

National Veterinary-Ayurveda ,Research Institute & Hospital(NVARI & H)
(Central council for Research in Ayurvedic & Science, Ministry of Health &
Family Welfare ,Govt.of India)

Tender

For

**Supply, installation, testing & commissioning of Modular Type offices
& Laboratory Furniture's & associated works etc at NVARI & H
,Lucknow**

Volume-III

Technical Specifications

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TECHNICAL SPECIFICATION FOR Supply, installation, testing & commissioning of Modular Type Office and Laboratory furniture's & associated works etc at NVARI&H, Lucknow

❖ Following Basic Material to be Used in Furniture's 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 :

<u>Material Type</u>	<u>Description/ Selection Criterion</u>
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 (for all thickness)	:	min 0.5 N/mm square.
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 :

TABLE FOR SCIENTIST ROOM:

Providing and fixing of table of size 1800x900x750 with top made of 25mm thick plain particle board having 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. The table also has a provision of drawer of size 450x575x725 made up of 18mm thick pre laminated particle board with Keyboard with mouse pad & CPU are made up of CRCA Steel.

Providing & Fixing Back Units of an over all sizes 1300x450x750 ht mm with top made up of 25mm postformed particle board with 0.6mm decorative laminate pressed on it. The understructure is made of 18mm prelaminated particle board having openable shutters. All the exposed edges of the storage 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, with proper locking arrangement. The shelves are made of 0.8mm thick CRCA steel sheet duly powder coated.

CONSULTANT TABLE

Providing and fixing of table of size 1500x750x750 with top made of 25mm thick plain particle board having 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. The table also has a provision of Keyboard with mouse pad & CPU are made up of CRCA Steel

Providing & Fixing Side Storage Unit of overall size 1050x520x725 with top made of 25mm thick postformed 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

OFFICE TABLE

Providing and fixing of table of size 1200x600x750 with top made of 25mm thick plain particle board having 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. The table also has a provision of Keyboard with mouse pad & CPU are made up of CRCA Steel

TABLE WITH DRAWER ,SIDE UNITS , KEY BOARD & CPU

Providing and fixing of table of size 1800x900x750 with top made of 25mm thick plain particle board having 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. The table also has a provision of drawer of size 450x575x725 made up of 18mm thick pre laminated particle board with Keyboard with mouse pad & CPU are made up of CRCA Steel

Providing & Fixing Side Units of an over all sizes 1050x450x750 ht mm with top made up of 25mm postformed particle board with 0.6mm decorative laminate pressed on it. The understructure is made of 18mm prelaminated particle board having openable shutters. All the exposed edges of the storage 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, with proper locking arrangement. The shelves are made of 0.8mm thick CRCA steel sheet duly powder coated.

STAFF / LIBRARY TABLE

Providing and fixing of Table of an over all sizes 1800x900x750 with top made of 25mm particle board having PVC lipping 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. Leveller is provided for adjusting any unevenness of floor area.

RECEPTION TABLE

Providing and fixing 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

ROUND TABLE FOR CANTEEN

Providing & Fixing round shaped Table of dia 900mm with top made of 25mm prelaminated particle board and understructure made up 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

CONFERENCE TABLE

Providing & Fixing of Conference Table of height 750mm with two seater module of size 1370(W)x600(D). The top made of 37mm 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. The complete table unit is made up of combination of tables and round corner pieces as per site measurements

BED

Supply & fixing single bed without box of an overall size 900(L)x1800(B)x450(H). The Head side of 900mm height & foot side of 500mm height are made up of 36mm (18+18) commercial board with half round postformed edge on top surface with 0.6mm postforming laminate. The sides of 300mm height are made up of 18mm commercial board with half round postforming edge on top surface. The base is made of 12mm commercial ply supported with wooden battens. All exposed edges are sealed with 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 bed isto be supplied with mattresses of 50 density make approved by E.I. Box type construction of bed is required for storage purpose

BED SIDE TABLE

Providing and fixing Side Table of an over all sizes 450x450x450 with top made of 25mm thick particle board with post formed laminate on top & balancing laminate on unexposed face. The understructure is made of 18mm thick prelaminated particle board with both side laminate having all exposed edges sealed with PVC edge banding tape pressed at 200o C with hot melt glue on special machines.

