

**NAME OF WORK: - CONSTRUCTION OF NEW BUILDING FOR RUBBER,
PLASTIC & CHEMICAL AT L.D. COLLEGE OF ENGINEERING,
AHMEDABAD. (PROVIDING AND SUPPLYING FURNITURE.)**

ITEM WISE SPECIFICATION

ITEM NO. 1

Providing and supplying high-back chair with a durable metal framework, upholstered with artificial leather/leatherette and molded PU foam. The chair shall include molded seat and back covers, with the back foam ergonomically contoured to provide lumbar support for enhanced comfort. The chair shall be equipped with high-durability casters and a hydraulic system. It must feature a gas lift cylinder with a minimum 5-year warranty. The overall dimensions of the chair shall be approximately 53 cm (W) × 79 cm (H) for the back, and 51 cm (W) × 49 cm (D) for the seat. The PU foam shall be molded with a density of 45 ± 2 kg/m³. The chair shall have one-piece armrests that are scratch and weather resistant. It shall be equipped with a permanent contact mechanism allowing 360° rotation, 12° seat tilt, and 19° back tilt with a front pivot for tilting, ensuring the user's feet remain on the ground for added comfort. Additional features shall include tilt tension adjustment, static seat depth adjustment of 0.5 cm, 5-position locking system, and an anti-shock back mechanism to prevent sudden impact when the backrest lock is released. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Metal Framework (MS Tubular)	IS 2062	Mild Steel tubes, powder coated, 50 micron thickness
2	Artificial Leather/Leatherette	IS 7900	PVC coated fabric, minimum 0.9mm thickness
3	Molded PU Foam	IS 8814	Density 45 ± 2 kg/m ³ , compression hardness as per IS
4	Gas Lift Cylinder	IS 9873	Class 4 gas spring, minimum 5-year warranty
5	Casters	IS 14687	High durability nylon/PU casters,

S.No.	Material Description	Indian Standard	Specification
			50mm diameter
6	Hardware & Fixings	IS 1387	Nuts, bolts, screws - Grade 4.6 minimum
7	Powder Coating	IS 14536	Epoxy polyester powder, 50-80 micron

Labour & Workmanship:

As per IS 4866 (Office Furniture)

1. Framework Fabrication:

- All welding as per IS 816 and IS 817
- Weld joints ground smooth, free from sharp edges
- Frame components square and true to dimensions $\pm 2\text{mm}$

2. Foam Molding:

- PU foam molded using approved moulds
- Ergonomic contouring for lumbar support
- Density uniformity $\pm 2 \text{ kg/m}^3$ throughout
- Curing time minimum 24 hours at 20-25°C

3. Upholstery Work:

- Leather/leatherette cut with 10mm excess for folding
- Stretched tightly without wrinkles or sagging
- Stitching with nylon thread, 6-8 stitches per inch
- Seams double stitched for strength

4. Mechanism Installation:

- Gas lift cylinder installed as per manufacturer specifications
- Permanent contact mechanism lubricated and tested
- 360° rotation - smooth with no binding
- Seat tilt 12° - tested with 100 kg load
- Back tilt 19° - front pivot mechanism checked

- 5-position locking system - each position tested
- Tilt tension adjustment - full range verified
- Anti-shock mechanism tested for gradual release

5. Armrest Installation:

- One-piece armrests securely bolted
- Scratch resistant coating verified
- Height and width as per ergonomic standards IS 11628

6. Quality Checks:

- Load test: 150 kg static load for 1 hour
- Caster test: 10,000 cycles on level floor
- Gas lift test: 50,000 cycles minimum
- All mechanisms functionally tested before dispatch

Dimensions (As per IS 11628):

- Back: 53 cm (W) × 79 cm (H)
- Seat: 51 cm (W) × 49 cm (D)
- Seat height: 420-540mm (adjustable)

Mode of Measurement:

Per Number (Each) - Complete chair assembled, tested and approved

ITEM NO. 2

Providing and supplying medium-back chair with a durable metal framework, upholstered with changeable fabric upholstery covers (as per requirement) and molded PU foam. The chair shall include molded seat and back covers, with the back foam contoured to provide lumbar support for added comfort. It shall have high-durability casters and a hydraulic system with a gas lift cylinder having a minimum 5-year warranty. Chair dimensions shall be approximately 47.5 cm (W) × 58 cm (H) for the back, and 49 cm (W) × 48 cm (D) for the seat. The PU foam shall be molded with a density of 45 ± 2 kg/m³. The chair shall include one-piece armrests that are scratch and weather resistant. It shall be equipped with a permanent contact mechanism offering 360° rotation, pneumatic height adjustment, 17° maximum tilt, and tilt tension adjustment. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Metal Framework	IS 2062	MS tubular structure, powder coated
2	Fabric Upholstery	IS 1949	Changeable covers, minimum 300 GSM
3	Molded PU Foam	IS 8814	Density 45 ± 2 kg/m ³
4	Gas Lift Cylinder	IS 9873	Minimum 5-year warranty
5	Casters	IS 14687	High durability, 50mm diameter
6	Hardware	IS 1367	All fasteners as per grade

