TENDER DOCUMENT

NIT No.: NRO/CON/738/653 date: 18.10.2017

FOR

Supply, Installation, Testing & Commissioning of Medical College, Admin, Hospital & Hostel furniture and their maintenance during defect liability at Government Medical College and Hospital at Barmer, Rajasthan.

VOLUME – II

ADDITIONAL CONDITIONS OF CONTRACT
TECHNICAL SPECIFICATIONS
And
DRAWINGS

EXECUTING AGENCY

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ADDITIONAL CONDITIONS OF CONTRACT (ACC)

1.0 The following Additional Conditions of Contract shall be read in conjunction with General Conditions of Contract. If there are any provisions in these Additional Conditions of Contract, which are at variance with the provisions of General Conditions of Contract, the provisions in these Additional Conditions of Contract shall take precedence.

2.0 INTRODUCTION

Department of Medical Education, Govt. of Rajasthan (DME, GoR) has entrusted the Construction of Medical College Campus for 100 MBBS Admission Annually and Up-gradation of Govt. District Hospital into Teaching Hospital at Barmer, Rajasthan to EPI as PMC (Deposit work). EPI on behalf of Department of Medical Education, Govt. of Rajasthan has invited the NIT as e- Tendering from the eligible bidders as per NIT.

3.0 SCOPE OF WORK INCLUDED IN THE CONTRACT

The scope of work included in this tender shall include (but not be limited to) Design, engineering, Manufacture, inspection before dispatch, supply, delivery at site, installation, testing commissioning & handing over to Medical College complete Furniture works for Medical College Campus, Administrative block, Hostel & other buildings of Medical College & Hospital building at Barmer, Rajasthan as per the scope of work, Technical Specification, Test Specification & other conditions specified in Technical specification (Vol-II), BOQ and elsewhere.

4.0 QUALIFICATION OF TENDERERS

The price bid of short listed tenderers who fulfill the eligibility criteria shall only be opened. The decision of EPI in this regard shall be final & binding on the tenderers.

5.0 DISQUALIFICATION

The bidders may note that they are liable to be disqualified and not considered for the opening of Price Bid if;

a) Representation in the forms, statements and attachments submitted in the pre-qualification document are proved to be incorrect, false and misleading.

b) They have record of poor performance during the past 10 years such as abandoning the work, rescinding of contract for which the reasons are attributable to the non-performance of the contractor, inordinate delay in completion, consistent history of litigation / arbitration awarded against the contractor or any of its constituents or
financial failures due to bankruptcy etc. in their ongoing / past projects.

c) They have submitted incompletely filled in formats without attaching certified supporting documents and credentials to establish their eligibility to participate in the tender.

d) If the bidders attempt to influence any member of the selection committee.

EPI reserves its right to take appropriate action including disqualification of bidder (s) as may be deemed fit and proper by EPI at any time without giving any notice to the contractor in this regard. The decision of EPI in the matter of disqualification shall be final and binding on the bidders.

6.0 SPECIFICATIONS

As per technical specification and BOQ.

7.0 EPI reserves the right to independently verify the performance of the bidder from the existing owners / users / owners’ Consultants. In case any installation of the manufacturer is found to be performing unsatisfactorily, EPI reserves the right to reject the tender and price bid of such bidder shall not be opened, even if the bidder is meeting the technical and other qualifying requirements.

In such circumstances the bidder shall have no claim on EPI of whatsoever nature.

Bidder’s specific attention is drawn to above clause.

8.0 Payment Terms

Subject to deduction which EPI might be entitled to make under the contract, the contractor shall receive payment of contract value as follows:

**Stage-I**

10% of the contract value shall be paid on the fulfillment of the following conditions

a) Signing of the agreement.

b) Submission of security deposit cum performance guarantee as per Clause No. 9 of GCC.

c) Submission of design & detailed / shop drawings.

d) Submission of non-revocable and unconditional Bank Guarantee of 10% of the Contract Value from a Nationalized Bank / Scheduled Bank as per the enclosed Performa. This Bank Guarantee shall be released after completion of successful installation / erection of the equipment / items i.e. Stage-III of payment terms.