CORNER TABLE

Providing and supplying Side table of an over all sizes 550(W)x550(D)x510(H) with top made of 12mm thick bevelled glass and understructure with a shelf is made of chrome plated steel legs

CENTER TABLE

Providing and supplying center Table with top made of 12mm thick bevelled glass and understructure with a shelf is made of chrome plated steel legs

COFFEE TABLE

Providing & Fixing round shaped Coffee Table of dia and ht 600mm with top made of 25mm prelaminated particle board and understructure made up 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

TV UNIT

Providing and fixing T.V. unit of an overall size 1200x450x750 with top made of 25mm thick particle board having Post formed laminate on top & understructure made of 18mm Pre Laminated Particle Board. The unit has two openable Glass shutter on both sides with shelf and one drawer with open space in middle with all exposed edges sealed with PVC edge banding tape with proper locking arrangement

DRESSING TABLE

Providing & Fixing dressing unit of overall size 900x450x600 with top made of 25mm thick postformed particle board and understructure made of 18mm prelaminated particle board, having one openable drawer. 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

GLASS RACK

Providing & Fixing Glass Rack of overall size 890x400x1890h with body made of CRCA steel duly powder coated and vertical sides made of 25 mm prelaminated particle board with all exposed edges sealed with 2mm thick PVC edge banding tape and unexposed edges sealed and unexposed edges sealed with pressed at 200o C with hot melt glue on special machines

LOW HT STORAGE

Providing & Fixing Storage Units of an over all sizes 900x450x1230 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 CRCA steel sheet of 0.8mm thickness duly powder coated.

CLOSED STEEL RACK

Providing & Fixing metal shelving rack closed from three sides as per ISI : 1883/75 with angels of size 40x40x2mm. MS shelves and corners are provided in 1mm thick & 75mm long. The complete steel rack is duly powder coated.

STEEL ALMIRAH

Providing and fixing office almirah of an overall size 916x480x1980(h) with CRCA body of 0.8mm thick duly powder coated with openable shutters having proper inbuilt locking arrangement with rod and handle. The almirah has 4 shelves making 5 compartments.

CHEMICAL STORAGE (1000 (L) X 486 (D) X 1800 (H))

Providing & Fixing Chemical Storage Cabinet having following features:-

- * Complete Structure made up of heavy duty, durable, chemical resistant aluminium channels with exoxy powder coating internal paneling.
- * Shelves made up of "Phenolic resin Laminates" (6mm thick). Chemical & heat resistant & fire retardant.
- * Front doors are provided with safety glass fitted in aluminium channels with sliding movement with lock & key arrangement with visible internal storage area.
- * Storage facility:- Total 4 nos. shelves with compartments having 400mm height each is provided along with PP trays to store chemical bottles.

FLOOR MOUNTED STORAGE

The floor mounted cabinet with steel shutter are made up of 0.8mm thick S.S. sheet. The shutters are fixed with auto closing hinges. The drawer trays are mounted on telescopic slides. Multipurpose Locks to be provided for locking

The floor mounted cabinet with steel shutter are made up of 0.8mm thick M.S. Sheet which are epoxy powder coated with thickness of 50-60 microns. The shutters are fixed with auto closing hinges. The drawer trays are mounted on telescopic slides. Multipurpose Locks to be provided for locking.

FLOOR MOUNTED SINK UNITS 900(W) x 570(D) x 675(H) 2 Shutter

The floor mounted cabinet with sink cut out are made up of 0.8mm thick S.S. sheet. The shutters are made up of 0.8mm thick SS sheet. The shutters are fixed with auto closing hinges. The drawer trays are mounted on telescopic slides. Multipurpose Locks to be used for locking purpose.

The floor mounted cabinet with sink cut out are made up of 0.8mm thick M.S. sheet. The shutters are made up of 0.8mm thick M.S. Sheet which are epoxy powder coated with thickness of 50-60 microns. The shutters are fixed with auto closing hinges. The drawer trays are mounted on telescopic slides. Multipurpose Locks to be used for locking.
900(W) x 570(D) x 675(H) 2 Shutter

LEGSPACES

Providing & fixing Legspace with a provision of Slim Drawer of 150mm Ht. Drawer front is made up of 1.0mm thick S.S. sheet. The drawer trays are mounted on telescopic slides.
600(W) with slim drawer of Ht. 150mm

Providing & fixing Legspace with a provision of Slim Drawer of 150mm Ht., the drawer front is made of M.S. material of drawer is epoxy powder coated with powder coating thickness of 50-60 microns. The drawer trays are mounted on telescopic slides.
675(W) with slim drawer of Ht. 150mm

UNDERSTRUCTURE STAND

The storage understructure stand is made up of 1.2mm thick, 30mmx30mm heavy duty S.S. Square tubes. The understructure stand consists of 4 height adjusters which takes care of all levelling aspects.
450(W)x425(D)x175(H), 600(W)x425(D)x175(H), 900(W)x425(D)x175(H), CORNER
900(W)x425(D)x175(H)

The storage understructure stand is made up of 1.2mm thick, 30mmx30mm heavy duty M.S. Material of understructure is epoxy powder coated with powder coating thickness

40-50 microns .The understructure stand consists of 4 height adjusters which takes care of all levelling aspects.