Labour & Workmanship:**As per IS 4866****1. Framework:**

- Welding as per IS 816/817
- Powder coating 50-80 micron thickness
- All joints smooth and flush

2. Fabric Upholstery:

- Removable covers with zipper/velcro
- Fabric pre-shrunk and colourfast as per IS 687
- Seams finished with overlock stitching

3. Foam Contouring:

- Lumbar support molded as per ergonomic curve
- Foam bonded to backing with approved adhesive

4. Mechanism Testing:

- 360° rotation - smooth operation
- Pneumatic height adjustment - 100mm minimum range
- 17° maximum tilt verified
- Tilt tension adjustment tested

5. Assembly:

- All components aligned and square
- Hardware torqued to specification
- No wobble or instability

Dimensions:

- Back: 47.5 cm (W) × 58 cm (H)
- Seat: 49 cm (W) × 48 cm (D)

Mode of Measurement:

Per Number (Each)

ITEM NO. 3

Providing and supplying low-back chair suitable for work centers and general staff use, with seat and back constructed from a durable metal framework. The chair shall be upholstered with changeable fabric upholstery covers (as per requirement) and molded PU foam, along with molded seat and back covers. The back foam shall be contoured to provide lumbar support for enhanced comfort. The chair shall be equipped with high-durability casters and a hydraulic system. It must feature a gas lift cylinder with a minimum 5-year warranty. Chair dimensions shall be approximately 45 cm (W) × 45 cm (H) for the back, and 45 cm (W) × 43 cm (D) for the seat. The PU foam shall be molded with a density of $45 \pm 2 \text{ kg/m}^3$. The chair shall include one-piece armrests that are scratch and weather resistant. It shall be fitted with a permanent contact mechanism offering 360° rotation, pneumatic height adjustment, 17° maximum tilt, and tilt tension adjustment for user comfort. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Metal Framework	IS 2062	MS tubular, powder coated
2	Fabric Upholstery	IS 1949	Changeable covers, 300 GSM minimum
3	Molded PU Foam	IS 8814	Density $45 \pm 2 \text{ kg/m}^3$
4	Gas Lift Cylinder	IS 9873	5-year warranty minimum

S.No.	Material Description	Indian Standard	Specification
5	Casters & Hardware	IS 14687, IS 1367	As specified

Labour & Workmanship:

As per IS 4866

1. Framework Fabrication:

- All welds ground smooth
- Frame square and true $\pm 2\text{mm}$
- Powder coating uniform

2. Upholstery:

- Fabric covers removable
- Foam provides lumbar support
- Stitching uniform and strong

3. Mechanism:

- 360° rotation smooth
- Pneumatic adjustment tested
- 17° tilt verified
- Tension adjustment operational

4. Quality Control:

- Static load test 120 kg
- Stability test as per IS 4866
- All functions checked

Dimensions:

- Back: 45 cm (W) × 45 cm (H)
- Seat: 45 cm (W) × 43 cm (D)

Mode of Measurement:

Per Number (Each)

ITEM NO. 4

Providing and supplying visitor or guest chair with seat and back made of 12 mm thick hot-pressed plywood, upholstered with changeable fabric upholstery covers (as per requirement) and molded PU foam, along with molded seat and back covers. The back foam shall be contoured to provide lumbar support for enhanced comfort. The chair dimensions shall be approximately 45 cm (W) × 38 cm (H) for the back, and 45 cm (W) × 43 cm (D) for the seat. The PU foam shall be molded with a density of $45 \pm 2 \text{ kg/m}^3$. The armrests and legs shall be fabricated from powder-coated mild steel (MS) structure as per Architect's selection. The seat and back shall be securely fixed to the MS structure using all necessary hardware. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	12mm thick, BWR/BWP grade
2	Fabric Upholstery	IS 1949	As per approved sample
3	PU Foam	IS 8814	Density $45 \pm 2 \text{ kg/m}^3$
4	MS Structure	IS 2062	For legs and armrests
5	Powder Coating	IS 14536	50-80 micron thickness
6	Hardware	IS 1367	Nuts, bolts, screws

Labour & Workmanship:

As per IS 4866 and IS 1328

1. Plywood Work:

- Plywood seasoned, moisture content 8-12% as per IS 1734
- Cut to size with $\pm 1\text{mm}$ tolerance
- Edges sealed with wood sealer
- Free from defects, warp, twist

2. MS Fabrication:

- Welding as per IS 816/817
- All joints ground smooth
- Powder coating after degreasing and phosphating

- Coating thickness uniform 50-80 micron

3. Foam & Upholstery:

- Foam cut to template
- Contoured for lumbar support
- Fabric stretched tight and stapled underneath
- No visible staples from front/sides

4. Assembly:

- Plywood seat/back fixed to MS frame with bolts
- All connections secure, no movement
- Chair stable on all four legs

5. Finishing:

- All surfaces smooth
- No sharp edges
- Uniform color and texture

Dimensions:

- Back: 45 cm (W) × 38 cm (H)
- Seat: 45 cm (W) × 43 cm (D)

Mode of Measurement:

Per Number (Each)

