TECHNICAL SPECIFICATIONS FOR LABORATORY FURNITURE

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MANDATORY REQUIREMENTS

1. The bidder should be a manufacturer registered in India or their authorized dealer or should be 100% subsidiary in India of parent company, if any
2. Joint ventures are not accepted
3. The bidder should have had an Office in the state of Jharkhand for the last 7 years for faster and better serviceability
4. If an authorized dealer is bidding for the parent company then the authorized representative should be having an office in the State.
5. The bidder should have in house ASHRAE 110: 1995 and EN 14175:2003 fume hood test facility. Photographs of this test facility must be attached to the technical bid
6. SEFA Membership Certificates for Last four years on a continuous basis
7. **Membership Certificate**: The bidder/parent company should submit the SEFA membership certificate, BIFMA, Green guard Certificate

LABORATORY FURNITURE

Scope of Work

- Supply and Installation of Laboratory Workbenches/Storage units including granite worktops and other supporting structures/hardware’s based on the specified Make List. This includes delivery to IIAB, Ranchi unloading the consignment and transporting it from the place of storage to the installation site.
- Supply & Installation of all utility service outlets and accessory fittings, electrical receptacles, plumbing and electrical switches & fittings identified on drawings as mounted on the laboratory furniture.
- Supply & Installation of all laboratory sinks, bottle traps, drain troughs etc.
- Supply & Installation of service structures where specified and setting in place reagent shelves of the type shown in the drawings.
- Removal of debris, dirt and rubbish accumulated as a result of installation/commissioning of the laboratory furniture and accessories and leaving the premises broom clean and orderly.

Basis of Work

- It is the intent of this specification to use specified make list 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.
- IIAB, Ranchi reserves the right to reject qualified or alternate proposals and to award based on product value where such action assures the owner greater integrity of product.
- Participants in the quotation process have the option of clarifying deviations to the specified design, construction or materials. Without such clarifications, sealed quotations to IIAB, Ranchi will be construed as being in total conformance to the requirements of the specification.

Products/Manufacturers
The selected manufacturer must warrant for a period of one-year starting (date of acceptance or occupancy, whichever comes first that all products sold under the contract referenced above shall be free from defects in material and workmanship.

IIAB, Ranchi will retain the above samples of the successful manufacturer or owner to insure that material delivered to jobsite conforms in every respect to the samples submitted if need be.

TECHNICAL SPECIFICATIONS

C-FRAME SYSTEM

All C-Frames assemblies should be manufactured from standard hollow metal sections; confirming to I.S. Code 7138:1973 (Indian Standard specification for steel tubes for furniture) and all sheet metal components should be of CRCA confirming to IS Code 513:1994.

The suspended under-bench welded units should be supported on heavy-duty steel frames fully carrying the load of worktops. Its superior strength combined with aesthetically appealing end caps shall give maximum flexibility and modularity while making a layout. C-frame should be constructed from a rectangular pipe with a cross section of 60mm x 30mm and should be 2 mm thick and should be without a vertical front leg to give a clean look. This shall provide more knee space or leg space and would facilitate uninterrupted lateral movement of the under-bench units within the bench run. The C-frame legs should be supplied with adjustable feet (tolerance from -5mm to +20mm) to correct the unevenness of flooring. The tubular enclosed type construction shall discourage dust accumulation and unwanted development of bacteria & fungus.

Drainage gradient should be well adjusted throughout the length of table and should have horizontal supports for drainage systems. The structure should have a removable back panel to provide access for maintenance throughout the length of table. The C-frame shall also have skirting at back bottom side. It should be suitable for sitting and standing nominal heights of 750mm & 900mm respectively. The nominal table depths should be 620 mm, 770 mm and 920 mm for wall side and 1240mm, 1540mm, 1840mm for Island tables. The Corner Units shall fit well with 770mm & 920mm table depths. All frame-work is should be pre-treated with superior pure epoxy powder coated finish.

The C-Frames should be for suspended storage cabinets or for cabinets that can slide through-and-through from one end of the workbench to the other through C-Frames (configuration depends upon the Schedule of Quantities)
**Horizontal Members**

These should be made from rectangular pipes of 2mm thickness. Cross-sectional dimensions of the pipe should be 60 x 30 x 2 mm. They should be made of CRCA MS and coated with pure epoxy powder. These connect two C-Frames together as shown using C-clamps/U-clamps. Together with the C-Frames and Horizontal Members connected together, the skeletal structure of the work-bench is formed on which the worktop can be placed and the hanging-type storage cabinets can be suspended. Horizontal Members determine the width of the lab workbench as they form the member (distance) between two adjacent C-Frames. They should be available in various widths of 600, 750, 900, 1050, 1200, 1350, 1500, 1650, and 1800.

**Removable Back Panels**

These cover panels cover the service lines that run behind them. These should be easily removable (unclipped) and the service line be accessed for maintenance. This allows the equipment on workbench to remain undisturbed. They should be made of CRCA MS with pure epoxy powder coating and are of 1mm thickness.
COVER PANELS
All side cover panels and back panels, filler panels should be made from CRCA MS panels of 1.0 mm thickness with pure epoxy powder coating

MASTER UPRIGHT
Master Upright should be of the dimensions: 300 x 150 x 1.2 mm. It should be made from 1.2mm thick CRCA MS with pure epoxy powder coating. It should have an open-able door for easy service maintenance and should extend till the false ceiling

VERTICAL UPRIGHT
The Upright system will form the back-bone for internal distribution of GDS, Electrical supply systems Shelves and Top Units and should be constructed from 16 gauge CRCA formed steel panels with removable covers. Shelf height should be adjusted with an increment of 1inch / 25mm. Upright should also provide support to Top Units for hanging thus eliminating the danger of fixing the Top Units on non-rigid partition wall / panels. Uprights should be supplied with adjustable feet from -5mm to +20mm.

