



Government of India  
Bhabha Atomic Research Centre  
Uranium Extraction Division

Ref: UED/PI.13/2018/170530

Date: Sept 04, 2018

**Tender No. BARC/UED/VHR/18088**

**Due date: 24/09/2018**

**Sub: Design, drawing, fabrication, supply installation, and guarantee of storage setup with associated fitting & internal isolation for chemical storage and analytical instruments for R&D Laboratory at UMRT, UED as per Annexure-1**

Dear Sir/Madam,

Quotations are invited in sealed envelopes, on behalf of Associate Director Materials Group for Design, drawing, fabrication, supply installation, and guarantee of Ventilated Chemical Storage Setup for R&D Laboratory at UMRT, UED as per Annexure-1

**1. SCOPE OF WORK**

Design, drawing, fabrication, supply installation, and guarantee of Ventilated Chemical Storage Setup for R&D Laboratory at UMRT, UED as per Annexure-

**STANDARDS**

The manufacture, identification of material and testing of the equipment covered in this specification shall comply with the latest editions of the relevant Bureau of Indian Standards, ASTM, European standards.

**2. INSPECTION AND TESTING**

- 1) The Supplier shall carry out any change or modifications, if required, after inspection of the test report and final drawing, as pointed out by the purchaser at no extra cost. The Supplier shall dispatch the equipment only after obtaining clearance from the purchaser. However, the purchaser's inspection and certification does not absolve the supplier of his responsibilities towards the satisfactory operation and the guarantee/warranty of the items mentioned in Annexure-A. The purchaser representative shall be given full access to the shop in which the equipment is being manufactured or tested, if required by the purchaser, at any time during fabrication till dispatch. The purchaser shall be notified well in advance of the fabrication and major tests for the purpose of general inspection and witnessing the tests, if required by the purchaser.

- 2) The supplier shall check the dimensions with the approved drawing. The test certificate duly signed and sealed by the supplier must be send along with the dispatch documents.

### **3. TIME OF COMPLETION**

The items should be fabricated, tested, supplied installed and commissioned to UMRT 3<sup>rd</sup> floor, UED, BARC within 90 days from the date of issue of work order.

### **4. DRAWINGS TO BE FURNISHED BY THE CONTRACTOR**

The Contractor has to submit the equipment fabrication drawings and get it approved from UED, BARC before starting the fabrication work.

### **5. SUPPLY OF ITEMS FROM BARC**

No items shall be supplied by BARC and the sole responsibility of procurement of the items rest on the contractor.

### **6. GUARANTEE**

The selected manufacturer must warrant for a period one year from the date of installation, that all products sold under the contract referenced above shall be free from defects in material and workmanship. During this period, the firm shall be bound to meet all warranty obligations with respects to any manufacturing defects and or maintenance.

### **7. SAFETY CLAUSE**

During working in UED site, BARC the vendor should follow the appreciable industrial safety procedure along with BARC safety procedure as per BARC representative and site requirement. Any dispute related to labor of vendor and their safety will be responsibility of vendor/contractor only.

### **8. EXCISE CERTIFICATE**

Excise exemption certificate will be issued to the party by the component authority.

### **9. PAYMENT:**

- 1) No advance payment will be made.
- 2) Full payment will be made by ECS on satisfactory completion of the works.
- 3) Party should submit the bill along with advance stamped receipt.
- 4) Income tax @ 2% will be deducted at source.

### **10. OTHER CONDITIONS**

- 1) The party should mention their PAN Number, VAT Number and Service Tax Number while submitting the quotation. Failing of the same their quotation will become liable to be rejected
- 2) **Quotation should be sent by registered post in sealed envelope addressed to Head, Uranium Extraction Division, BARC, Trombay, Mumbai 400 085.**
- 3) All quotations should be superscripted with (i) the subject, (ii) Tender no, (iii) due date on the top of the envelope.

## 11. CONFIDENTIALITY CLAUSE

- 1) No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as “Proprietary” in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.
- 2) Any contravention of the above-mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.
- 3) The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARCs name for any publicity purpose through any public media like Press, Radio, TV or Internet without the prior written approval of BARC.