ITEM NO. 5

Providing and supplying Desk Table of size 90 cm (L) x 75 cm (W) x 75 cm (H), made using 19 mm thick plywood (M1) for the structure and finished with 1.0 mm thick decorative laminate (M24), as approved by the Architect. The table shall be fixed with all necessary fixtures and fastening hardware (M14). The top portion of the table shall have all exposed edges finished with teak wood beading Patti (M4) and melamine polish (M29) of approved quality. The table shall include one 0.20 m support at the top center and two supports at the bottom for added structural stability. Complete in all respects as per the approved architectural drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick, BWR grade minimum
2	Decorative Laminate	IS 2046	1.0mm thick, approved shade
3	Contact Adhesive	IS 7065	For laminate bonding
4	Teak Wood Beading	IS 1708	8mm thick, seasoned
5	Melamine Polish	-	Approved brand
6	Hardware	IS 1367	Screws, L-brackets, corner braces
7	Wood Screws	IS 4862	Appropriate sizes

Labour & Workmanship:

As per IS 729 (Woodwork in Building) and IS 4866

1. Plywood Preparation:

- Moisture content 8-12% as per IS 1734
- Cut to size with circular saw, edges square
- Tolerance ± 1 mm on dimensions
- Surfaces sanded with 120 grit sandpaper

2. Laminate Application:

- Surface cleaned and dust-free
- Contact adhesive applied uniformly to both surfaces
- Allowed to dry 15-20 minutes
- Laminate positioned and rolled with 50kg roller
- Edges trimmed flush with router/trimmer
- Corners radiused 2mm

3. Edge Treatment:

- Teak beading cut to exact size with mitre joints at corners
- Fixed with adhesive and panel pins
- Pins punched below surface, filled
- Beading sanded smooth

4. Polish Application:

- Surface cleaned
- Melamine polish applied in 2-3 coats
- Each coat dried and lightly sanded
- Final coat buffed to smooth finish

5. Support Structure:

- One 200mm support at top center - fixed with screws and adhesive
- Two supports at bottom - bolted/screwed securely
- All supports perpendicular and plumb

6. Assembly:

- All joints square, checked with try-square
- Hardware fixed at specified positions
- Table stable, no wobble
- Load test: 50 kg distributed load for 1 hour

Dimensions:

90 cm (L) × 75 cm (W) × 75 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 6

Providing and supplying H.O.D. Table with side unit as per architect's drawing, comprising a main table of overall size 2600mm (L) x 850mm (W) x 750mm (H) and a side unit of size 1200mm (L) x 400mm (W) x 850mm (H). The table structure shall be fabricated from 19mm thk. plywood (M1), externally finished with 1.0mm thk. decorative laminate (M24) and internally with 0.8mm thk. liner laminate. The main table includes a 450mm wide keyboard tray, 2 drawers (each 450mm wide) with telescopic roller channels (M15), 1 shutter with necessary hinges (M18), handles (M19), magnets and locks (M16), and 50mm dia. stainless steel leg supports. A 150mm wide and 12mm thick Corian patta is provided at the tabletop edge and a 12mm thick clear glass top is laid over the entire table. 12mm wide grooves shall be provided at equal distances along the front and side elevations for enhanced aesthetics. The side unit includes 2 drawers (each 225mm high) and 4 shutters, fabricated as per elevation,

complete with all necessary hardware (M14). A plastic grommet cable outlet (60mm dia.) is provided on the tabletop for wire management. All exposed edges shall be finished with teakwood beading patti (M4) and approved melamine polish (M29). A footrest is included under the main table. Complete in all respects as per detailed architect's drawings and instructions of the architect and engineer in charge. main table of overall size 2600mm (L) x 850mm (W) x 750mm (H) side unit of size 1200mm (L) x 400mm (W) x 850mm (H).

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Plywood	IS 303 / IS 4990	19mm thick, BWR/BWP grade
2	Decorative Laminate (External)	IS 2046	1.0mm thick
3	Liner Laminate (Internal)	IS 2046	0.8mm thick
4	Telescopic Roller Channels	IS 3564	Full extension, 40kg capacity
5	Hinges	IS 3564	Soft-close preferred
6	Handles	IS 3564	Brass/SS, approved design
7	Magnets	IS 3564	Magnetic catch
8	Locks	IS 4968	Good quality brand
9	Teak Wood Beading	IS 1708	8mm thick
10	Melamine Polish	-	Approved brand
11	Toughened Glass	IS 2553 (Part 1)	12mm thick, polished edges
12	Corian/Solid Surface	-	12mm thick, 150mm wide
13	SS Legs	IS 6603	50mm diameter, 304 grade
14	Grommet	-	60mm diameter plastic
15	Hardware	IS 1367	All fixings

Labour & Workmanship:

As per IS 729, IS 4866

1. Main Table (2600×850×750mm):

a. Carcass Construction:

- All plywood components cut to size with ± 1 mm tolerance
- Dado/groove joints for strength
- Internal corners reinforced with blocks
- Assembled using screws and adhesive as per IS 5232

b. Laminate Work:

- External: 1.0mm decorative laminate applied as per Item 5
- Internal: 0.8mm liner laminate
- All edges post-formed or lipped with matching laminate
- Joints invisible, surfaces flush

c. Keyboard Tray (450mm wide):

- Mounted on telescopic channels under top
- Channels screwed to carcass sides
- Smooth operation tested, no binding
- Load capacity 15 kg minimum

d. Drawers (2 nos., 450mm wide each):

- Drawer box made from 12mm plywood
- Joints dovetailed or doweled
- Bottom 6mm plywood in groove
- Telescopic channels full extension
- Soft-close mechanism if specified
- Drawer front matches table finish
- Load test: 20 kg per drawer

e. Shutter (1 no.):

- 19mm plywood with laminate both sides
- Hinges: 2 or 3 per shutter, cup hinges 35mm
- Soft-close hinges preferred
- Handle as per architect's selection

- Magnetic catch and lock installed
- Opening 90° minimum, no obstruction

f. SS Leg Supports (50mm dia.):

- 304 grade stainless steel
- Fixed with base plates and screws
- Height adjustable feet for leveling
- Chrome/satin finish as specified

g. Corian Patta (150mm wide, 12mm thick):

- Fixed at tabletop edge as per drawing
- Bonded with approved adhesive
- Joints invisible, surface flush with top
- Edges polished smooth

h. Glass Top (12mm toughened):

- Cut to exact table dimension -2mm for clearance
- All edges polished
- Corner radius 5mm
- Laid on rubber pads to prevent slipping
- Toughening as per IS 2553

i. Grooves (12mm wide):

- Routed on front and side elevations
- Equal spacing as per drawing
- Depth 3-5mm, edges clean

j. Cable Grommet (60mm dia.):

- Positioned as per drawing/requirement
- Plastic grommet with removable cover
- Edges smooth, no sharp corners

k. Footrest:

- Made from plywood or MS rod
- Height 150-200mm from floor

- Securely fixed to table legs

2. Side Unit (1200×400×850mm):

a. Construction:

- Similar carcass construction as main table
- Laminate applied internal and external

b. Drawers (2 nos., 225mm high each):

- Construction as per main table drawers
- Telescopic channels
- Load capacity 15 kg each

c. Shutters (4 nos.):

- Size as per elevation
- Hinges, handles, magnets, locks as specified
- Smooth operation, properly aligned

d. Shelves:

- Adjustable or fixed as per drawing
- Supported on shelf pins or battens

3. Edge Finishing:

- All exposed edges finished with 8mm teak beading
- Mitre joints at corners
- Beading fixed with adhesive and pins
- Melamine polish applied

4. Quality Checks:

- All drawers and shutters open/close smoothly
- Table stable, no rocking
- All hardware functions properly
- Surface finish uniform, no defects
- Glass properly seated, no movement

Dimensions:

- Main Table: 2600mm (L) × 850mm (W) × 750mm (H)

- Side Unit: 1200mm (L) × 400mm (W) × 850mm (H)

Mode of Measurement:

Per Set (Main Table + Side Unit) or Per Linear Meter or Per Number

ITEM NO. 7

Providing and supplying Professor Cabin Table with Back Side Unit as per architect's drawing, comprising an L-shaped main table of overall size 1350mm (L) x 750mm (W) x 750mm (H) + 750mm (L) x 400mm (W) x 750mm (H) and a back side unit of size 900mm (L) x 400mm (W) x 750mm (H). The structure shall be fabricated from 19mm thick plywood (M1), externally finished with 1.0mm thick decorative laminate (M24) and internally with 0.8mm thick liner laminate, with all exposed edges finished using teakwood beading (M4) and coated with melamine polish (M29). The main table includes one 450mm wide keyboard tray, one drawer (450mm wide) with telescopic roller channels (M15), and one shutter with hinges (M18), handle (M19), magnet, and locking arrangement (M16). A 12mm thick clear glass top is laid over the table surface, and a 60mm dia. plastic grommet is provided for wire management. A 450mm high partition wall is provided on top of the table as per drawing. The back side unit comprises two drawers (each 200mm high) and two shutters as per elevation, complete with all necessary hardware (M14). A footrest is provided under the main table. The entire unit shall be executed as per detailed drawings and the instructions of the architect and engineer-in-charge.

Materials:

Same as Item 6

Labour & Workmanship:

As per IS 729, IS 4866

1. L-Shaped Main Table:

- Dimensions: 1350×750×750mm + 750×400×750mm
- Construction same as Item 6
- L-joint properly reinforced
- Both sections level and aligned

2. Components:

- Keyboard tray: 450mm wide, telescopic
- Drawer: 1 no., 450mm wide, full extension channels

- Shutter: 1 no. with hardware
- Glass top: 12mm toughened, polished edges
- Grommet: 60mm diameter for cables
- Partition wall: 450mm high on tabletop as per drawing
- Footrest: Under main table

3. Back Side Unit (900×400×750mm):

- Drawers: 2 nos., 200mm high each
- Shutters: 2 nos. as per elevation
- All hardware as specified
- Laminate finish matching main table

