm wide. The dampers for fresh air inlet shall additionally provide with fly mesh screen, on the outside of 0.8mm thickness with fine mesh.

#### **Manually Adjustable Damper Sets**

Damper sets shall be arranged in substantial supporting frames and each blade shall be mounted on a shaft, which turns in sintered bronze bearings. All damper blades shall be inter-connected by means of a suitable bar linkage for ganged operation. All dampers shall be arranged with spindle horizontal and shall be sized to handle the air quantities shown on the drawings. Where manually adjustable damper sets are installed in ductwork or other accessible locations the operating shafts shall be extended through the duct and a lockable quadrant fitted.

#### **Bird screens**

Galvanized woven mesh or weld mesh bird screens in rigid galvanized iron frames shall be installed behind all Bypass exhaust air openings to the outside of the building.

#### **Flexible Connections**

Provide flexible duct connections wherever ductwork connects to vibration isolated equipment and on all exhaust final connections to spot extractor and as indicated on the drawings.

Flexible connections shall be fitted to isolate fans from equipments and/or ductwork. The connections shall be arranged to permit the renewal of the connection without disturbing the duct work or the plant. The metal parts of connected equipment shall be separated by not less than six inches and installed with sufficient slack to compensate for free movement of fans or spring vibration isolators.

**Joint Measurements:**

The following procedure for measurement shall be followed for the purpose of billing in case of items subject to variation in quantities.

**Ducting:**

Payment for ducting shall be on the basis of the external surface area of the ducting. The rate per square meter of the external surface shall include flanges, gaskets for joints, bolts and nuts, duct supports and hangers, vibration isolation pads or suspenders, flexible connections, inspection doors, dampers, turning vanes, straightening vanes, and any other item which will be required to complete the duct installation except external insulation and finish thereon.

The external area shall be calculated by measuring the over-all width and depth (including the corner joints) in the centre of the duct section and over-all length of each duct section from flange face to flange face in case of duct lengths with uniform cross section.

Total area will be arrived at by adding up the areas of all duct sections.

In case of taper pieces average width and depth will be worked out as follows:

- W1 = Width of small cross section
- W2 = Width of large cross section
- D1 = Depth of small cross section
- D2 = Depth of large cross section

$$\text{Average Width} = (W1 + W2)/2$$

$$\text{Average Depth} = (D1 + D2)/2$$

Width and depth in the case of taper pieces shall be measured at the edge of the collar of the flange for duct/sections. Face to face length for taper piece shall be the mean of the lengths measured face to face from the centre of width and depth flanges.

For special pieces like bends, branches, and tees, etc., the same principle of area measurement as for linear lengths shall be adopted, except for bends and elbows, the length of which shall be the average of the lengths of inner and outer periphery along with curvature of angle of the piece.

Duct measurements for calculation of area shall be taken before application of insulation.

### **MEDIUM PRESSURE CENTRIFUGAL BLOWERS:**

#### **Area of application**

Moist, aggressive or corrosive gas mixtures can be transported without problems using fans made of plastic. This means that they are suitable for many applications, including ones in the process control area. All fans shall be suitable for left or right-handed use and shall be mounted in the 6 Euro vent discharge positions.

The process air comes in contact exclusively with thermoplastics: in this way completely corrosion resistant operation is guaranteed. The smooth, non-porous surfaces prevent the formation of deposits and guarantee high operational reliability and low maintenance costs.

Concept an extremely low number of components ensure efficient manufacture: Casing, impeller, back, support and drive are matched to each other and fulfilling no superfluous functions, thus form a compact unit.

#### **Materials of Construction**

All impellers with 20 forwards-curved, radial-ended blades are injection-molded in fire-resistant polypropylene (PPs, PPs-el) and are especially quiet-running. For the seamless, deep-drawn casing halves polypropylene (PP), fire-resistant polypropylene (PPs, PPs-el) and polyvinyl chloride (PVC) are employed. For outdoor applications, UV-proof polyethylene (PE) is especially to be recommended.

The series production of impellers and casing in polyvinylidene fluoride (PVDF) also permits use in chemically and thermally extreme applications. PPs, PVC and PVDF satisfy the requirements for the fire-resistance class B1 according to DIN 4102 standards.

The high-grade steel support made of material no.1.4301 is standard and particularly corrosion resistant.

## **Accessories**

Apart from the usual accessories like elastic sleeves with non-rusting fixing bands, vibration dampers for avoiding the transmission of mechanical vibration and drain-offs for condensate for operation in humid environments, standardized wall-brackets, splinter protection for personal safety and motor coverings for outdoor applications are also available.

Hub seals with V-rings are used for case-overpressure applications and impellers with additional back blades also allow operation in wet environments.

The torque transmission is achieved by an aluminum hub which is corrosion resistant and covered with plastic. The impeller is fixed on to a flange bearing.