450(W)x425(D)x175(H)

600(W)x425(D)x175(H)

900(W)x425(D)x175(H)

CORNER 900(W)x425(D)x175(H)

REGENT SHELF (WITH UNDER STRUCTURE TABLE)

Regent Shelves of Ht. 600Mm with complete modular design consists of horizontal 2 stage storage shelves. The end vertical support and horizontal shelves are made up of 0.8mm thick SS Sheet. The horizontal shelf have a provision for fixing the service panel to it. The service panels carry electrical switches and socket cut-outs. Each understructure table of Ht.900mm consist of 4 height adjusters that takes care of all leveling aspects.

MAIN MODULE

900(W)x300(D)x600(H)

1200(W)x300(D)x600(H)

ADD-ON-MODULE

900(W)x300(D)x600(H)

1200(W)x300(D)x600(H)

Regent Shelves of Ht. 600Mm with complete modular design consists of horizontal 2 stage storage shelves. The end vertical support and horizontal shelves are made up of 0.8mm thick MS Sheet. The horizontal shelf have a provision for fixing the service panel to it. The service panels carry electrical switches and socket cut-outs. The carcass is of 1.2 mm thick 30mm x 30mm heavy duty ERW MS square tubes. The structure of the unit is epoxy powder coated with powder coating thickness as 45-50 microns. Each understructure table of Ht.900mm consist of 4 height adjusters that takes care of all leveling aspects.

MAIN MODULE

900(W)x300(D)x600(H)

1200(W)x300(D)x600(H)

ADD-ON-MODULE

900(W)x300(D)x600(H)

1200(W)x300(D)x600(H)

WORKTOP

It shall be 20 mm thick jet black granite with edges having -round profiles of 5 mm radius on top side. The overhang on the storage cabinet is 40 mm at the front side and 50

mm at the side. It should also have a V-Groove cut at 30 mm from the front edge. The backing material used for granite is a neoprene mat of 6 mm thickness

WORKTOP MADE UP OF SS with flat edges curved falling down and backing material used for this is Pre-Laminated Particle Board OF 1.2MM THICKNESS

CERAMIC SINK WITH WATER SAVER 1 WAY BRASS FAUCET

Ceramic sink make Hindware of size (L x W x D) to be 515 x 375 x 145 mm. WITH 1 WAY FALL DOWN BRASS WATER SAVER FAUCETS

EXECUTIVE CHAIRS

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

EXECUTIVE VISITOR CHAIRS

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

STAFF CHAIRS

CONFERENCE CHAIRS

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

SCIENTIST ROOM CHAIRS

High Back Revolving Chair: Upholstry/Frame: One piece ply in seat & back with foam & polyfill and leatherite upholstery Seat & back size : 750 mm (w) x 750 mm (D) , x 1150-1230 mm (H) Arms: Stainless Steel elliptical and round tubular structure Mechanism : Syncrotilt mechanism/ Height Adjustment : Gas Lift:
Pedestal Assembly: made of High pressure Die cast aluminium fitted with 5 nos twin wheel nylon . The pedeatal is 650mm thik center diameter .

SCIENTIST ROOM VISITOR CHAIRS

High Back Revolving Chair: Upholstry/Frame: One piece ply in seat & back with foam & polyfill and leatherite upholstery Seat & back size : 615 mm (w) x615 mm (D) , x 955 mm (H) Arms: Stainless Steel elliptical and round tubular structure. Base :1.2
Elliptical Ms ERW Tube with base plate for seat fixing.

CANTEEN CHAIRS

Canteen Chair having L-type moulded laminated ply with chrome plated base

BED ROOM CHAIRS

Single seater premium lounge sofa is a flexible back lounge seating system standing on beam with frame assemblies.

Side frame & Assymbly : The side frame assymbly is fitted to two ends of the connecting beam assymbly to form the leg cum armrest assymbly it is made of a MS ERW tube dia 3.81 cm x 14 BG thick and black powder coated. the ends are fitted with ABS moulded end caps.