4. Quality Standards:

- All joints tight and square
- Mechanisms function smoothly
- Finish uniform throughout
- Stability tested

Dimensions:

- Main Table: L-shaped 1350×750×750mm + 750×400×750mm
- Back Unit: 900×400×750mm

Mode of Measurement:

Per Set or Per Number

ITEM NO. 8

Providing and supplying Central Table having size 200 cm (L) x 100 cm (W) x 90 cm (H), made using kiln-dried and treated fine quality C.P. teakwood (M5) for the structural frame and 19 mm thick plywood (M1) for the tabletop. The tabletop finish shall vary based on location and function, as specified and approved by the Architect: Granite top finish for tables located in laboratories. 1.0 mm thick decorative laminate (M24) finish for reading tables in the library and girls' room. All required fixtures and fastening hardware (M14) shall be provided. All exposed edges of the top shall be finished with teak wood beading Patti (M4) and coated with approved enamel paint (M31). The entire assembly shall be completed as per approved architectural drawings and as

instructed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	C.P. Teakwood	IS 1708	Kiln dried, moisture content 8-12%
2	Plywood	IS 303 / IS 4990	19mm thick, BWR grade
3	Decorative Laminate	IS 2046	1.0mm thick (for library/girls room)
4	Granite	IS 12600	20-25mm thick (for laboratories)
5	Teak Wood Beading	IS 1708	As specified
6	Enamel Paint	IS 2392	Synthetic enamel, ISI marked
7	Wood Primer	IS 104	For undercoat
8	Hardware	IS 1367	All fixings

Labour & Workmanship:

As per IS 729

1. Teakwood Frame:

- All teakwood kiln dried, moisture content 8-12% as per IS 1734
- Frame members: 75mm × 50mm (or as per design)
- Joints: Mortise and tenon with hardwood dowels
- All joints glued with synthetic resin adhesive IS 848
- Frame square, checked with diagonal measurements
- Legs perpendicular, checked with plumb line

2. Plywood Top (19mm):

- Fixed to frame with screws and adhesive
- Screws from underneath, not visible from top
- Top surface sanded smooth

3. Top Finish:

For Laboratory (Granite Top):

- Granite slab 20-25mm thick

- Fixed with cement-sand mortar 1:4
- Edges polished or machine cut
- Surface machine polished
- Joints grouted and sealed

For Library/Girls Room (Laminate):

- 1.0mm decorative laminate applied
- Contact adhesive used
- Edges trimmed flush
- Corners radiused

4. Edge Treatment:

- Teak beading fixed on all exposed edges
- Mitre joints at corners
- Fixed with adhesive and pins

5. Painting (Exposed Wood):

- Surface preparation: sanded smooth with 120 grit
- Primer coat: 1 coat as per IS 104
- Putty applied if needed, sanded smooth
- Enamel paint: 2 coats as per IS 2392
- Each coat allowed to dry 24 hours minimum
- Final coat smooth and uniform

6. Assembly:

- All components properly aligned
- Frame joints tight, no gaps
- Top level in both directions
- Table stable on floor

Dimensions:

200 cm (L) × 100 cm (W) × 90 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 9

Providing and supplying Faculty Table of size 120 cm (L) x 75 cm (W) x 75 cm (H), made using 19 mm thick plywood (M1) for the structure and finished with 1.0 mm thick decorative laminate (M24), as approved by the Architect. The table shall be fixed with all necessary fixtures and fastening hardware (M14). The top portion of the table shall have all exposed edges finished with teak wood beading Patti (M4) and melamine polish (M29) of approved quality. The table shall include one 0.20 m support at the top center and two supports at the bottom for added structural stability. Complete in all respects as per the approved architectural drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials & Workmanship:

Same as Item 5

Dimensions:

120 cm (L) × 75 cm (W) × 75 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 10

Providing and supplying 3-seater sofa constructed with a 19 mm thick plywood (M1) structural frame, supported by stainless steel (S.S.) legs, securely fixed with all necessary fixtures and fastening hardware (M14). The seat, back, and handle portions shall be cushioned with 150 mm thick PU foam of 32 density (M22), further covered with 14 mm thick PU foam (M22) and a Madarpat cover. The entire sofa shall be upholstered with fabric (M26) or leather as suggested and approved by the Architect. The sofa shall be finished on the seat, back, and all visible sides in accordance with the Architect's drawings. Complete workmanship shall comply with the Architect's design and the instructions of the Engineer-in-Charge. Reference to drawings is essential. size: 2.1 m (L) × 0.95 m (W) × 0.80 m (H). It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick, BWR grade
2	Stainless Steel Legs	IS 6603	Grade 304, satin/chrome finish
3	PU Foam (Base)	IS 8814	150mm thick, 32 density
4	PU Foam (Overlay)	IS 8814	14mm thick, 32 density
5	Madarpat Cover	IS 2462	Canvas cloth
6	Fabric Upholstery	IS 1949	As per approved sample
7	Leather (if specified)	IS 7900	Genuine leather
8	Hardware	IS 1367	Bolts, brackets, staples

Labour & Workmanship:**As per IS 8823 (Upholstered Furniture)****1. Frame Construction:**