**Stage-II**

65% of the contract value on prorata shall be paid on initial inspection of
complete material and equipment by EPI or the inspection agency appointed by EPI and after receipt of material at site.

**Stage-III** 15% of the contract value on prorata shall be paid on completion of successful installation / erection of the equipment / items.

**Stage-IV** 10% of contract value on prorata shall be paid on testing, commissioning, certification wherever required, and handing over to DME, GOR, on the basis of Certificate to be issued by the Engineer-in-Charge on proof of having successfully completed the final inspection, commissioning, and handing over of all the equipment/items for the beneficial use to DME, GOR.

9.0 VARIATION IN TAXES, DUTIES, LEVIES AND IMPOSITION OF NEW TAXES ETC.

Taxes shall be extra as applicable.

10.0 ROAD PERMIT :

Road permit for transportation of goods across state border shall not be issued by DME, GoR / EPI and will have to be arranged by contractor on his own. Transit Insurance of the equipment shall be arranged by the contractor. Nothing extra shall be paid on this account.

11.0 Invoice should be raised by Contractor in the name of EPI, Barmer.

12.0 The clause No.72.1 of GCC shall be replaced as under:

The Contractor shall ensure adequate progress during the execution of work according to the detailed Bar Chart / PERT chart so that the activities are completed in the period allowed in the completion schedule as given at clause no. 14.0 of Additional Conditions of Contract (ACC).

However, the Contractor shall also maintain monthly progress strictly in accordance with bar chart and / or detailed time schedule that will be worked out on the basis of completion schedule for various stages mentioned at clause no. 14.0 of ACC. If the Contractor fails to maintain the above progress or to complete the work corresponding to S. No. 1 to 3 of completion schedule as given at clause no. 14.0 of ACC and clear the site on or before the contract or extended date of completion, he shall without prejudice to any other right or remedy of the EPI on account of such breach, pay as agreed compensation and not as penalty at the rate of one percent (1%) per every week of delay of the entire value of contract.

The total amount of compensation payable by the contractor for delay in completion of the work. Corresponding to S. No. 1 to 3 of completion schedule as per clause no. 14.0 of ACC shall not exceed 5% of the total contract value as
13.0 Clause No. 72.4.1 of GCC stands modified as under:

Within 10 (Ten) days of date of Letter of Intent, the contractor shall submit a Time and Progress Chart (CPM/PERT/Quantified Bar Chart) and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items / scope of the works. It shall indicate the forecast (mile stones) of the dates of commencement and completion of various items trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the contract documents, to ensure good progress during the execution of the work. The approval by the Engineer-In-Charge of such programme including modifications made by the Engineer-In-Charge in the said programme shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-In-Charge to take action against the contractor as per terms and conditions of the agreement. The physical report including photographs shall be submitted by the contractor on the prescribed format & the intervals (not later than a month) as decided by the Engineer-in-Charge. The compensation for delay as per clause 72.1 (revised as per ACC) shall be leviable in case the required progress is not achieved to meet the time deadlines of the completion period for supply and installation.

14.0 COMPLETION SCHEDULE

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Period from the date of Start</th>
<th>Description of work to be completed during the period specified under column no. 2 (Milestone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the date of start up to the end of 15 days</td>
<td>Submission of design &amp; detailed / shop drawings.</td>
</tr>
<tr>
<td>2</td>
<td>From the start of 16 days to end of 30 days</td>
<td>Procurement, inspection of material at manufacturer’s works by EPI/DME &amp; delivery of the same to the site.</td>
</tr>
<tr>
<td>3</td>
<td>Start of 31 days end of 45 days</td>
<td>Installation, testing &amp; commissioning of all the equipment and furnishings.</td>
</tr>
</tbody>
</table>

15.0 The contractor shall comply with legal orders, directions and by laws of local bodies / authorities. The contractor shall give to the Municipality, Police, Local Bodies and concerned Governmental authorities all necessary notices relating to works that may be required under the law and obtain all requisite licences, permissions for temporary obstructions, enclosures, collection and stacking of materials, etc. The contractor shall pay at his own cost all fees, taxes and charges that may be liable on account of these operations in executing the contract. Nothing extra shall be paid by
EPI on this account.

