

To,
All Bidders

Amendment-II

Subject : Package-I : Supply, installation, testing & commissioning of Modular type office Furniture works & other associated works including other miscellaneous works like minor civil, electrical, PHE works etc. for All India Institute of Ayurveda (AIIA), Sarita Vihar, New Delhi”.

Dear Sir,

This has reference to the prebid meeting held on **05.12.2013 at 11:00 hrs** at HSCC corporate office Noida for the subject works,

The following AMMENDMENT-II/CLARIFICATION-II may be noted, which shall be treated as a part of the contract to be submitted along with tender:

S. No	Pre-Bid meeting Queries raised by bidders	Clarifications
1	Materials Specification of Volume-III of Technical specification for Pre Laminated And Twin Particle Boards : Testing Strength perpendicular to surface: min 0.05 N/mm ² for the thickness- As per BIS the tensile strength perpendicular to surface a) 0.45 N/ mm square upto-20mm thickness and b) 0.4 N/ mm square above 20 mm thickness	Testing strength for Pre Laminated And Twin Particle Boards will be as per BIS i.e a) 0.45 N/ mm square upto-20mm thickness and b) 0.4 N/ mm square above 20 mm thickness
2	Materials Specification of Volume-III of Technical specification for Pre Laminated And Twin Particle Boards : Screw withdrawal strength on face min 1550 N- As per BIS the screw withdrawal strength on face : min 1250 N	Screw withdrawal strength for Pre Laminated And Twin Particle Boards will be as per BIS is : minimum 1250N
3	The specifications mentioned are a mix of Exterior Grade I & Grade II, then it is better to write down that all the board used should be Exterior Grade-I	As per tender conditions

4	Work station of Volume-III of technical specification- Tiles, the partition tiles shall be provided in prelaminated particle board/ Fabric on soft Board/ white Marker Laminate/ Magnetic 12mm- Most of the companies use 900 tiles.	As per tender conditions
5	Work station of Volume-III of technical specification- Double Skinned Glass Tiles is made up of 5mm thick clear glass- Most of the clients prefer single skin glass.	As per tender conditions
6	Shiridi & action should be included in the name of approved make Board and saint Gobinda in the name of approved make in glass, Ebco & Hittch in the name of approved make for Locks.	As per tender conditions
7	The technical specification does not match with that of tender BOQ	The revised/superseded technical specification as Volume-III is enclosed below as Annexure-I, which shall be followed for the subject works for further reference.

Other all terms & conditions of tender shall remain unchanged.

Prospective bidders are advised to regularly scan through HSCC web site as corrigendum/amendments etc., if any, will be notified on HSCC web site and separate advertisement will not be made for this.

(A.K.Sinha)
Project Coordinator

ANNEXURE-I
TECHNICAL SPECIFICATION FOR FURNITURE/FURNISHINGS FOR

Package-I : Supply, installation, testing & commissioning of Modular type office Furniture works & other associated works including other miscellaneous works like minor civil, electrical, PHE works etc. for All India Institute of Ayurveda (AIIA), Sarita Vihar, New Delhi”.

❖ 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 :

<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	:	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.
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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(+/-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.

PHOTOGRAPH (Only indicative, actual may differ as pre requirements and approved by Engineer/Client) AND SPECIFICATIONS FOR AIIA SARITA VIHAR, New Delhi is as follows :

S.NO. DESCRIPTION

A MODULAR ITEM

1 PARTITION 65 MM THK 1230mm Ht.



Tile Based Partition System of 65mm thickness having inner framework of CRCA steel of Grade D as per IS:513 covered with tiles on both sides and covered with aluminium powder coated trims on top and end sides. Partition has steel raceway at bottom level. Partition system provides option of various kinds of tiles like pre-laminated board tiles, fabric tiles & white marker 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:-

FRAME - 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 0.9mm CRCA steel. The frames also has prefabricated slots for fixing brackets to support worktops, gable ends etc. Bottom level of frame is provided with Skirting raceway of 132mm Ht made up of CRCA steel 0.7mm. The skirting is designed so that switch cutout can be provided at the skirting level and are snap fitted on both sides with plates made of 1mm thick Galvanized steel.

TILES :-

BOTTOM TILES:-

The **Prelaminated Particle Board** tile are provided in 12mm Prelaminated Particle Board of Grade II type II as per IS:12838 with decorative laminate on top and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with holt melt glue on multistage edge banding machine. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

UPPER TILES can be in following options:-

The **Fabric Tiles** are made of 11mm high density soft board inside covered with 3mm foam and fabric pasted on them . The tiles are supported with Tiles Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

The **Marker Tiles** are made up of 9mm particle board pasted with 0.8mm white marker laminate, on the the exposed face and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with holt melt glue on multistage edge banding machine. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

TRIMS -The exposed vertical and horizontal faces of the frames are snap fitted with curve trims. The trims are made of aluminum extrusions of 1.3mm thickness and 65mm width and are covered with ABS caps.