- Plywood cut and assembled into box frame
- Joints: Screwed and glued with blocks
- Frame dimensions: 2100mm (L) × 950mm (W) × 800mm (H)
- Internal bracing provided for support
- All joints tight and square

2. Stainless Steel Legs:

- 304 grade SS
- Fixed with bolts through base plate
- Height: 100-150mm (as per design)
- Finish: Satin or chrome as specified
- Adjustable feet for leveling

3. Cushioning:**a. Base Cushion (Seat):**

- PU foam 150mm thick, 32 density
- Cut to exact seat dimension
- Bonded to plywood base with approved adhesive

b. Overlay:

- PU foam 14mm thick
- Laid over 150mm base foam
- Provides softness and comfort

c. Madarpat Cover:

- Canvas cloth stretched over foam
- Stapled underneath, staples 50mm apart
- Stretched tight without wrinkles

4. Upholstery:

- Fabric/leather cut as per pattern with 20mm excess
- Sewn with double stitching, 6-8 stitches per inch
- Stretched over Madarpat and stapled underneath
- Corners properly folded and tucked
- Piping or welting at seams if specified
- Back, seat, and arms fully upholstered

5. Finishing:

- Bottom covered with dust cover fabric
- All visible surfaces smooth and taut
- No visible staples from front/sides
- Uniform appearance

6. Quality Check:

- Sitting test: 100 kg load, no sag more than 25mm
- Stability: No tipping or rocking
- Upholstery: No loose areas or wrinkles

Dimensions:

2.1 m (L) × 0.95 m (W) × 0.80 m (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 11

Providing and supplying 2-seater sofa made using 19 mm thick plywood (M1) structural frame, supported by stainless steel (S.S.) legs with all required supports, fixtures, and fastening hardware (M14). The seat, back, and handle portions shall be cushioned with PU foam of 32 density (M22), with thickness as per design, and additionally covered with 14 mm thick PU foam (M22) and Madarpat fabric. The entire sofa shall be upholstered with fabric (M26) or leather as suggested and approved by the Architect, and finished on the seat, back, and all visible sides as per architectural drawings. The item shall be executed in complete compliance with the Architect's design and the instructions of the Engineer-in-Charge. Refer to the drawing size: 1.5 m (L) × 0.95 m (W) × 0.80 m (H). It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials & Workmanship:

Same as Item 10

Dimensions:

1.5 m (L) × 0.95 m (W) × 0.80 m (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 12

Providing and supplying Centre Table / Corner Table / Tipoi with Glass Top, made with 19mm thick plywood (M1) structure, finished with 1.0 mm thick decorative laminate sheet (M24) as specified and approved by the Architect, and fixed with necessary fixtures and fastening (Hardware) (M14). The table shall rest on four solid wooden legs of size 50mm x 50mm made from C.P. teakwood (M5). A 50mm x 50mm wooden frame shall be provided at the top for support. Over this frame, a 75mm wide plywood patta (M1) shall be fixed on all sides, finished with approved melamine polish (M29). The patta shall have a 2 mm wide groove to securely hold an 8 mm thick toughened glass top (M27) with polished edges. Internal MS support bars and a center stiffener shall be provided as per drawing for structural stability. Table size shall be 950 mm (L) x 500 mm (W) x 450 mm (H). Complete as per Architect's drawing and as per instructions of the Architect & Engineer-in-Charge

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303	19mm thick, 75mm wide patta
2	Decorative Laminate	IS 2046	1.0mm thick
3	C.P. Teakwood	IS 1708	50×50mm for legs and frame
4	Toughened Glass	IS 2553 (Part 1)	8mm thick, polished edges
5	Melamine Polish	-	Approved brand
6	MS Support Bars	IS 1239	For internal reinforcement
7	Hardware	IS 1367	Screws, brackets

Labour & Workmanship:**As per IS 729****1. Teakwood Legs (4 nos.):**

- Size: 50mm × 50mm
- Length: 450mm (table height)
- Kiln dried, moisture content 8-12%
- Edges chamfered or rounded
- Surface sanded smooth

2. Top Frame (50×50mm):

- Four pieces forming rectangle 950×500mm
- Corners: Half-lap or mortise-tenon joints
- Glued and screwed
- Frame level and square

3. Plywood Patta (75mm wide):

- 19mm thick plywood
- Cut in four strips for sides
- Mitre joints at corners
- Fixed to top frame with screws from inside

4. Groove for Glass:

- 2mm wide groove routed on inner edge of patta

- Depth: 10-12mm
- Groove clean and straight

5. Laminate Application:

- Decorative laminate applied to plywood patta
- Contact adhesive used
- Edges trimmed flush

6. Melamine Polish:

- Applied to all exposed wood surfaces
- 2-3 coats with sanding between coats
- Final coat buffed smooth

7. Internal MS Support:

- MS flat/angle bars fixed between legs
- Provides diagonal bracing
- Center stiffener under tabletop
- All connections welded or bolted