The contractor shall be bound to follow the instructions and restrictions imposed by the administration / Police authorities on the working and / or movement of labour, materials etc. nothing extra shall be payable due to less / restricted working hours at site or any detours in movement of vehicles.

16.0 GUARANTEE

The contractor shall guarantee that the materials and workmanship of the Furniture installed by him, under these specifications shall be new and first class in every respect. He will make good any defect within 24 hours, which may develop within 2 years from the date of handing over of the installation after testing and commissioning without any extra cost to EPI / DME, GoR and the bidder shall also be liable for maintenance of 5 (Five) years after completion of defect liability period.

17.0 PERMITS AND INSPECTIONS

The contractor shall obtain all necessary permits from local bodies, provincial or central authorities and shall make arrangement for inspection and tests etc. as required at his own cost.

18.0 LICENCES

The contractor shall arrange for obtaining the licence and clearances for the operation. (If required) from the local authorities and statutory bodies at his own cost & nothing extra shall be payable. Certification of various equipments / installations from statutory bodies other agencies as required as per technical specifications, shall be arranged by contractor at his own cost before handing over.

19.0 The constructions of proposed building being in urban Area, the contractor shall have to make his own arrangements for getting the permission for plying trucks or any plant & equipment for execution of works from the Police Department at his own cost. No excuse as to delay in work due to non-availability of permission shall be entertained.

20.0 The work shall be carried out in accordance with the drawings/documents approved by the EPI / DME, GoR. Before the commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available there from is complete and unambiguous. The discrepancy, if any, shall be brought to the notice of Engineer-In-Charge before the execution of work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and / or incomplete information. Nothing extra shall be paid on this account.
21.0 The contractor shall give performance tests of the entire installation(s) as per specifications and drawings before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for these performance tests.

22.0 The contractor shall be bound to sign the site order book as and when required by Engineer-In-Charge at Site and carry out compliance of instruction promptly to the satisfaction of Engineer-In-Charge.

23.0 Bill of Quantities shall be read in conjunction with the specifications and requirement described in tender documents, Instructions to tenderers, General conditions of contract, Additional conditions of contract, Technical specifications, Drawings, Schedules, and Annexure & Addendum etc. to tender Document.

General directions and description of work and material are not necessarily repeated or summarized in the Bill of quantities. Reference to the relevant sections of the contract document shall be made by the contractor before entering rates or prices against each item in the Bill of Quantities.

24.0 If the headquarters of the successful contractor are elsewhere other than in Barmer, he shall have a duly authorized agent in Barmer from the commencement of the work until the system is taken over by DME, GoR. Such agent shall be authorized to act on behalf of the successful contractor to accept service of notice of contract and to agree to extras, omissions and varied item of works and rates for the same. Such agent shall maintain on his staff a qualified engineer approved by the engineer In-charge and such office personnel as may be required for the efficient execution of the works. Any notice under the contract shall be deemed to have been served on the successful contractor if served upon such agent or sent by registered letter to his address. Such agent shall not be changed and shall not leave during duration of contract unless the consent of the engineer in-charge shall have been previously obtained. If the engineer in-charge orders to successful contractor to carry out any rectification under the terms of contract after the building is complete the successful contractor shall carry the same without any extra cost.

25.0 DATE OF ACCEPTANCE:

Subject to the guarantee clause date of taking over the installation for the beneficial use by DME, GoR shall be the date of acceptance. Any undue wear and tear of components during the commissioning period shall be made good by the contractor free of charge.