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## ANNEXURE – 1

### TECHNICAL SPECIFICATION

#### SCOPE OF WORK

Design, drawing, fabrication, supply installation, and guarantee of storage setup with associated fitting & internal isolation for chemical storage and analytical instruments for R&D Laboratory at UMRT, UED

#### 1.1 SIZE AND QUANTITY:

Sr. No.	Description	Qty
1	Industrial workplace cupboard, Size: 1220mm W x 457mm D x 1830mm H, in 1.5 mm thick GI sheet	2Nos.
2	Industrial workplace cupboard in 1.5mm GI sheet Size: 1680mm W x 450mm D x 2300mm H	1No.
3	Wall type side bench in 40mmx40mmx 3mm (thick) square pipe normal frame with 18mm black granite top and storage cabinet. Size: 1200mm L x 900mm W x 750mm H	1No.
4	Wall type side bench in 30mmx30mmx 3mm (thick) square pipe normal frame, 18mm black granite top and storage cabinet. Size: 1800mm L x 450mm W x 750mm H with high back chair- Size: 28” – 30”W x 28” – 30”D x 43” – 45”H	1Set.
5	Side sink bench <u>with right hand side drain board, and three way SS light swan neck laboratory water tap.</u> SS-316L sink size 560mmLx428mmWx260mmD Bench Size: 1200mmLx900mmWx900mmH	1No.
6	Leak proof ventilated chemical storage complete in <b><u>3mm thick SS-316L sheet</u></b> Size: 1600 mm W x 500mm D x 2200mmH	1No.
7	5HP capacity blower with chemical resistant 5mm thick PP-FRP dueling of 250mm dia.	1Set
8	2HP capacity blower with chemical resistant 5mm thick PP-FRP dueling of 200mm dia. and 10meter 4 inch dia. ducting	1Set
9	Antique gold powder coated aluminium partition including one sliding door. 2500mmLx4000mmH	10m <sup>2</sup>
10	10mm thick glass with diamond polish on all sides of the exposed edges. Size: 1800mm L x 900mm W	4Nos.

## 1.2. MATERIALS:

General requirements: It is the intent of this specification to provide high quality steel items specifically designed for the chemical laboratory environment.

- a) Aluminium: Extruded Aluminium Alloy T-6063 grade of 100mm x 45mm and 2mm thick, antique gold powder coated aluminium section.
- b) Steel:
  - a. **SS-316L grade, 3mm only**
  - b. Galvanized (Zinc coated) steel sheet double skin pass, shall be prime grade **3mm, 2.5mm, 2mm, 1.5mm** rolled leveled, and shall be treated at the mill to be free of scale, ragged edges, deep scratches or other deleterious effects. All raw steel have to be procured from reputed manufacturers.
- c) CRCA sheets corrodes and hence not acceptable

## 1.3. CONSTRUCTION:

### GENERAL:

- 1) Steel items shall be of modern design and shall be constructed in accordance with best practices of the scientific Laboratory Equipment Industry.
- 2) All cabinet bodies shall be of over closing design without knock down construction. Inset construction shall not be used in cabinet construction. The body (Casing) of the cabinets shall be fabricated in combination of **1.5mm, 2mm GI steel sheets to be fully welded.**
- 3) **Item no. 6 should be fabricated in 2mm, 3mm SS-316L only.**
- 4) No knock down or panel construction type of system assembled using rivets, nut bolt, screws etc. shall be allowed
- 5) All shutters and drawer sides to be of half round post formed construction to avoid any sharp edges and easy cleaning.
- 6) All cabinets shall have cleanable smooth interior.

### INDUSTRIAL WORKPLACE CUPBOARDS:

1. Should be fabricated from GI with a robust welded frame and withstand everyday use getting scuffed and knocked. For extra reassurance, each cupboard should have 3 point security lock.
2. Cupboard should have 4 adjustable shelves. Coated in an anti-bacterial, chemical resistant epoxy powder coating proved to be 99.9% effective to protect against MRSA, E-Coli, Moulds and Fungi
3. UDL (uniform distributed load) of 70kg per shelf

### CABINETS:

**Drawer and door pulls:** For item no. 6 handles should be in SS-316L for other epoxy powder coated aluminium pressure die cast handles of minimum 320mm length.

**Bottom compartment of item No. 6 should be of wheel based trolley type.**

**Hinges:** Hettich or Haffle make SS hinges shall be used. It should be self closing type spring loaded with 105° opening. 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” shall be hung on three hinges.

