HSCC (I) Ltd (A Govt of India Enterprise)

Tender

For

Supply & installation of Modular type office furniture & work stations for HSCC corporate office Noida"

Volume-III

Specifications

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PQ tender No. HSCC/Fur/2013

TECHNICAL SPECIFICATION

Supply & installation of Modular type office furniture & work stations for HSCC corporate office Noida"

- **Following Basic Material to be Used in Office 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
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.

ITEM SPECIFICATIONS :

WORKSTATIONS:

Providing & Fixing tile based system of overall thickness 65 mm having inner frame work of CRC steel covered with tiles on both sides and covered with aluminium powder coated trims on top and end sides. Partition has steel raceway at bottom and at the middle level. Partition system provides option of various kinds of tiles. All metallic parts undergo a 7 stage antirust treatment and are powder coated in matt finish to a thickness of 40-60 microns. The modular partitions are independent and not grouted in the floors. The modular partitions are an assembly of the following parts:-

Frames - Frame forms the basic support structure for all other components. The main vertical member of the frame bearing all the load is made of 1.2mm CRCA steel and the horizontal members are made of 1.0mm CRCA steel. The frames also have prefabricated slots for fixing brackets to support worktops, sharer tops, gable ends, overhead hampers etc. The bottom modulles are mounted over a skirting of 135mm height. The skirting is designed so that switch cutout can be provided at the skirting level and are snap fitted on both sides with skirting raceway plates made of 0.8mm thick CRCA steel.

Levellers - Each frame is provided with two Nos. 12mm leveling bolts which allows 10-25mm adjustment for floor unevenness.
Post - The frames are inter connected at the junctions by aluminium connectors/posts. The posts are made of aluminium extrusions of 1.2mm thickness duly powder coated.
Trims : The exposed vertical and horizontal faces of the frames are snap fitted with curve trims. The trims are made of aluminium extrusions of 1.5 mm thickness and 65 mm width and are covered with ABS caps.

GROOVE COVERS - The vertical gaps between the tiles shall be properly and uniformely maintained and shall be vertically covered by fixing specially extruded aluminium section to maintain uniform groove on both the sides of the partition.

WIRE MANAGMENT - Partitions system has concealed wire management capabilities to meet requirement and are engineered for responsive and safe operations of power, telecommuncations and data (LAN). It has seperate 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.

TILES - The Partition tiles are provided in Pre Laminated Particle Board/Fabric on Soft board/White Marker Laminate / Magnetic/perforated metal/Glass Finishes.
The **PRELAMINATED PARTICLE BOARD TILE** are provided in 12mm Prelaminated Particle Board with decorative laminate on top and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 200○ C with hot melt glue on special edge banding machine. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

The **FABRIC TILES** are made of 9mm softboard inside and backed by 3mm MDF board & covered with fabric pasted on them by PVA glue. The tiles are supported with Tile Hook made of MS steel sheet duly galaunised to clip on to the partition frame.
The **MARKER TILES** are made up of 9mm particle board pasted with 1mm white

marker laminate, on the exposed face having all exposed edges sealed with PVC edge banding tape, pressed at 200○ C with hot melt glue on special edge banding machine. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

Linear work top 25mm Post formed

Providing and fixing post formed work surface made of 25 mm thick plain particle board with 0.7 mm decorative laminate on top & 0.6 mm thick balancing laminate on unexposed face with front edge profiled in desired shape. All exposed edges are sealed with 2 mm thick PVC edge banding tape pressed at 200oC with hot melt glue on special machines. The worktop is supported with cantilever brackets made of MS steel duly powder coated. Work surface is also provided with ABS wire manager of 50mm dia.

Drawer Unit

Providing & Fixing **drawer pedestal unit with 2 drawer & 1 filling** of an over all sizes 450x575x725. The drawer unit is made of 18mm thick prelaminated particle board with all exposed edges sealed with 2mm thick PVC edge banding tape and unexposed edges sealed with 0.6mm PVC banding tape pressed at 200o C with hot melt glue on special machines. The inner drawer is made of 0.6mm CRCA steel duly powder coated & has proper locking arrangement with drawer sliding on nylon rollers channels.The pedestal drawer is mounted on adjustable levellers.

GableEnd

Providing & fixing verticals made up of 18mm thick prelaminated particle board having decorative laminate on both sides . All the exposed edges are sealed with 2mm PVC edge banding tape pressed at 200oC with hot melt glue on special machines

CPU Trolly

Providing & Fixing **CPU trolley** of 240mm height with adjustable width from 220 to 320mm width made of 1.6mm thick CRCA steel sheet duly powder coated with 2 Nos. lockable castors & 2 Nos. non lockable castors & 2 nos non lockable castors.

Keyboard

Providing & fixing **keyboard tray** of size 500x220x75mm made up of 1.2mm thick CRCA steel sheet duly powder coated. The Keyboard tray runs on ball slides for smooth movement.

Storage

Providing & Fixing Storage units having an overall size 1200 mm (W)X450mm(D)X1800mm (H) of 4500mm depth with top made of 25mm post forming

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 pressed at 200oC with hot melt glue on special machines, with proper locking arrangement. The shelves are made of 18mm thick prelaminated particle board.

TABLE WITH KEYBOARD & CPU

Providing & fixing Executive table of an overall size 1500x750x750 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 has a provision for wire manager caps at top.

Providing & fixing keyboard tray of size 500x220x75mm made up of 0.8mm thick CRCA steel sheet duly powder coated. The Keyboard tray runs on ball slides for smooth movement.

Providing & Fixing CPU trolley of 240mm height with adjustable width from 220 to 320mm width made of 1mm thick CRCA steel sheet duly powder coated with 2 Nos. lockable castors & 2 Nos. non lockable castors.

SIDE UNIT FOR TABLE

Side Storage Unit of overall size 900x450x725 with top made of 25mm thick post formed particle board 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 .

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

VISITOR 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 460 mm (H)
Arms: Steel inserted PU arms
Base : Fixed steel base with PVC shoes

Medium Back Revolving Workstation Chair

Upholstry/Frame: PU mould in seat & Back with ABS/ PP Cover & Fabric upholstery, Seat & back size : 490 mm (w) x 460 mm (D) , 430 mm (w) x 500 mm (H),Arms: Steel inserted PU arms ,Mechanism : Push back mechanism ,Height Adjustment : Gas Lift ,Base : Steel Inserted nylon base with twin wheel castors