26.0 CARE OF BUILDING:

Care shall be taken in handling / stocking of material to avoid damage to the building.
27.0 TEST CERTIFICATE

All manufacturer’s certificates of test showing that the materials have been tested in accordance with the requirements of the relevant standard specification and the copy of the test certificate as well as standard shall be supplied free of cost to DME, GoR / EPI.

INSEPECTION, TESTING AND ACCEPTANCE:

28.0 INITIAL INSPECTION AT MANUFACTURER’S WORK:

The contractor will be required to furnish such facility as will be necessary for inspection of equipment before dispatch at manufacturer’s work and also for witnessing such test, at the works, if so required by EPI/ DME, GoR. The contractor shall furnish information for this purpose and will give sufficient notice regarding dates proposed for such test to inspection agency.

29.0 INSPECTION DURING INSTALLATION AND FINAL INSPECTION:

The contractor shall arrange for checking and testing the installation as per specification. Installation shall not be accepted until DME, GoR / EPI is satisfied about its compliance with requirement of the specification in all respects. All instruments and materials required for testing shall be the responsibility of the contractor. The taking over of equipment / items after commissioning shall be subject to removal of defects, if any, pointed out during the inspection.

30.0 TESTING AND COMMISSIONING

As specified in Technical Specification (Vol. II).

The contractor shall arrange at his own cost for all test instrumentation, staff, consumables during commissioning upto the date of acceptance. Nothing extra shall be paid on this account.

31.0 SITE ENGINEER OF CONTRACTOR:

Minimum qualifications and experience required for principal technical rep. and other minimum technical staff other than supervisor.

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Minimum Experience</th>
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<tbody>
<tr>
<td>One Graduate Engineer-Principal Technical Representative</td>
<td>At least 5 year experience in Technical Installation, Testing and Commissioning of Furniture works for laboratories and other buildings.</td>
</tr>
</tbody>
</table>
32.0 It will be the sole responsibility of contractor to obtain all statutory approvals and completion clearance from all the relevant statutory bodies’ for all other services as included in the scope of contract etc. from the concerned department as required within the stipulated time frame. Liaison work on behalf of EPI with the local bodies will also have to be done by the contractor. Nothing extra shall be payable to contractor on this account. No claim whatsoever in this regard shall be entertained.

33.0 The contractor shall make necessary safety arrangement at site including as mentioned in GCC and indemnify EPI against any consequence of accident at site.

34.0 EPI is awarding this Contract on behalf of DME, GoR. In case M/s. EPI cease to be PMC, the right and responsibility etc. of EPI in the contract shall get transferred to DME, GoR or their nominated agency shall operate this Contract.

35.0 Deduction (non-refundable) at the rate of 1% or at the rates applicable from time to time in the state of Rajasthan from gross amount of each running bill and from final dues of contractor shall be made towards provision for workers “welfare Cess Act 1996”.

36.0 **Clause No. 76.1 of GCC stands deleted.**

37.0 **Clause No. 10.0 of GCC stands modified as under :**

Retention money shall be deducted from each running bill of the contractor at 5% (Five percent only) of the gross value of the Running Account bill. The Earnest Money Deposited by the tenderer in the form of Demand Draft will be treated as part of the Retention Money. Retention Money shall be refunded to the contractor after expiry of defects liability period i.e. 24 months (referred to in clause no. 74 of GCC) or on payment of the amount of final bill whichever is later.

38.0 **Clause no. 28.3 of GCC shall stand deleted.**

39.0 **DEFECT LIABILITY PERIOD**

**Clause No. 74.0 of GCC stands modified as under:**

The Contractor shall be responsible for the rectification of defects in the works for a period of twenty four months from the date of taking over of the works by the Owner/Client and the bidder shall be liable for maintenance of 5 (Five) years after completion of defect liability period. During this period, any defects discovered and brought to the notice of the Contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the Contractor fails to carry out these
rectifications, the same may without prejudice to any other right or remedy available, be got rectified by EPI at the cost and expense of the Contractor.