**Locks:** Shall be of reputed makes of multipurpose type for cabinets with shutters and shall be with positive locking arrangement for cabinet with three drawers. Locks shall be of SS Hettich or Haffle make.

**Screw:** All S.S. 316L Visible Screws.

**Shelf Supports:** Shelf support clips shall be powder coated or plated.

**Drawer Slides:** Shall be roller slides of Hettich or Haffle make only and shall be CED coated heavy duty ball bearings.

**Legs:** For item No. 3-4 legs shall be made in one piece frame deep drawn molded in minimum 3mm thick heavy duty 40mmWx40mmH GI with self-adjusting levelers and epoxy powder coated. Legs shall have smooth rounded edges for good aesthetics and easy cleaning.

**UNDER BENCH:** As per layout

- 1) A complete knock down type storage construction consisting of cabinet frame, cover panel, metal shutters and drawers support brackets, shelves slides and handles.
- 2) Knock down cabinet body is a combination of 2mm, 1.5mm GI steel sheets.
- 3) Side Cover Panels and back panel of 1.5mm GI sheets.
- 4) Metal shutters are of 1.5mm thick GI sheets and 80 microns epoxy powder coated.
- 5) GI steel sheets shelves shall have a load carrying capacity of 50kg and the overall load carrying capacity of cabinet 100kg. The overall load capacity of drawer is 50kg of UDL for a pair of slide.
- 6) Adjustable/removable shelves to be provided in under bench cabinet.
- 7) Foam sheet filled in shutter gaps is not allowed. The sound deadening plastic bumpers to be used to minimize banging noise while closing the shutter.

**WORKING TABLE TOPS:**

**Granite top for tables:** Shall be 18-19mm thick jet black granite with chamfered molding on all sides of the exposed edges. To be placed on 3mm neoprene rubber sheet on the top of table of 40mm x 40mm square pipe frame for tables.

**SINK:** SS-316L sink of size 560mmLx428mmWx260mmD having 2mm SS-316L top completely welded with sink. **Sink bench should have drain board** for wet glass wares.

**BLOWER WITH 5 HP PUMP: (Spare)**

A blower with 5 HP pump with chemical resistant PP-FRP dueling of 250mm dia. using 3mm thick PVC sheets 3 layers of 2mm thick FRP lining using a suitable rosin including tees, flanges, elbows and bends and neoprene gaskets etc.

**BLOWER WITH 2 HP PUMP:**

A blower with 2 HP pump with chemical resistant PP-FRP dueling of 200mm dia. using 3mm thick PVC sheets 3 layers of 2mm thick FRP lining using a suitable rosin including tees, flanges, elbows and bends and neoprene gaskets etc.

**DUCTING:**

Chemical resistant PP-FRP dueling of 100mm dia. using 3mm thick PVC sheets 3 layers of 2mm thick FRP lining using a suitable rosin including Tees, flanges, elbows and bends and neoprene gaskets etc. Discharge end shall have weather/discharge cap as per SEFA 1.2 1996 E6 to prevent rain water entry into the ducting and facilitates easy rain water discharge without affecting the blower.

**ALUMINIUM PARTITION:**

The Partition shall be divided into 3 parts. The lower and upper shall be done with 6mm thick light brown veneer and middle with 4mm transparent glass. The partition shall be 100mmx45mm and 2mm thick aluminium sections.

Sliding door shall be openable with size appropriate for functional requirement as approved. Door should be divided in to two parts. The lower portion of frame should be made in 150mmx45mm and 2mm thick rectangular section. Middle support shall have 85mmx45mm and 2mm thick rectangular section. Rest of the frame should be made in 50mmx45mm and 2mm thick aluminium section.