8. Glass Top (8mm toughened):

- Cut to fit in groove (approx. 946×496mm)
- All edges polished smooth
- Corners rounded 5mm radius
- Toughening as per IS 2553
- Glass sits in groove on rubber strip

9. Assembly:

- Legs fixed to frame with screws and glue
- All joints tight
- Table level, no wobble
- Glass secure but removable

Dimensions:

950 mm (L) × 500 mm (W) × 450 mm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 13

Providing and supplying visitor's group seating for three persons, fabricated from perforated S.S. CRC sheet (C-201) and 1.5 mm thick steel plate. The bottom support frame shall be constructed using 20 mm × 40 mm S.S. CRC tubes, finished with stainless steel chrome plating, in accordance with the specification sheet and approved sample. All work shall be completed as per the design and instructions of the Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Perforated SS/CRC Sheet	IS 1079 / IS 513	Grade C-201, 1.5mm thick
2	Steel Plate	IS 2062	1.5mm thick
3	SS/CRC Tubes	IS 1161 / IS 4923	20mm × 40mm
4	Chrome Plating	IS 1573	Minimum 8-12 micron thickness
5	Powder Coating	IS 14536	50-80 micron (alternative to chrome)
6	Welding Electrodes	IS 814 / IS 815	As per base metal

Labour & Workmanship:

As per IS 816, IS 817 (Welding)

1. Frame Fabrication:

- Tubes 20×40mm SS/CRC
- Cut to length with ±1mm tolerance
- Ends squared
- Frame for 3-seat unit approx. 1800mm long

2. Seat and Back Panels:

- Perforated sheet C-201 pattern

- OR 1.5mm plain steel plate
- Cut to size as per drawing
- Edges deburred, smooth

3. Welding:

- All welding as per IS 816/817
- TIG welding for SS, MIG/arc for MS
- Weld seams ground flush
- No porosity, cracks, or undercut
- All joints full penetration where specified

4. Surface Preparation:

- Degreasing with solvent
- Rust removal by wire brushing
- Phosphating for powder coating
- Surface clean and dry

5. Finishing:

Chrome Plating:

- Nickel plating first, then chrome
- Chrome thickness 8-12 micron as per IS 1573
- Bright, uniform finish
- No pits, cracks, or dull spots

OR Powder Coating:

- Epoxy polyester powder
- Electrostatic application
- Curing at 180-200°C for 15-20 min
- Thickness 50-80 micron
- Smooth, uniform finish

6. Assembly:

- All components properly aligned
- Seat and back fixed at ergonomic angles

- Seat height: 420-450mm
- Back inclination: 100-110° from seat
- Unit stable, no rocking

7. Quality Checks:

- Load test: 100 kg per seat
- No deflection more than 10mm
- No sharp edges or burrs
- Finish uniform throughout

Mode of Measurement:

Per Number (Each 3-seat unit) or Per Seat

ITEM NO. 14

Providing and supplying Computer Table with Partition of size 900mm (L) x 700mm (W) x 750mm (H) made with 19mm thick Plywood (M1) structure as per architect's drawing, finished externally with 1.0mm thick decorative laminate (M24) and internally with 0.8mm thick liner laminate, all as specified and approved by the architect. The table shall include a partition panel, Plastic Computer Desk Table Grommet Cable Wire Outlet Hole Cover (60mm dia), a keyboard tray, dedicated space for CPU unit, and stainless steel legs, all fixed with necessary fixtures and fasteners (M14). All exposed edges shall be finished with teakwood beading Patti (M4) and polished with approved melamine polish (M29). Complete in all respects as per architect's drawings and the instructions of the architect and engineer in charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick, BWR grade
2	Decorative Laminate	IS 2046	1.0mm thick external
3	Liner Laminate	IS 2046	0.8mm thick internal
4	Teak Wood Beading	IS 1708	8mm thick
5	Melamine Polish	-	Approved brand
6	SS Legs	IS 6603	40×40mm or 50mm dia.

S.No. Material Description Indian Standard Specification

7	Keyboard Tray	-	With telescopic slides
8	Grommet	-	60mm diameter plastic
9	Hardware	IS 1367	All fixings

Labour & Workmanship:**As per IS 729, IS 4866****1. Main Table Construction:**

- Dimensions: 900×700×750mm
- Plywood carcass with dado joints
- Internal reinforcement with battens

2. Laminate Application:

- External: 1.0mm decorative laminate
- Internal: 0.8mm liner laminate
- Applied with contact adhesive
- Edges trimmed flush

3. Partition Panel:

- Height as per drawing (typically 300-450mm above table)
- Made from 19mm plywood, laminated both sides
- Fixed to tabletop or rear of table
- Provides privacy between workstations

4. Keyboard Tray:

- Mounted under tabletop
- Telescopic slides for pull-out
- Size approx. 600×300mm
- Height clearance for knees

5. CPU Space:

- Dedicated compartment or shelf
- Size: 250×500mm approximately

- Ventilation holes if enclosed

6. Stainless Steel Legs:

- 304 grade SS
- 40×40mm square or 50mm diameter round
- Height 750mm with adjustable feet
- Fixed with base plates and screws

