

**MINISTRY OF HEALTH & FAMILY WELFARE,
GOVERNMENT OF INDIA**

Tender

For

**Supply, installation, testing & commissioning of office & other
related furniture works etc for Temporary OPD at AIIMS, Rai
Bareli (UP)**

Volume-III

Specifications

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TECHNICAL SPECIFICATION FOR FURNITURE/FURNISHINGS FOR

Supply, installation, testing & commissioning of office & other related furniture works etc for Temporary OPD at AIIMS, Rai Bareli (UP)

Pictures shows of any/all items are indicative only however actual may be deferred as approved by Engineer/Client.

❖ Following Basic Material to be used in Office & Laboratory 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 :-
 - ❖ Dry film thickness more than 45 microns.
 - ❖ Salt spray test to withstand corrosion.
 - ❖ Adhesion as per din 53152 standards.
 - ❖ Scratch hardness as per bs 3900/e2
 - ❖ Impact test.
 - ❖ 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 chromic 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 :

Material Type	Description/ Selection Criterion
100% Polyester, fiber dyed	For a Span of 1.2 Meters shall have

	weight 330-grams/ meters.
100% poly Propylene	For a Span of 1.2 Meters shall have weight 230-grams/ meters.

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 square.(for all thickness)	:	min 0.3 Newton per millimeter
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 thickness)	:	0.7 N/mm square.(for all
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 (thickness)	:	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(+/-0.2) 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.

Office Furniture

1. Tables



Providing and fixing Study Table of size 1500MMX750MMX750MM with top made of 25mm thick plain particle board having 0.6mm post formed decorative laminate on top and balancing laminate on unexposed face. The understructure is made of 18mm thick prelaminated particle board with all exposed edges sealed with 2mm PVC edge banding tape and all unexposed edges sealed with 0.6mm edge banding tape pressed at 200o C with hot melt glue on special machines. Table having two front powder coated vertical legs of CRCA with triple bending shape of overall size 75x75mm with overall radius of 63mm, the angle of each bend should be 150°. The gable end of table having radial profile of radius 195mm. The table has a provision for wire manager caps at top.

2. Side Unit



Providing & Fixing Side Storage Unit of overall size 1050x450x725 with top made of 25mm thick post formed particle board Ext grade and understructure made of 18mm prelaminated particle board, having one openable shutter box on one side with shelf and two top drawers and one filing drawer on other side. All

exposed edges are sealed with 2mm thick PVC edge banding tape and all unexposed edges sealed with 0.6mm edge banding tape pressed at 200o C with hot melt glue on special machines. The unit is provided with proper locking arrangement .

3. Key Board



Providing & fixing keyboard tray of size 500x220x75mm made up of 0.6mm thick CRCA steel sheet duly powder coated. The Keyboard tray runs on ball slides for smooth movement.

4. CPU



Providing & Fixing CPU trolley of 240mm height with adjustable width from 220 to 320mm width made of 0.9 mm thick CRCA steel sheet duly powder coated with 2 Nos. lockable castors & 2 Nos. non lockable castors.

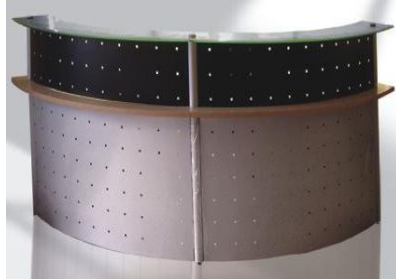
5. STORAGE UNIT



Providing & Fixing Side Storage Unit of size 900x450x1200 with top made of 25mm postforming on particle board. The understructure & facia is made of 18mm prelaminated particle board having openable shutters with all exposed edges sealed with 2mm thick PVC edge banding tape and all unexposed edges sealed with 0.6mm edge banding tape pressed at 200o C with hot melt glue on

special machines, with proper locking arrangement. The shelves are made of 18 mm thick prelaminated particle board.

6. RECEPTION TABLE



Double module reception table of an overall size of 2425X1000X1050 with top made up of 25mm thick Pre Laminated Particle Board with exposed edges sealed with PVC edge banding tape. The table top is supported on steel vertical studs of 50mm(D) and lower modesty made up of perforated steel sheet duly powder coated. The main table has a transaction top made of 10mm thick toughened glass supported on steel studs and upper Perforated Modesty duly powder coated.

7. CENTRE TABLE



Providing and supplying center table of an overall size 1200x600x450 with top made of 12mm thick beveled glass and understructure with a shelf is made of 18mm thick prelaminated particle board with all exposed edges sealed with 2mm PVC edge banding tape and unexposed edges sealed with 0.6mm PVC edge banding tape pressed at 200o C with hot melt glue on special machines.