Support Frame Sturdy sheet-metal construction in stainless steel 1.4301

Direct Drive: Load transmission from motor to impeller by means of direct mounting the impeller on the motor shaft.

Hub Seal Standard hub seals or optional hub seals are available for special applications.

## **SPECIFICATIONS FOR MOTOR AND ACCESSORIES**

Use an electric motors built to IEC standards foot mounted (B5), also in ex-protected or multistage versions, for the drive. The impeller hub is coated with aluminum. Power transmission from motor to impeller by means of an impeller directly fixing on the motor shaft in direct driven application. The impeller is fixed on to a flange bearing and the tightening adopter system guarantees secure mechanical connection.

Motor Standard IEC three-phase motors in accordance with IEC.Mounting B5.

Available in motor-mounted (IP55) or cabinet-mounted versions.

The fan shall be driven by a standard TEFC electric motor with class 'F' insulation and class 'B' temperature rise. Motor shall be suitable for outdoor installation with IP55 protection and suitable for operation with 415V/3Ph/50Hz electrical supply. Motor supplied shall be in accordance to IEC standards.

## **2. Test run and commissioning**

### **Preparation of the test run**

Check, whether inlet and outlet are connected to ducts or protected by a protection grid. Check mechanical and electrical safety devices; make sure, they are properly installed. Remove foreign bodies, which still might be in the housing or ducts.

### **Test run and commissioning**

Check the rotation of the impeller by means of a quick switch on/off of the motor; it must run in the direction as shown on the arrow. In case of wrong direction, change the connection of the wires.

To protect the motors against overload, the fans shall never be operated with open Inlet or outlet. For test runs, the inlet has to be covered with a suitable plate.

The current (Amps) as indicated on the motor data plate shall never exceed. The fan has to be checked for its' smooth running.

### **BLOWER STARTER/Push Button.**

Blower starter (push button) to be located in the Fumehood front for ON/OFF control of Blower.

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Gurgaon

## Bill Of Quantities

SL.	CODE	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
					INR	INR
		<b>Fumehood Cabinet &amp; Accessories</b>				
1	FH	<p><b>Fabrication, Supply, &amp; Installation of Fumehood (Overall Size 1524(L)x908(D)x2280(H)). Consists of Base cabinets with vent hole for exhaust &amp; front louvers, 6/16A sockets 3+3 nos; DB on the top of the Fumehood with MCB's for each socket; FRLS wiring; Normal fluorescent light inside &amp; light switch on the Fumehood fascia, Raw Water, Nitrogen, Compressed Air and Vacuum valves with SS304 internal piping until 150mm above False ceiling, Lattice assembly, Cupsink, Granite worktop, Ceiling cover with access door &amp; filler panel etc. Exhaust system for Fumehood, consists of PP Centrifugal Blower with motor with minimum 700 CFM capacity, PP/FRP ducting upto nearest opening, Manual damper, Flexible hose, Starter for Blower On/Off etc Enclosed specification &amp; drawings and design complete in all respect as per instruction of Engineer-in Charge.</b></p>	Set	6		
		<b>ISLAND BENCH-01</b>				
2	IB-01	<p><b>Fabrication, Supply &amp; Installation of Island table, Overall Size 928H x 1524D x 4597L. Consist of under bench modules with 2 Drawer Cabinets (4 Nos.), Free Knee space(8 Nos.) and with End unit having 1 Door and 1 Drawer Cabinets (2 Nos.), 1 No Free Knee Space. 12 Nos. of Electrical power points for all type of sockets with switch (6/16A) fixed in Metal Electrical Box &amp; mounted on the worktop. Upright mounted Height adjustable metal shelves (381mm D x 1220mm L(12 Nos.), Upright mounted Wall Unit with Sliding Glazed Panel(6 Nos.). 1 No. of Service Dropper / Enclosure (Size: 304Lx152mmD and Height upto False Ceiling) mounted in the bench to take services. 20mm thick Granite worktop. Storage cabinets are with Locks, Handles etc. Including all hardware arrangements and support structure of frames, cabinets/shelves to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification &amp; drawings and design complete in all respect as per instruction of Engineer-in Charge.</b></p>	Set	54		
		<b>ISLAND BENCH-02</b>				