CORNER POST- At 2-way 90° joint the frame are connected by post of aluminium extrusions of 1.2mm thickness using special designed fastners.

JUNCTION CONNECTOR- The frames are connected by interlocking extrusions connectors at the(3-way 90°, 4-way 90°) joint using special designed fastners.

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

WIRE MANAGEMENT - Partitions system 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.Separate Middel raceway can be provided as per requirement below or above the worktop level.

LEVELLERS - Levellor of M10 size having base of ABS are provided in each frame which allow 10-25mm adjustment for floor unevenness.

ii **WORKKTOP**



Providing & fixing Work Top made up of 25mm thick prelaminated particle board having decorative laminate on top and balancing laminate on unexposed face, All exposed edges are sealed with 2mm PVC edge banding pressed at 200o C with hot melt glue on special machines. The worktop is supported with cantiliver brackets made of MS steel duly powder coated. Worksurface is also provided with ABS wire manager of 50mm dia.

a WS - SIZE - 2100X1800X 600 MM FOR FOR EACH PERSON
(SEATING FOR FOUR PERSON)

b WS - SIZE - 2100X1800X 600 MM FOR FOR EACH PERSON
(SEATING FOR TWO PERSON)

c WS - SIZE - 2100X1800X 600 MM FOR FOR EACH PERSON
(SEATING FOR ONE PERSON)

2 **LOW HT.PARTITION 65 MM THK 1230mm Ht.**

Tile Based Partition System of 65mm thickness having inner framework of CRCA steel of Grade D as per IS:513 covered with tiles on both sides and covered with aluminium powder coated trims on top and end sides. Partition has steel raceway at bottom level. Partition system provides option of various kinds of tiles like prelaminated board tiles, fabric tiles & white marker 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:-

FRAME - 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 0.9mm CRCA steel. The frames also has prefabricated slots for fixing brackets to support worktops, gable ends etc. Bottom level of frame is provided with Skirting raceway of 132mm Ht made up of CRCA steel 0.7mm. The skirting is designed so that switch cutout can be provided at the skirting level and are snap fitted on both sides with plates made of 1mm thick Galvanized steel.

TILES :-

BOTTOM TILES :-

The **Prelaminated Particle Board** tile are provided in 12mm Prelaminated Particle Board of Grade II type II as per IS:12838 with decorative laminate on top and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with hot melt glue on multistage edge banding machine. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

UPPER TILES

The **Fabric Tiles** are made of 11mm high density soft board inside covered with 3mm foam and fabric pasted on them . The tiles are supported with Tiles Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

The **Marker Tiles** are made up of 9mm particle board pasted with 0.8mm white marker laminate, on the the exposed face and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with hot melt glue on multistage edge banding machine. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

TRIMS -The exposed vertical and horizontal faces of the frames are snap fitted with curve trims. The trims are made of aluminum extrusions of 1.3mm thickness and 65mm width and are covered with ABS caps.

CORNER POST- At 2-way 90° joint the frame are connected by post of aluminium extrusions of 1.2mm thickness using special designed fastners.

JUNCTION CONNECTOR- The frames are connected by interlocking extrusions connectors at the(3-way 90°, 4-way 90°) joint using special designed fastners.

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

WIRE MANAGEMENT - Partitions system 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. Separate Middel raceway can be provided as per requirement below or above the worktop level.

LEVELLERS - Leveller of M10 size having base of ABS are provided in each frame which allow 10-25mm adjustment for floor unevenness.

3 65MM THICK TILE BASED PARTITION (FULL HEIGHT)



Tile Based Partition System of 65mm thickness having inner framework of CRCA steel of Grade D as per IS:513 covered with tiles on both sides and covered with aluminium powder coated trims on end sides. Partition has steel raceway at bottom level. Partition system provides option of various kinds of tiles like prelaminated board tiles, fabric tiles & white marker 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 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 0.9mm CRCA steel. The frames also have prefabricated slots for fixing brackets to support worktops, sharer tops, gable ends, overhead hampers etc. Bottom level of frame is provided with Skirting raceway of 132mm Ht made up of CRCA steel 0.7mm. The skirting is designed so that switch cutout can be provided at the skirting level and are snap fitted on both sides with plates made of 1mm thick zinc coated steel. In frame structure the Main vertical Member are placed at a maximum distance of 1200mm and can be less as per site requirement and Horizontal member/channels are provided at the break of tiles and raceway as per the requirement.