40.0 **Clause No.69.1 (IV) of GCC stands modified as under:**

If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clauses (i) to (iii) of clause 69.1, then the Contractor shall, within 7 days of the date of receipt of order to carry out the work, inform the Engineer-in-Charge the rates which he intends to charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer-in-Charge shall determine the rate or rates on the basis of prevailing market rates of the material, Labour, T&P etc. plus 15% (Fifteen percent) to cover the Contractors supervision, overheads and profit and pay the Contractor accordingly. The opinion of the Engineer-in-charge as to the current market rates of materials and quantum of labour involved per unit of measurements will be final and binding on the Contractor. However, the Engineer-in-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner, as he may consider advisable. But under no circumstances, the Contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

41.0 **Clause No.76.3, stands modified as under :**

**JURISDICTION:** The courts in Delhi/ New Delhi alone will have jurisdiction to deal with matters arising from the contract, to the exclusion of all other courts.

42.0 **SECURITY DEPOSIT**

In the event of award of “Works”, Contractor shall submit to EPI, Bank Guarantees from a Nationalized Bank / Scheduled Bank towards security deposit @ 5% of the contract value of the accepted tender within 10 days from the date of LOI as per the EPI format enclosed and BG shall be valid up to 5 years after the defect liability period of 24 months, with claim period of 6 months failing which EPI at his discretion may revoke the LOI & forfeit the EMD furnished along with tender. Security deposit will be returned to the contractor after satisfactory performance of 5 years after defect liability period.

43.0 **SECURED ADVANCE**

Clause no. 35.0 of GCC shall stand deleted.

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TECHNICAL SPECIFICATION

FOR

FURNITURE/FURNISHINGS
Name of work:- Supply, Installation, Testing & Commissioning of Medical College, Admin, Hospital & Hostel Furniture and their maintenance during defect liability at Govt. Medical College and Hospital at Barmer, Rajasthan

Following Basic Material to be used in Medical college, Admin, Hospital & Hostel furniture with prior approval of Client:

Material Requirements For All Revolving And Tubular Chairs:

1. Cushion chairs are made out of flexible polyurethane foam molded to have Consistent hardness of 20-24 kg.

2. The polyurethane foam should be molded with density 45 +/- 2 kg/meter cube and hardness 20 +/- 2 kg on hampdness machine at 25% compression.

3. Armrest of chairs should be made out of integral skin polyurethane foam of shore hardness ‘a’ 50-70 and reinforced with ms steel insert except unless otherwise specified.

4. Gas lift mechanism for height adjustments tested for 100000 cycles of operation.

5. Chair base of the pedestal consists of 5 prongs made of 5 mm thick ms plates.

6. Plastic cladding is provided to make the pedestal look good aesthetically. The ms pedestal should be tested for load bearing.

7. Twin wheel castors are made of nylon and should be tested to carry a load upto 82 kgs on the chair.

8. All steel components should be powder coated conforming to :

   ① Dry film thickness more than 45 microns.
   ① Salt spray test to withstand corrosion.
   ① Adhesion as per din 53152 standards.
   ① Scratch hardness as per bs 3900/e2
   ① Impact test.
   ① Pencil scratch test

Mandatory Tests To be Done By Manufacturer on Chairs:

- Seating Impact test.
- Arms Strength Test
- Back Durability Test.
- Castor/ Chair durability test.
- Base Test.
- Castor retention test.
- Castor Pull Out test.
- Castor Breakability Test.

Powder Coating Tests:
All MS components shall be epoxy polyester powder coated using the seven chamber pretreatment process with the powder thickness greater than 40 microns Dry Film Thickness.

Tests to Be Carried Out on Powder Coating :-

- Cross Cut Test- To check Adhesion
- Impact Resistance Test – To 150 kgs/cm as per BS 3900/E3.
- Scratch Hardness- Upto 4 kgs as per BS 3900/E2.
- Salt Spray Test.