ADJUSTABLE REAGENT SHELVES
Depending upon BOQ requirement, height adjustable shelves should be provided between uprights with 1” of height adjustability. Complete modular design consisting of 2 stage horizontal storage shelves. The ends and intermediate vertical supports should be 2mm thick aluminum extrusion with MS brackets of 2 mm thick. Toughened glass should be put-on over these shelves for taking care of bottle marks/corrosion
WELDED UNDER-BENCH STORAGE CABINETS
Welded cabinet body should be of flush face construction with intersection of vertical and horizontal members like LH and RH side panel along with front horizontal channel, back panel and bottom panel. It should be relocated anywhere easily as it is an independent unit. Cabinet should be of square non-sharp edge construction. Doors should be assembled with SS-304 hinge assembly. Removable back panel should be provided to easily access the service lines running behind the cabinet benches. Intermediate horizontal channels should be provided between door and drawer. Shelf should be eight bend panel with 20mm height. Drawer tray should be of single piece construction. Drawer should be well supported on LH and RH ball slide suspension system. Steel door and drawer front is of double wall construction with sound dampening material filled inside. Doors should be easily removable and hinges should be easily replaceable. Knee space panel should be in 22 gauge construction. Storage Units to be of the Suspended Type

**Dimensions:** W=300/450/600/750/900 mm, D = 530mm, H = 635/485 mm. **Configurations:** 2 Shutters 1 Drawer **MOC:** MSCRCA: IS – 513 (1994), **Thickness:** LH/RH side panels, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel should be of 1.2mm thk. Removable Back panel, Shutter cover, Fr. Rack strip, Top cover panel should be of 0.8mmthk. **Finish:** Powder coating pure epoxy, thickness 40-50 microns. **Handle:** Anodized Aluminum Recessed-Type, **CTC:** 160.0mm. **Lock:** Units have a locking facility with 180° and 10 lever cam lock mechanism (except for sink and corner unit). **Hinge:** Knuckle-butt type SS Hinge. **Screw:** SS304. Shutter should be of twin-type construction with sound dampening effect using profeel. Shutter cover should be equipped with Bump on for sound dampening. Ball Slide: 500mm Length (required only for drawer unit). Shutter should have provision of roller catch

SERVICE FITTINGS AND ACCESSORIES
Service fittings should be laboratory grade, and water faucets and valve bodies should be cast red brass alloy or bronze forgings, all fittings should be powder plated unless specified otherwise. **Service Indexes:** Fittings should be identified with service indexes in the color coding as per DIN 12920.

ELECTRICAL TRUNKING
Used for housing electrical switches and sockets, data and voice points, its top panel, bottom panel of the trunking should be made from 1.0 mm thick CRCA MS panel. It should be available in both, single sided and double sided configurations. It should be made from CRCA MS with pure epoxy powder coating. The front surface that houses the electrical points should have a slope

LABORATORY SINK AND ACCESSORIES
Ceramic Sinks: Made up of 5 mm thick high density and elastic poly propylene with good resistance to organic solvents. Standard bowl size (L x W x D) is 500 x 400 x 300 mm. Faucet should be 1-way type faucet of approved make

It should be 19mm (+/- 2mm) thick Jet Black Granite worktop. The exposed edges of the worktop should be chamfered and smoothened. The bottom of the worktop should be polished and there should be a V-groove throughout the length of the exposed edges to protect the cabinets from coming in contact with the spillages. The overhang on the storage cabinet is 25 mm at the front side and 30 mm at the sides. The backing material used is a neoprene mat of
LIST OF APPROVED MAKES

<table>
<thead>
<tr>
<th>Item</th>
<th>Approved Makes</th>
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</thead>
<tbody>
<tr>
<td>Steel</td>
<td>TATA Steel, JINDAL Steel/ Equivalent or better</td>
</tr>
<tr>
<td>Powder Coating</td>
<td>Kansai Nerolac, Berger Paints, Asian Paints/ Equivalent or better</td>
</tr>
<tr>
<td>Water Faucets and Gas Valves,</td>
<td>Watersaver, Broen/ Equivalent or better</td>
</tr>
<tr>
<td>Switches and Sockets, Data and</td>
<td>Northwest, Norisys/ Equivalent or better</td>
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<tr>
<td>LAN points</td>
<td></td>
</tr>
<tr>
<td>Locks</td>
<td>Hettich, Hafele, Godrej/ Equivalent or better</td>
</tr>
<tr>
<td>Drawer Slides</td>
<td>Hettich, Hafele, Godrej/ Equivalent or better</td>
</tr>
<tr>
<td>Sink (PP Sink)</td>
<td>KL Labs, Malaysia, Alloyplast/ Equivalent or better</td>
</tr>
<tr>
<td>Worktop</td>
<td>Jet Black Granite</td>
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