TILES OPTIONS :-

BOTTOM TILES :-

The **Prelaminated Particle Board** tile are provided in 12mm Prelaminated Particle Board of Grade II type II as per IS:12838 with decorative laminate on top and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with holt melt glue on multistage 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 **Metal Tiles are** made up of CRCA of 0.7mm thickness The tiles undergo a 7 stage antirust treatment and are powder coated in matt finish to a thickness of 40-60 microns. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

UPPER TILES:-

The **Fabric Tiles** are made of 11mm high density soft board inside covered with 3mm foam and fabric pasted on them . The tiles are supported with Tiles Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

The **Marker Tiles** are made up of 9mm particle board pasted with 0.8mm white marker laminate, on the the exposed face and white balancing on unexposed face, having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with holt melt glue on multistage 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 on Magnetic tile** are made up of GI sheet of 0.6mm inside covered with 3mm foam and fabric pasted on them . The tiles are supported with Tiles Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

The **Glass Tile** - is made up aluminium frame work having 5mm thick clear Glass inserted in it using transparent rubber beading and is fixed for both side of partition. These glass tiles are completely inter changeable with other regular tile. The tiles are supported with Tile Hook made of MS steel sheet duly galvanized to clip on to the partition frame.

Top & Wall Joinery - Full Height Partitions are provided with top adjustors which allows 10-50 mm adjustment for ceiling unevenness. C-cover made of CRCA steel 0.7mm thick duly powder coated is provided to cover the gap coming across wall and ceiling adjoining to partition.

CORNER POST- At 2-way 90° joint the frame are connected by post of aluminium extrusions of 1.2mm thickness using special fastners designed for it.

JUNCTION CONNECTOR- The frames are connected by interlocking extrusions connectors at the(3-way 90°, 4-way 90°) joint using special fastners designed for it

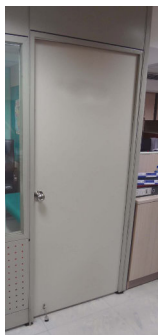
GROOVE COVERS - The vertical gaps between the tiles can be properly and uniformly maintained and can be vertically covered by fixing specially extruded aluminium section to maintain uniform groove on both the sides of the partition.

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

4

DOOR UNIT



The **Flush Door Unit** in the full height partition made of machine cut 32mm commercial block board. Further faced with 0.8mm laminate of approved shade on both sides having all exposed edges sealed with PVC edge banding tape, pressed at 180° C with hot melt glue on multistage edge banding machine.. The door unit is provided with the following fixtures in each door shutters.

1. Door frame to be made up pressed CRCA steel of 1.2mm fabricated and duly powder coated.
2. MS Powder coated hinges 4 Nos.
3. Door Lock cylindrical type- 1 No
4. Hydraulic door closure with double speed adjustment with necessary accessories and screws- 1 No
5. Die casted floor door stopper - 1 No.

B LOOSE FURNITURE (WS/ TABLE WITHOUT PARTITION)



1

Providing & fixing Free standing workstation table with Top made up of 25mm Prelaminated MDF board having decorative laminate 0.8mm on top and balancing laminate on unexposed face, All exposed edges are sealed with 2mm PVC edge banding pressed at 200o C with hot melt glue on special machines. The worktop is supported with cantiliver brackets made of MS steel duly powder coated.Worksurface is also provided with ABS wire manager of 50mm dia. The table top is supported on 50mm dia round vertical posts with side verticals made of 0.8mm CRCA steel sheet and modesty made of 20 SWG perforated steel sheet duly powder coated.

a) Main Table - 2100x900x750 mm

Return Table - 1050x600x750

Back unit - 3000x450x750

Back unit----- 2No.s of credenza each of size 1200x450x750(Ht.) made of CRCA Steel with stell sliding shutters. - 3000x450x750 ----- 1No.

b) Main Table - 1500x750x750 mm

Return Table - 900x450x750

Back unit - 2550x450x750

Back unit----- 2No.s of credenza each of size 1050x450x750(Ht.) made of CRCA Steel with steel sliding shutters.

c) Main Table - 2100x900x750 mm

Return Table - 1050x600x750

Return unit----- 1No.s of credenza each of size 900x450x750(Ht.) made of CRCA Steel with steel sliding shutters

d) Main Table - 1500x750x750 mm

Return Table - 900x450x750

Return unit----- 1No.s of credenza each of size 750x450x750(Ht.) made of CRCA Steel with steel sliding shutters.