Anti Rust Treatment To Be Followed For All Metal Components :

The manufacturer should have anti rust treatment facilities for treating all the metal components. The anti rust treatment shall consist of Removal of oil by treating metal Components with sodium carbonate and alkaline phosphate at 60 degrees centigrade followed by Rinsing with water at normal temperature. The rinsed components are to be dipped in phosphoric acid solution at 45 degrees centigrade for 10 minutes minimum for de-rusting followed by Rinsing. Components shall undergo phosphating by dipping in phosphating tank containing iron hydrogen phosphate dissolved in phosphoric acid at normal temperature for minimum 5 minutes followed by rinsing and finally Dipping components in chrome phosphatic acid reducing agent chemical at temperature of 80 degree centigrade (+/-10%) for minimum period of 60 seconds.

Specifications For Materials And Processes To Be Used On Furniture

Specifications For Steel Used In Chairs and Other Items :

- Cold rolled steel for MS sheet shall have thickness ranging from 0.63mm to 1.2mm as per IS:513-1994.
- Hot rolled steel for MS sheet shall have thickness ranging from 2.5mm to 3.15mm as per IS:10748 Group I.
- MS ERW tubes used for tubular components should satisfy IS-7138.

Specification For Fabric To Be Used For Upholstery :

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Description/ Selection Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% Polyester, fiber dyed</td>
<td>For a Span of 1.2 Meters shall have weight 330-grams/ meters.</td>
</tr>
<tr>
<td>100% poly Propylene</td>
<td>For a Span of 1.2 Meters shall have weight 230-grams/ meters.</td>
</tr>
</tbody>
</table>
Material Specifications:

1) Plain Particle Board (Medium Density):

Particle boards conforming to IS 2380(1977) with physical characteristics as under

Density : 600 –900 kg per meter cube.
Moisture content : 5.10%
Water absorption :
2 hour test – max 15%
24 hour test – max 40%
Swelling in water : 2 hour – max. 5% thickness
Swelling due to water absorption : max 6%
Tensile strength perpendicular to surface : min 0.3 Newton per millimeter square.(for all thickness)
Tensile strength after cyclic test : min 0.3 N/mm square
Screw withdrawal strength on face : min 1250 N
Screw withdrawal strength on edge : min 850 N

2) Medium Density Fiber Boards:

Medium Density Fiber Board conforming to IS: 2380-1977 with following physical characteristics

Specific Gravity : 0.5 to 0.9
Density : 600 –900 kg per meter cube.
Moisture content : 5 to 10%
Water absorption : 2 hour test – max
7% 24 hour test – max 15%
modules of rupture upto 20mm thick : min 30 N/mm square.
Modules of rupture above 20 mm thick : min 25 N/mm square.
Linear expansion in thickness due to surface absorption : max 5%
Swelling due to general absorption after 24 hour soaking in
Thickness : max 4%
Length : max 0.4%

Width : 0.4 % min.

Tensile strength perpendicular to surface : 0.7 N/mm square.(for all thickness)

Screw withdrawal strength on face : min 1500 N

Screw withdrawal strength on edge : min 1250 N

3) Pre Laminated And Twin Particle Boards :

Prelaminated and twin particle boards as per IS:2380-1977.

Density : 600 –900 kg per meter cube.

Moisture content : 5 to 10%

Water absorption : 2 hour test – max 15%

24 hour test – max 30%

Swelling in water : 2 hour – max. 8% in thickness

Modules of rupture : min. 15 N/mm square.

Tensile strength perpendicular to surface : min 0.5 N/mm square.(for all thickness)

Screw withdrawal strength on face : min 1550 N

Screw withdrawal strength on edge : min 850 N

The following characteristics are according to annexure of IS:128323-1990.

Resistance to steam- No sign of blister, delaminating or change in surface finish.

Resistance to crack – No sign of crack and delamination.

Resistance to cigarette burn.

Resistance to stain.

Abrasion Resistance (min) in no of revolutions.

4) Post formed Laminate Sheets :

The pos formed (high pressure decorative laminate) one side bearing 0.6 or 0.8 mm thick decorative conform to NEMA specification- ANSI/NEMA/LD-3-1991. The physical characteristics and test requirements are as per NEME-LD-3-1991. Impact strength - Ball Impact resistance min 20"

Wear resistance - Min 400 cycles.
Gross dimensional change in machine direction - Max. 1.1% Gross

dimensional change in cross machine direction - 1.4% max.