3	IB-02	<p><b>Fabrication, Supply &amp; Installation of Island table, Overall Size 928H x 1524D x 4597L. Consist of under bench modules with 2 Drawer Cabinets (4 Nos.), Free Knee space(8 Nos.) and with End unit having PP Sink of Size: 711Lx468Dx245Hmm &amp; Bowl Size: 651Lx406Dx245Hmm, Raw water Faucet and Twin Head Eyewash. 12 Nos. of Electrical power points for all type of sockets with switch (6/16A) fixed in Metal Electrical Box &amp; mounted on the worktop. Upright mounted height adjustable metal shelves (381mm D x 1220mm L(12 Nos.), Upright mounted Wall Unit with Sliding Glazed Panel(6 Nos.). 1 No. of Service Dropper / Enclosure (Size: 304Lx152mmD and Height upto False Ceiling) mounted in the bench to take services. 20mm thick Granite worktop. Storage cabinets are with Locks, Handles etc. Including all hardware arrangements and support structure of frames, cabinets/shelves to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification &amp; drawings and design complete in all respect as per instruction of Engineer-in Charge.</b></p>	Set	36		
		<b>WALL BENCH-01</b>				
4	WB-01	<p><b>Fabrication, Supply &amp; Installation of Wall table, Overall Size 782H x 762D x 2057L, Consist of 3 Nos. of Leg Space / Knee Space supported using End legs. 6 Nos. of Electrical power points for all type of sockets with switch (6/16A) &amp; 3 nos. of Data Sockets fixed in Metal Electrical Box &amp; mounted on the worktop. Acrylic Glass partition of size: 304H x 686L mounted between every two Knee space. 1 No. of Service Dropper / Enclosure (Size: 102Lx102mmD and Height upto False Ceiling) mounted in the bench to take services. 20mm thick Granite worktop. All hardware arrangements and support structure of frames / Panels to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification &amp; drawings and design complete in all respect as per instruction of Engineer-in Charge.</b></p>	Set	36		
		<b>WALL BENCH-02</b>				

5	WB-02	Fabrication, Supply & Installation of Wall table, Overall Size 782H x 762D x 5994L. Consist of 8 Nos. of Leg Space / Knee Space supported using End legs and 1 no. of Storage cabinet with 1 Door and 1 Drawer. 18 Nos. of Electrical power points for all type of sockets with switch (6/16A) & 9 nos. of Data Sockets fixed in Metal Electrical Box & mounted on the worktop. Acrylic Glass partition of size: 304H x 686L mounted between every two Knee space. 1 No. of Service Dropper / Enclosure (Size: 102Lx102mmD and Height upto False Ceiling) mounted in the bench to take services. 20mm thick Granite worktop. All hardware arrangements and support structure of frames / Panels to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification & drawings and design complete in all respect as per instruction of Engineer-in Charge.	Set	18		
<b>WALL BENCH-03 (SCIENTIST CHAMBER)</b>						
6	WB-03	Fabrication, supply & Installation of Wall table, Overall Size 762H x 900D x 1448L & 762H x 610D x 1830L, Consist of under bench modules with 1No. Storage Cabinet having 1No. Door and 1No. Drawer(457mm Length), 1No. Storage Cabinet with 3Nos. Drawers (457mm Length), 686mm Knee space / Leg Space & other table having fixed sheet at bottom to keep CPU & act as a foot rest. Rear Table (Size: 762H x 457D x 2160mmL) without Storage below. 20mm thick Laminated work top and 100mm H skirting along the wall to both the tables. Storage cabinets are with lock, handles etc. including all hardware arrangements and support structure of frames, cabinets to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification & drawings and design complete in all respect as per instruction of Engineer-in Charge.	Set	18		
<b>WALL BENCH-04</b>						
7	WB-04	Fabrication, Supply & Installation of Wall table, Overall Size 782H x 900D x 1880L. Consist of 1 No. of Leg Space / Knee Space, 2 nos. of Storage cabinet with 1 Door and 1 Drawer. 6 Nos. of Electrical power points for all type of sockets with switch (6/16A) & 1 no. of Data Sockets fixed in Metal Electrical Box & mounted on the worktop. 20mm thick Granite worktop. All hardware arrangements and support structure of frames / Panels, Cabinets to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification & drawings and design complete in all respect as per instruction of Engineer-in Charge.	Set	18		
<b>WALL CABINET-01</b>						

8	WU-01	Fabrication, Supply & Installation of Wall Cabinet with Panel Door, Overall Size 762H x 406D x 5790L. All hardware arrangements and Units to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification & drawings and design complete in all respect as per instruction of Engineer-in Charge.	Set	18		
		<b>TALL STORAGE UNIT-01</b>				
9	TU-01	Fabrication, Supply & Installation of Tall Storage Cabinet with Panel Door, Overall Size 2134H x 406D x 1219mmL and with Wall Cabinet (914H x 406D x 1219mmL) mounted above the Tall Storage Unit and with front panel upto False Ceiling (3200mm) .All hardware arrangements and Units to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification & drawings and design complete in all respect as per instruction of Engineer-in Charge.	Set	36		
		<b>TALL STORAGE UNIT-02</b>				
10	TU-02	Fabrication, Supply & Installation of Tall Storage Cabinet with Sliding Glazed Door, Overall Size 2134H x 560D x 914mmL. All hardware arrangements and Units to be made of powder coated cold rolled steel sheets in approved colour and thickness as per enclosed specification & drawings and design complete in all respect as per instruction of Engineer-in Charge.	Set	18		
		<b>TOTAL OF ANNEXURE</b>				
		TOTAL IN WORDS				