Seatrest Assymbly : The seatrest assymbly consists of fabricated inner frame assymbly with moulded PU foam having density 45+-2 kg/ cm³ and is covered with fabric.

Back rest assymbly : The backrest assymbly is flexible type and consists of a fabricated inner frame assymbly with moulded PU foam having density 45+-2 kg/cm³ and is covered with fabric.

MULTISEATER

Triple seater multiseater chair having moulded laminated ply in seat & back with wooden arms, 19 mm CRC pipe steel frame duly powder coated with side in :D" pipe and base in 1 1/2" pipe in 14 gauge.

SOFA

Fully upholstered sofa with good qulaity seaosed 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.

SEMINAR ROOM CHAIR

Half desk chair made up of 25 mm CRCA pipe frame 'S' shape with 12 mm moulded ply with moulded PU foam in seat & back with PVC liping. Half writing board is made up of 18 mm pre-laminated particle board with edge sealed with 2mm pvc edge banded tap. The chair is provided with wire mesh tray at bottom duly powder coated.

LAB STOOL

Revolving stool with back having powder coated steel fixed base with shoes having manual height adjustment mechanism with an option of leatherite or fabric upholstery in seat and back.

LCD TV

LCD TV of size 32" LG/ Samsung/ Sony make with provision of HDMI, USB port, including electrical works/ wiring/ wall chasing.

REFRIGERATOR

Refrigerator of 185 Lt atleast 2 star rating of Godrej/ LG/ Samsung make with all related electrical accessories.

LIST OF APPROVED MAKES : PLUMBING WORKS

S.No.	Materials	Relevant IS Code	Manufacturers
1.	Vitreous China Sanitary ware	2556	Hindustan Sanitary ware, Cera, Kohler, American standard
2.	White Glazed Fire Clay Sink	771	Sanfire, Cera, Neycer, Hindware.
3.	Stainless Steel Sink		Jayna, Jaguar, Commander, Nirali
4.	Plastic seat cover of W.C	2548	Commander, Cera, Kohler Jaquar, American standard
5.	Geyser		Racold, Jaguar, Rheem, Usha Lexus
6.	C.P. Fittings Mixer/Pillar taps	1795	Aquabaths, Othello, Jaquar, Kingston, Marc
	Washers, C.P. brass accessories	4291/4827	
7.	Centrifugally /Sand cast iron pipes & fittings	3989/1729	Neco, Hepco, SKF
8.	G.I. Pipes	1239 Part I	Jindal-Hissar, Tata, Prakash-Surya B.S.T., SAIL,
9.	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto Zenith
10.	Gunmetal Valves	778	Zoloto, Leader,
11.	Brass stop & Bib Cock	781	Zoloto, Sant, L&K, Jaquar
12.	Ball valve with floats	1703	Zoloto, Leader, Sant, Jayco
13.	Stoneware pipes & Gully Traps	651	IS Marked pipes
14.	R.C.C. pipes	458	IS Marked pipes
15.	D.I. Manhole Covers	1726	RIF, NECO, SKF
16.	Water Tank		Sintex, Polycon, Uniplast
17.	Mirror		Golden, Atul, Modi guard Gujrat Guardian
18.	Hand drier		Kopal, Automat, Euronics
19.	PVC flusing cistern		Commander, Parryware, Duralite
20.	Insulation of Hot water pipes		Vidoflex insulation, Superlon, Paramount Kaiflex

21.	PVC Rain Water Pipes.		Supreme, Prince, Finolex. Oriplast
22.	D.I pipes		Jindal, Tata, Electrosteel.
23.	Sluice valve / NRV		Kirloskar, Kilburn, Zoloto Castle,
24.	Water supply pumps	:	KIRLOSKAR, WILO, GRUNDFOS
25.	Submersible pumps	:	KIRLOSKAR, GRUNDFOS, KSB, Mather & Platt
26.	UPVC pipes & fittings	;	Finolex , Prince, Supreme, Oriplast
27.	Chlorinator	:	ALFA, USA, Ion exchange, Sigma DH Combine Inc.
28.	HDPE Solution tank	:	WATCON, ION EXCHANGE, Water Supply Specialist P (Ltd)
29.	C.P Flush Valves	:	Jaquar, DOCOL(Germany) marketed by GEM, Ideal
30.	C.P Angle Valves, bib cock	:	Othello, Jaquar, Marc, Kingston ,Aquabaths
31.	Decorative bath room fittings	:	Jaquar (Florentine range), Marc (equivalent) Aquabaths (equivalent)