High temperature resistance - slight effect is accepted on specimen at the final
examination.

Stain resistance - No effect is acceptable on the specimen.

Formability - Min radius 12.5mm.

Blister Resistance - Min 40 Sec.

Boiling water immersion test (2 hour test) as per IS:2046-1969.

Increase in weight - Max. 30%.

Increase in thickness - Max 30%.

5) Decorative Laminated Sheets:

Decorative thermosetting synthetic resin bonded laminated sheets are used in 1.0mm
thickness and are of type 1 with having one side bearing the decorative surface. The
finish, shade, color and pattern shall be mutually decided by the purchaser and supplier.
Physical characteristics and test requirements are as per appendix of IS:1046-
1969. Resistance to dry heat – no blistering or appreciable surface deterioration or loss of
gloss. Dimensional stability in low humidity test at 70+/- 2deg C for 24 hours.- less than
0.5% in length and width dimensions.

Resistance to immersion in boiling water.

Increase in weight - max 5%

Increase in thickness - max 5%

Resistance to staining for 24 hours with standing against agents specified in IS 2046-
1969. specimen should not show blistering at the final examination. Cross breaking
strength for 0.6mm thick—2000 kg per CM Square.

Cross breaking strength for 1.0 mm and 1.5mm thick – min 4000 kg per CM square.

Impact strength - min 0.035 kg fm

Machinery test - no Slitting or cracking.

6) Epoxy Powder Coating.

Epoxy powder used for coating shall be of a standard shade or as specified at the time of
tender. The specific gravity of powder 1.6(+/-.2) gives a DFT of 50-60 microns. Pencil
Hardness of 2H; Cross hatch Adhesion (DIN 553151) or GT – ‘O’ gloss @ 60 DIN 67530 of
80 +/- 5% for all standard except black for which it shall be 45 +/-5 for black. The
coating should be able to withstand min 500 hour of salt spray test. Impact resistance of 150kgcm.

The following IS will be followed for the following items:
1) The grade IS : 513 will be followed in case of steel items. IS: 10748 the right classification Grade 1 shall be used. The steel tubes for furniture shall be as per IS: 7138.
2) The powder coating thickness at P-2 is 45 micron & P-3 is 40 micron.
3) The rated IS/International Standard nos. under which the respective tests are to be performed shall be used. The requisite values against which the test results will be compared for conformity.
4) The “Consistent hardness shall be 20-24 kg”.
5) For MDF boards, maximum water absorption after 2 hours soaking shall be 6% for grade I & II boards. All the required test as per IS code shall be carried out for MDF boards.
6) Under decorative Laminated sheets (P-5) the IS 1046 shall be followed for cash boxes.

If any differences is found between BOQ & Specification. The Specification will supersede over Bill of quantities items.

WIRE MANAGEMENT – Wherever Partition has concealed wire management capabilities and are engineered for responsive and safe operations of power, telecommunications and data (LAN) and has separate components for electrical, data and telephone cables having adequate capability of both the vertical and horizontal wire movements. Slots/cutouts are provided on Raceways to fix all electrical and data points.
LEVELLERS - Levellor of M10 size are provided in each frame which allow 10-25mm adjustment for floor unevenness.

CO-ORDINATION WITH ALL THE OTHER WORKS AT SITE: All Furniture installation at site should be Co-ordinated with all the services like Civil, Electrical, PHE, HVAC and completed in all respects.

NOTE: Sizes in dimensions of all items may vary upto + or – 5%.
Approval of Samples (One each of all the Furnitures / Items as per BOQ should be taken by Engineer Incharge / User / Architect before manufacturing and Supplying at site.

LIST OF MAKES:
1. BP Ergo / HNI
2. Godrej Furniture
3. Featherlite
4. WIPRO