**1.4. QUALITY ASSURANCE:**

- a. The steel laboratory item manufacturer shall provide work tops and case work all manufactured and shipped with proper packing and should take the full responsibility of the entire scope of works as specified in the tender.
- b. General performance: All items shall meet the performance requirements and should follow SEFA8-M guidelines.
- c. Bidder shall attaché third party test certificates of the furniture system as per SEFA8-M duly certified by SEFA approved laboratory within the last one year. The T&C at the time pre-dispatch inspection should be carried out in the presence of purchaser's representative if desired so by them.
- d. The supplier should have his own facility for conducting Factory Acceptance Tests specified by International Standards and Guidelines and should demonstrate the same to BARC Engineers as per standard norms.
- e. The following test needs to be performed on powder coated sample of GI sheets of 150mmx75mmx1mmthick sheets and submitted along with the material at time of dispatch.
  1. DFT Test and its results.
  2. Scratch Test
  3. Methyl ethyl ketone Test (MEK Test)
  4. Impact Test
- f. Drawings: Bidder shall submit interior storage rack drawing for R&D laboratory in 3D and shall submit the same along with tender documents. Site visit shall be arranged also.
- g. **Dye Penetrant Examination:**
  1. Dye penetrant examination method shall conform to ASME Sec. V or other applicable code.
  2. DP test must be carried out after the root pass and then after every pass DP test has to be carried out.
  3. Dye penetrant examination shall be carried out on the welded seams together with their HAZ

(minimum 1/2 on either side of the weld) as well as other areas wherever specified.

4. Only visible dye-penetrant solvent (removable type) method is envisaged to be employed for all welds and other metallic surfaces.
5. When used on austenitic stainless steel surfaces, the penetrant materials (penetrant, developer and cleaner) shall be analyzed for sulfur content and total halogens in accordance with ASTM-D-129 and ASTM-D-808.
6. The residual amount of total sulfur shall not exceed 1% by weight and halogens shall not exceed 25 ppm. Fabricator shall obtain certification of these tests for the penetrant materials used giving batch numbers and test results.

**1.5. INSPECTION:** Inspection of the finished items shall be carried out by BARC.

**1.6. DELIVERY:**

Shipment shall be delivered to R&D Lab, UMRT 3<sup>rd</sup> floor, UED, BARC by the supplier. No manpower will be provided for this work by BARC.

**1.7. WARRANTY:**

The selected manufacturer must warrant for a period of one year from the date of installation, that all products sold under the contract referenced above shall be free from defects in material and workmanship. During this period, the firm shall be bound to meet all warranty obligations with respects to any manufacturing defects and or maintenance.

**1.8. INSTALLATION:**

1. All kinds of civil work including foundation for blower/scrubber will be in scope of supplier.
2. Preparation: Prior to beginning installation, check and verify that no irregularities exist that would affect quality of work specified.
3. Adjust and Clean.
4. Repair or remove and replace defective work, upon completion of installation.
5. Adjust door, drawers and other moving or opening parts to function smoothly.
6. Clean shop finished casework; touch up as required.
7. Clean work surface and leave them free of all grease and streaks.
8. Electricals: All electrical wiring in furniture systems, fume hoods, etc. including in all laboratories main points in vendors scope.

**1.9. TIME OF COMPLETION**

The items should be fabricated, tested, supplied, installed and commissioned to R&D Lab, UMRT 3<sup>rd</sup> floor, UED, BARC within 90 days from the date of issue of work order.

**PART-B**

**GENERAL TERMS & CONDITIONS**

1. Documents: The vendor shall submit the following documents along with the offer:
  - a. Complete Technical specifications of the offered model, model no etc.
  - b. Technical literature/brochure of the equipment's
  - c. Lists of clients to whom the similar instrument/items was supplied in recent past along with purchase order number, purchase value, name, telephone no and e-mail ID of the concerned

person.

2. Price information: The vendor shall clearly mention the unit price of the system, along with currency of the offer, applicable taxes, duties etc.
3. Spare Items: The vendor may quote for spare items if required separately.
4. Required regulators, electrical cables and connectors shall be supplied.
5. Operation manual: The vendor shall provide three sets of complete operation manuals of the instrument along with the instrument.
6. Delivery: The instrument shall be safely delivered at UMRT Building, 3<sup>rd</sup> Floor at South site, BARC. Trombay, Mumbai, 400085
7. Delivery Period: The vendor shall mention the delivery period of the instrument from the date of receipt of firm order.
8. **Warranty: Vender shall provide warranty for trouble free operation of the instrument / items for the period of 12 months from the date of installation.**
9. Annual Maintenance Contract: In addition to one year warranty one year Annual maintenance Contract (AMC) shall be provided by the vendor.
10. Installation, Commissioning & Training: After delivery at site, the party shall install and commission the system and also provide training in operation to two officers for one week.



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SO (D)