2 **FREE STANDING TABLE**



Providing & fixing Free standing workstation table of an over all sizes 2100x2400x600 for each person with Top made up of 25mm Prelaminated MDF board having decorative laminate 0.8mm on top and balancing laminate on unexposed face, All exposed edges are sealed with 2mm PVC edge banding pressed at 200o C with hot melt glue on special machines. The worktop is supported with CRCA Powder Coated Steel Legs. (W/O KBPT/CPU/DRAWER UNIT)

3 **FREE STANDING TABLE (STRAIGHT)**

Providing & fixing Free standing workstation table with Top made up of 25mm Prelaminated MDF board having decorative laminate 0.8mm on top and balancing laminate on unexposed face, All exposed edges are sealed with 2mm PVC edge banding pressed at 200o C with hot melt glue on special machines. The worktop is supported with CRCA Powder Coated Steel Legs. (W/O KBPT/CPU/DRAWER UNIT)

4 CPU TROLLEY



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.

5 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.

6 PEDESTAL DRAWER UNIT



Providing and fixing Mobile Pedestal Drawer unit of an overall size 450x450x710 with 2 drawers + 1 filing. The drawer unit is made of 0.8mm thick body & 0.6mm thick inner CRCA steel sheet duly powder coated with drawer sliding on telescopic channels with proper locking arrangement. The pedestal drawer is Mounted on sturdy nylon castor for easy movement.

7 MEETING/DINING/DISCUSSION/LIBRARY TABLE

i MEETING TABLE



Providing & Fixing Meeting Table in Oval shape of an overall size 3000x1200x750 with top made of 25mm thick MDF board. The table has understructure with verticals made of 25mm thick prelaminated particle board & modesty made of 18mm thick prelaminated particle board having decorative laminate on both sides. All exposed 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.

ii DISCUSSION / CONFERENCE TABLE



Providing & Fixing () seater 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. The complete table unit is made up of combination of tables and round corner pieces.

iii DINING TABLE



Providing and fixing of Dining Table with top made of 25mm Prelaminated MDF board 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.

iv LIBRARY TABLE



Providing and fixing Table with top made up of 25mm thick MDF board with decorative laminate on top and balancing laminate on unexposed face. The understructure is made of 18mm thick prelaminated particle board having all exposed edges sealed with PVC edge banding tape and all unexposed edges sealed with 0.6mm 2mm PVC edge banding tape pressed at 200o C with hot melt glue on special machines. Table has a provision for wire manager caps at top.

- a) Oval shaped Meeting Table- Size::- 3000(L)x1200(w)x750(H) with two flip up box
- b) Rectangular Library Table- Size::- 1800(L)x900(w)x750(H) without Flip up box
- c) Rectangular Meeting Table- Size::- 2100(L)x1050(w)x750(H) with one Flip up box
- d) Rectangular Dining Table- Size::- 1500(L)x900(w)x750(H) without Flip up box
- e) Square Dining Table- Size::- 900(L)x900(w)x750(H) without Flip up box
- f) Oval shaped Meeting Table- Size::- 3600(L)x1800(w)x750(H) with two flip up box
- g) Conference Table in Modules each Size::- 1350(L)x600(w)x750(H) -----8No.& 4Nos. Semicircular shapeTop.

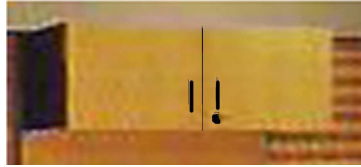
8 CABINET STORAGE UNIT

Providing and fixing openable shutter steel storage unit with body and shelf made up of 0.8mm CRCA & facia made of 1.0mm CRCA duly powder coated with proper locking arrangement.

- a) 600(L)x450(D)x1230(H)
- b) 750(L)x450(D)x1230(H)
- c) 900(L)x450(D)x1230(H)
- d) 600(L)x450(D)x1230(H) with Glass Shutters
- e) 750(L)x450(D)x1230(H) with Glass Shutters

f) 900(L)x450(D)x1230(H) with Glass Shutters

8(A) OVERHEAD STORAGE



Overhead storage units wall/partition hung with 350mm depth & height 400 made of 18mm prelaminated particle board having two 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.

a 750(L)x350(D)x400(H)

b 1200(L)x350(D)x400(H)

9 LECTURE TABLE



Providing and fixing Lecture Table with an overall size 1500x750x750 with top made up of 25mm thick prelaminated particle board with decorative laminate on top and balancing laminate on unexposed face. The understructure is made of 18mm thick prelaminated particle board having all exposed edges sealed with PVC edge banding tape and all unexposed edges sealed with 0.6mm 2mm PVC edge banding tape pressed at 200o C with hot melt glue on special machines. Table has a provision for wire manager caps at top. table has a provision of 3 top hung drawer made up of prelaminated particle board.

10 STEEL RACK



Providing & Fixing metal **shelving rack** with an over all size 910(W)X450(D)X2100(H) 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.