8.SIDE TABLE



Providing and supplying Side table of an overall size 450x450x450mm with top made of 12mm thick beveled glass and understructure with a shelf is made of 18mm thick prelaminated particle board with all exposed edges sealed with 2mm PVC edge banding tape and unexposed edges sealed with 0.6mm PVC edge banding tape pressed at 200o C with hot melt glue on special machines.

9. CONFERENCE TABLE 16 Seater



Providing & Fixing Conference Table of height 750mm with two seater module of size 1350(W)x550(D). The top made of 36mm thick MDF board pressed with 0.4mm thick membrane foil clad pressed with PU glue. The foil is precoated with a layer of polyurethane for better scratch resistance. The table vertical are made of 25mm thick postformed particle board & modesty made of 18mm thick prelaminated particle board with decorative laminate on both sides. All the edges are sealed with 2mm PVC edge banding tape and unexposed edges sealed with 0.6mm PVC edge banding tape pressed at 200o C with hot melt glue on special machines. The Round corner piece is made up of 36mm thick MDF board pressed with 0.4mm thick membrane foil clad pressed with PU glue and supported with post of 65mm dia made of CRCA sheet duly powder coated.

10. CANTEEN TABLE



Table of size 1800x900x750 with top made of 25mm particle board having post formed edges with 0.6mm thick laminate pressed on one side & balancing laminate on other side with all exposed edges sealed with 2mm PVC edge banding tape pressed at 200 deg C with hot melt glue on special machines. The understructure of table is made up of 1.2mm CRCA steel pipes of 40x40, 40x20, 20x20mm duly powder coated. Leveler is provided for adjusting any unevenness of floor area.

11. EXAMINATION COUCH



Frame work rectangular & square steel tubes with adjustable back rest by hand lever two section cushioned top legs fitted on PVC stands ,pre treated epoxy powder coated.

12. PATIENT STOOL



Four leg base fitted with PVC stumps.Height adjustable. A foot rest ring support made of MS tube. SS top supported with ms sheet top.

13. SLIDING CURTAIN



Ms tubular construction made of 19 mm x18 G in three section legs made made of 25 mm x18 G fitted with 50 mm dia castors middle span 1210 mm wide and side span 610 mm supplied with hooks and springs with curtain cloth finish pre treated and epoxy powder coated

14. SOFA



Wooden Sofa :- Fully upholstered sofa with good quality seasoned wood duly anti termite treated. In seat, good quality flat spring steel are used and are covered by "U" foam. Seat cushion has premium quality rubber . The back is made of high density foam duly upholstered with fabric or leatherite. The armrest are made of seasoned teakwood duly sprit polished.

15. HIGH BACK REVOLVING CHAIR



High	Back	Revolving	Chair
Upholstry/Frame:	12 mm hot pressed ply in seat and back with PU moulded foam and fabric upholstery with PVC lipping all around.		
Seat & back size :	480 mm (w) x 440 mm (D) ,	480 mm (w) x 720 mm (H)	
Arms:	Steel inserted	PU	arms
Mechanism :	Central	tilt	mechanism.
Height Adjustment :		Gas	Lift
Base : Steel inserted nylon base with twin wheel castors			

16. MEDIUM BACK REVOLVING CHAIR



Medium	Back	Revolving	chair
Upholstry/Frame:	12 mm hot pressed ply in seat and back with PU moulded foam covered with fabric and PVC lipping all around		
Seat & back size :	480 mm (w) x 440 mm (D) ,	480 mm (w) x 460 mm (H)	
Arms:	Steel inserted PU arms		Mechanism :
Central		tilt	mechanism.
Height Adjustment :		Gas	Lift
Base : Steel inserted nylon base with twin wheel castors			

17. MULTISEATER CHAIR



Double & Triple seater multi seater chair with perforated metal sheet duly powder coated with arms in capsule pipe, side in 2" round pipe and bottom support in 3" x 1/2" in 14 gauge.

18. DINING CHAIR



Cafeteria chair having moulded laminated ply in seat with chrome plated legs & frame.

19. DOUBLE FOOT STEP



Providing Double Step of Overall approx size: 450 mm (L) x 450 mm (W) x 450 mm (H) with S.S. Tubular frame fitted with PVC Stumps having Stainless Steel Sheet duly double press bent.

20. XRAY VIEW BOX : as approved by Engineer/Client