11 LIBRARY BOOK SINGLE STACK



Providing & Fixing Book stack with top & sides made up of 18mm prelaminated particle board. Shelves are made of 25mm prelaminated particle board. All exposed edges are sealed with 2mm PVC edge banding tape pressed and unexposed edges sealed with 0.6mm PVC edge banding tape at 200o C with hot melt glue on special machines. The book stacks are available in the following configurations:-

* Main Unit (900x350x2100mm)

* i) Add on Unit (880x2100mm)

12 LIBRARY BOOK DOUBLE STACK

Main Unit (900x600x2100mm)

i) Add on Unit (880x2100mm)

13 BOOKCASE IN STEEL



Providing & Fixing Book Case of an overall size 915(W)x325(D)x1745(H) made of 1mm thick CRC sheet with brass lock 6 lever with duplicate keys, duly powder coated. The Book Case is provided with top sliding 4 glass shutters.

14 PERIODICAL DISPLAY RACK



Providing & Fixing Periodical Display Rack for magazine/catalogues of overall size 890 x 400 x 1890h with body made of CRCA steel duly powder coated and vertical sides made of 18mm 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. Display Rack has top sliding shutter with provision to keep 18-20 magazines in Each Rack face behind shutters made up of CRCA steel duly powder coated.

C CHAIRS & SOFAS

1 MID BACK CHAIR FOR STAFF



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

2 CHAIR FOR CONFERENCE & MEETING/LIBRARY ROOM



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

3 HIGH BACK CHAIR FOR CABIN (TYPE A)



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

4 VISITOR CHAIR FOR (TYPE A)



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

5 HIGH BACK CHAIR FOR SR. OFFICER CABIN (TYPE B)



High Back Revolving Chair

Upholstry/Frame: One piece ply in seat & back with foam & polyfill and leatherite upholstery

Seat & back size : 520 mm (w) x 500 mm (D) , 520 mm (w) x 800 mm (H)

Arms: Wooden arms with melamine polish with chrome plated end caps

Mechanism : Central tilt mechanism/ Torsion bar mechanism

Height Adjustment : Gas Lift

Base : Chrome plated base with twin wheel castors

6 MID BACK CHAIR (TYPE B)



Medium Back Revolving Chair

Upholstry/Frame: One piece ply in seat & back with foam & polyfill and leatherite upholstery

Seat & back size : 520 mm (w) x 500 mm (D) , 520 mm (w) x 580 mm (H)

Arms: Wooden arms with melamine polish with chrome plated end caps

Mechanism : Central tilt mechanism/ Torsion bar mechanism

Height Adjustment : Gas Lift

Base : Chrome plated base with twin wheel castors

7 VISITOR CHAIRS (TYPE B)



Visitor Chair

Upholstry/Frame: One piece ply in seat & back with foam & polyfill and leatherite upholstery

Seat & back size : 520 mm (w) x 500 mm (D) , 520 mm (w) x 580 mm (H)

Arms: Wooden arms with melamine polish with chrome plated end caps

Base : Chrome plated fixed base with PVC shoes

8 DINING CHAIR WITH WOODEN SEAT & PIPE FRAME WORK.



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

9 METAL PERFORATED CHAIR FOR WAITING



Multiseater 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.

- a) **THREE SEATER**
- b) **TWO SEATER**
- 10 **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.

(SINGLE SEATER)

- a) **1 - SEATER**
- b) **2 – SEATER**
- c) **3 – SEATER**
- 11 **DESKLET 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 lipping. 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.

- 12 **CENTRE TABLE**



Providing and supplying center table OF AN OVERALL SIUZE 900X500X450 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.

13 SIDE TABLE



Providing and supplying Side table OF AN OVERALL SIZE 450X450X450 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.

14 CUPBOARD



Providing & Fixing Cupboard having depth 450 with top, understructure & facia made of 18mm Prelaminated MDF board having openable shutters. 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, with proper locking arrangement. The shelves are made of 18 mm thick MDF board.

15 NURSE STATION

Providing and fixing Nurse Stations of an overall size 1500x600x750 with top made up of 25mm thick MDF board with decorative laminate on top and balancing laminate on unexposed face. The understructure is made of 18mm thick prelaminated particle board having all exposed edges sealed with PVC edge banding tape and all unexposed edges sealed with 0.6mm 2mm PVC 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 Station has a provision of three top hung drawer of size 380x450x450 made up of Prelaminated Particle board. It has provision for Keyboard & CPU made up of steel

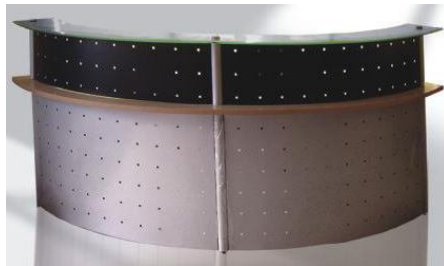
16 Water Cooler



Supply, installation, testing & commissioning of water cooler having capacity of 20/40 . Voltas make

17 R O SYSTEM (25LTR.)

18 RECEPTION TABLE



Providing & Fixing single module Reception Table of an overall size 1400x706x1050mm with top made of 25mm thick pre laminated particle board having exposed edges sealed with 2mm PVC edge banding tape pressed at 200o C with hot melt glue on special machines. The top is supported on steel verticals of 50mm (D) and perforated steel sheet modesty duly powder coated. The table has a transaction top made of 10mm thick toughened glass supported on steel studs and perforated steel sheet upper modesty duly powder coated.

Providing and fixing 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.

Providing and fixing reception table of an overall size of 2800X1400X1050 with top made up of 25mm thick prelaminated particle board having exposed edges sealed with PVC edge banding tape. The table top is supported on steel vertical studs of 50mm(D) lower modesty made up of and 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.

GENERAL Specification for Civil/PHE/Electrical works etc. :-

- 1.01 The specifications and mode of measurements for Civil and Plumbing works shall be in accordance with C.P.W.D. specifications 2009 Volumes I and II with up to date correction slips unless otherwise specified in the nomenclature of individual item or in the specifications. The entire work shall be carried out as per the C.P.W.D. specifications in force with up to date correction slips upto the date of opening of tender.
- 1.02 For the item not covered under CPWD Specifications mentioned above, the work shall be executed as per latest relevant standards/codes published by B.I.S. (formerly ISI) inclusive of all amendments issued thereto or revision thereof, if any, upto the date of opening of tenders.
- 1.03 In case of B.I.S. (formerly I.S.I) codes/specifications are not available, the decision of the Engineer based on acceptable sound engineering practice and local usage shall be final and binding on the contractor.
- 1.04 However, in the event of any discrepancy in the description of any item as given in the schedule of quantities or specifications appended with the tender and the specifications relating to the relevant item as per CPWD specifications mentioned above, or in drawings the former shall prevail.
- 1.05 In general the building floor to floor height is 4.00 mtr unless specified otherwise in the drawing. However, the rates for different items of work shall be for up to 4.5 m floor to floor height at all levels, lifts, leads and depths of the building except where otherwise specified explicitly in the item of work or in special conditions appended with the tender. All works above the top most terraces (main) shall be paid under the level existing below (i.e. machine room, mumty etc)
- 1.06 The work shall be carried out in accordance with the architectural, structural, plumbing and electrical drawings etc. The drawings shall have to be properly co-related before executing the work. In case of any difference noticed between the drawings, final decision, in writing of the Engineer shall be obtained by the contractor. For items, where so required, samples shall be prepared before starting the particular items of work for prior approval of the Engineer and nothing extra shall be payable on this account.

- 1.07 All materials to be used on works shall bear I.S. certification mark unless specifically permitted otherwise in writing. In case I.S. marked materials are not available (not produced), the materials used shall conform to I.S. Code or CPWD specifications, as applicable in this contract.

In such cases the Engineer shall satisfy himself about the quality of such materials and give his approval in writing. Only articles classified as "First Quality" by the manufacturers shall be used unless otherwise specified. All materials shall be tested as per provisions of the Mandatory Tests in CPWD specifications and the relevant IS specifications. The Engineer may relax the condition regarding testing if the quantity of materials required for the work is small. Proper proof of procurement of materials from authentic manufacturers shall be provided by the contractor to the satisfaction of Engineer. Grade of cement used shall be OPC 43 Grade unless otherwise specified explicitly. The contractor shall get the Design Mix for RCC done by the labs approved by OWNER only. Reinforcement Steel used shall be of TMT Fe-500 unless otherwise specified.

- 1.08 In respect of the work of the sub-agencies deployed for doing work of electrification, air-conditioning, external services, other building work, horticulture work, etc. for this project and any other agencies simultaneously executing other works, the contractor shall afford necessary coordination and facilities for the same. The contractor shall leave such necessary holes, openings, etc. for laying / burrying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps, etc. as may be required for the electric, sanitary air-conditioning, fire fighting, PA system, telephone system, C.C.T.V. system, etc. and nothing extra over the agreement rates shall be paid for the same.
- 1.09 Unless otherwise specified in the bill of quantities, the rates for all items of work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water encountered from any source such as rains, floods, or due to any other cause whatsoever.
- 1.10 Any cement slurry added over base surface (or) for continuation of concreting for bond is added its cost is deemed to have in built in the item unless otherwise/explicitly stated and nothing extra shall be payable or extra cement considered with consumption on this account.
- 1.11 The rate for all items in which the use of cement is involved is inclusive of charges for curing.
- 1.12 The contractor shall clear the site thoroughly of all scaffolding materials and rubbish etc. left out of his work and dress the site around the building to the satisfaction of the Engineer before the work is considered as complete.
- 1.13 Rates for plastering work (excluding washed grit finish on external wall surfaces) shall include for making grooves, bands etc. wherever required and nothing extra shall be paid for the same.
- 1.14 The rates quoted for all brick/concrete work shall be deemed to include making openings and making good these with the same specifications as shown in drawings and/or as directed. No extra payment shall be made to the contractor on this account.
- 1.15 Rates for all concrete/plaster work shall include for making drip course moulding, grooves etc. wherever required and nothing extra shall be paid for the same.
- 1.16 Rates for flooring work shall include for laying the flooring in strips/as per sample or as shown in drawings wherever required and nothing extra shall be paid for the same.
- 1.17 The drawing(s) attached with the tender documents are for the purpose of tender only, giving the tenderer a general idea of the nature and the extent of works to be executed. The rates quoted by the tenderer shall be deemed to be for the execution of works taking into account the "Design Aspect" of the items and in accordance with the "Construction Drawings" to be supplied to the Contractor during execution of the works.

- 1.18 The quoted rate shall be for finished items and shall be complete in all respects including the cost of all materials, labour, tools & plants, machinery etc., all taxes, duties, levies, octroi, royalty charges, statutory levies etc. applicable from time to time and any other item required but not mentioned here involved in the operations described above. The client/OWNER/Employer shall not be supplying any material, labour, plant etc. unless explicitly mentioned so.
- 1.19 On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials and location of labour camp. The contractor shall be bound to follow all such restrictions and adjust the programme for execution of work accordingly.
- 1.20 The contractor has to ensure co-ordination with Institute authorities to maintain the smooth functioning / operation of existing Institute without disruption during the execution of work. This may require working rescheduling the normal working hours, working in restricted period etc. Nothing extra shall be payable on this account.
- He shall also ensure that all work sites within the Institute complex are properly cordoned off by means of barricades and screens upto a height of 3.0 m above ground level. The contractor shall use painted CGI sheets which are in good condition mounted on steel props.
- 1.21 Stacking of materials and excavated earth including its disposal shall be done as per the directions of the Engineer-in-Charge. Double handling of materials or excavated earth if required shall have to be done by the contractor at his own cost.

1.22 LIST OF APPROVED MAKES : CIVIL WORKS

Sl.No.	MATERIALS	MANUFACTURERS
1.	Doors & Windows fixtures/ Fittings:	Everite, Hardima, Global, Crown
2.	Door Closer / Floor spring :	Doorking, Everite, Hardwyn, Amar Darny, Hardima
3.	Aluminium Sections. :	Hindalco, Jindal, Indal , Bhoruka,
4.	Clear Glass/ Clear Float Glass / Toughened Glass :	Saint Gobain(SG),Modi, Gujrat Guardian, Tata , AIG
5.	Laminates :	Formica, Decolam, Century, Marino, Green Ply
6.	Synthetic Enamel Paints :	Berger (Luxol gold), Asian(Apcolite), ICI Dulux (Gloss), Nerolac (Full gloss hard drying)
7.	Oil Bound Distemper :	Asian (Tractor), Berger (Bison), Nerolac (Super Acrylic).
8.	Cement Paint :	Snowcem Plus, Berger (Durocem Extra), Nerolac (Nerocem with titanium),.
9.	Plastic Emulsion Paint :	ICI, Asian, Nerolac
10.	Other Paints/Primers :	ICI Dulux, Asian, Berger, Nerolac
11.	Cement :	OPC 43 grade conforming to BIS-8112 and approval of source by Engineer

12.	Reinforcement Steel	:	TMT steel conforming to BIS-1786 and approval of source by Engineer
13.	Glass Mosaic Tiles	:	Italica, Bizzaza. Pallidio
14.	Back-up Rod.	:	Supreme Industries or equivalent
15.	M.S. Pipe	:	Jindal Hisar, Prakash-Surya, BST, Kalinga, Tata
16.	Polycarbonate Sheets	:	GE Plastics or approved equivalent
17.	Wooden/Metal Fire Check Doors	:	Navair, Shakti-met, Godrej, Pacific Fire Control, Promat
18.	Gypsum Board System	:	India Gypsum, Laffarge, Boral

Sl.No.	MATERIALS		MANUFACTURERS
19.	Sunken Portion Treatment	:	Choksey, Roffe, Krytone,Sika,
20.	Admixtures for concrete.	:	Cico, Vam Organics, Roffe, Pidilite,FOSROC
21.	Ceramic Tiles	:	Johnson, Somany, Kajaria, Nitco
22.	Pre-Laminated Particle Board	:	Novopan, Greenlam, Kitlam, Marino
23.	Flush Door Shutters.	:	Century, Kitply, Novapan, Green Ply, Marino
24.	Glazed Tiles	:	Bell, Somany, Johnson, Kajaria, Cera,
25.	PVC Water Stops	:	Supreme, Fixopan or approved equivalent
26.	White Cement.	:	Birla White, J.K.
27.	Powder Coating Material Pure Polyester.	:	Jotun , Berger, Goodlass Nerolac
28.	Masking Tapes	:	Suncontrol , Wonder Polymer.
29.	Stainless Steel Screws For Fabrication and fixing of Windows.:	:	Kundan , Puja , Atul.
30.	Dash Fasteners./Anchor bolts	:	Hilti, Fischer, Bosch.
31.	Stainless Steel Bolts, Washers and Nuts.	:	Kundan, Puja, Atul.
32.	Stainless Steel Pressure Plate Screws.	:	Kundan, Puja, Atul.
33.	Stainless Steel Friction Stay.	:	Securistyle, Earl Bihari.

34.	E.P.D.M. Gaskets.	:	Anand Reddiplex, Enviro Seals
35.	Weather Silicon.	:	Dow Corning, Wacker, GE
36.	Structural Silicon at butt joints	:	- Do -
37.	PVC continous fillet for periphery packing of Glazings /Structural glazings.:		Roop, Anand, Forex Plastic.
38.	Floor Springs.	:	Doorking, Opel or equivalent
39.	Water proofing / Injection Grouting	:	Specilized agency as approved by engineer
40.	6mm thick Reflective Glass	:	Glaverbel, Glavermas, Saint Gobain.

Sl.No.	MATERIALS		MANUFACTURERS
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41.	Door Locks.	:	ACME, Godrej, Harrison, Hardima, Mobil
42.	Door Seal – Woolpile Weather Strip	:	Anand -Reddiplex.
43.	Aluminium Grill	:	Hindalco, Decogrille or approved Equivalent
44.	Vitrified Tiles	:	Restile , Naveen, Bell-Ceramics, Kajaria, Somani,
45.	Carpets	:	Hollitex, Standard, Mohawk
46.	Aluminium Cladding sheets	:	Alstrong , Alpolic, Alucobond, Alucomat Alu Decor
47.	Aluminium Die-cast handles & two point locking kit	:	Giesse, Securistyle, Alu-alpha
48.	Stainless steel D-handles	:	D-line, Giesse, Dorma,Hardima
49.	Fabric for Auditorium	:	ESSMA, Raymonds or equivalent
50.	Stainless Steel Pipes/Flats	:	304 Grade (as approved by Engineer)
51.	Structural Steel	:	Conforming to BIS 2062 and approval of source by Engineer
52.	Ready Mix Concrete	:	ACC,BIRLA, Ahlcon or approved equivalent
53.	Epoxy Flooring/ wall coating	:	Fosrock, Beck, Famaflor,
54.	SBS bitumen based Self adhesive membrane Material	:	Grace-Bituthene CP1.5, Texsa-Texself 1.5
55.	Acoustic Mineral Fibre	:	USG-Radar, Armstrong, 21 st Century, Acostyle

- 56. Curtain wall/Structure Glazing/Hermatic seal Sliding
Doors : Specialised Agency to be approved by Engineer
- 57. Fire Panic bar : Briton, Monarch, Von-Duprin, Dorma, Mobel
- 58. Ply board : Greenply, Kitply, Century, Archid,
Marino

Sl.No.	MATERIALS	MANUFACTURERS
59	PVC Doors (Solid Profile)	: Rajshri or approved equivalent
60	PVC Doors (Hollow Profile)	: Syntex, Plasopan or approved equivalent
61	PVC Flooring	: LG, Tarkett, Responsive or approved equivalent
62	SS Railing	: Specialised Agency to be approved by Engineer
63	Interlocking Paver Tiles	: Ultra, Shree or Approved Equival
64	Wall Clading Tiles	: Ultra, Shree or Approved Equivalent
65	Acoustic Seals	: Anand Reddiplex , Enviroseal or equivalent
66	Smoke Seals	: Pemko or Equivalent
67	Fire rated door closer/Mortice Lock/ Door Co-ordinator	Dorma, Becker F.S. Australian or approved equivalent

Note : **Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Engineer**

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 Washers, C.P. brass accessories	1795 4291/4827	Aquabaths, Othello, Jaquar, Kingston, Marc
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)