7. Cable Grommet:

- 60mm diameter hole drilled in top
- Plastic grommet with flip cover
- Positioned for easy cable routing

8. Edge Finishing:

- Teak beading on all exposed edges
- Mitre joints at corners
- Melamine polish applied

9. Quality Standards:

- All surfaces flush and smooth
- Keyboard tray slides smoothly
- Table stable and level
- Load capacity: 30 kg minimum

Dimensions:

900mm (L) × 700mm (W) × 750mm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 15

Providing and supplying modular conference table (as per layout and image) with 600 mm width, made from double layers of 19mm thick plywood (M1) structure finished with 1.5 mm thick decorative laminate (M24) sheet approved by architect, including necessary fixtures and fastening (M14). Each module is 120 x 60 x 75 cm in size, along with two quarter-circle corner modules forming a continuous loop as shown in the image. The table top edges shall be

covered with half-round teakwood beading (M4) finished with approved melamine polish (M29). The table includes laminated modesty panels, side supports, and provisions for cable management, electrical plug points, mic ports, and switchboards, with concealed routing through cutouts and internal cable raceways. Complete as per architect's drawings and instructions of architect and engineer in charge.

Materials:

S.No.	Material Description	Indian Standard Specification	
1	Plywood (Double Layer)	IS 303 / IS 4990	19mm × 2 = 38mm thick total
2	Decorative Laminate	IS 2046	1.5mm thick
3	Half-Round Teak Beading	IS 1708	As per size
4	Melamine Polish	-	Approved brand
5	Modesty Panels	-	Laminated plywood/MDF
6	Cable Management	-	Grommets, raceways
7	Electrical Fittings	IS 1293, IS 3854	Plug points, switches
8	Hardware	IS 1367	Connectors, brackets

Labour & Workmanship:

As per IS 729, IS 4866

1. Module Construction:

- Each module: 120×60×75 cm
- Double layer plywood (19mm × 2)
- Layers bonded with adhesive and screwed
- Edges sealed before laminating

2. Quarter-Circle Corner Modules:

- Radius 60cm (matching width)
- Double layer plywood
- Cut with template for uniformity
- Forms continuous loop as per layout

3. Laminate Application:

- 1.5mm thick decorative laminate

- Applied to top surface
- Contact adhesive used
- Rolled with 50kg roller
- Edges trimmed flush

4. Edge Treatment:

- Half-round teak beading on all edges
- Mitered at corners and junctions
- Fixed with adhesive and pins
- Melamine polish applied
- Smooth, rounded profile

5. Modesty Panels:

- Laminated panels under tabletop
- Height: 300-400mm from floor
- Fixed to table underside
- Provides privacy for seated users

6. Cable Management:

- Cutouts in tabletop for cables
- Grommets with flip covers
- Internal cable raceways/trays
- Routing from module to module
- Concealed wiring wherever possible

7. Electrical Installations:

- Plug points: As per requirement (6A/16A)
- Switches: Modular type
- Microphone ports: XLR or standard
- All as per electrical code IS 732
- Wiring concealed in cable trays

8. Module Connection:

- Modules connected with connectors/brackets

- Alignment maintained across all modules
- Top surface continuous and level
- No gaps at junctions

9. Quality Control:

- All surfaces flush, ± 1 mm tolerance
- Electrical connections tested
- Cable management functional
- Table stable, no wobble
- Finish uniform throughout

Dimensions:

- Module: 120 cm (L) × 60 cm (W) × 75 cm (H)
- Width: 600mm throughout
- Total length as per layout

Mode of Measurement:

Per Running Meter or Per Module or Per Set

ITEM NO. 16

Providing and supplying table of size 220 cm (L) x 100 cm (W) x 90 cm (H) made using Kiln dried & treated fine quality C.P. Teakwood (M5) structure and 19mm thick Plywood (M1) top, as per architect's drawing. The table shall be externally finished with 1.0 mm thick decorative laminate (M24) and internally with 0.8 mm thick liner laminate, as specified and approved by the architect. It shall include drawers with Telescopic roller channels (M15), handles (M19), and all necessary fixtures and fasteners (Hardware) (M14), all as per drawing. All exposed edges shall be covered with Teak wood beading Patti (M4) finished with approved melamine polish (M29). The item shall be completed in all respects as per detailed architect's drawings and instructions of the architect and engineer in charge.

Materials:

S.No. Material Description Indian Standard Specification

1	C.P. Teakwood	IS 1708	Kiln dried structure
2	Plywood	IS 303 / IS 4990	19mm thick

S.No. Material Description Indian Standard Specification

3	Decorative Laminate	IS 2046	1.0mm external
4	Liner Laminate	IS 2046	0.8mm internal
5	Telescopic Channels	IS 3564	For drawers
6	Handles	IS 3564	As per design
7	Teak Beading	IS 1708	8mm thick
8	Melamine Polish	-	Approved brand
9	Hardware	IS 1367	All fixings

Labour & Workmanship:**As per IS 729****1. Teakwood Frame:**

- Kiln dried, moisture content 8-12%
- Frame members cut and joined
- Mortise-tenon or dowel joints
- Glued and assembled square

2. Plywood Top & Carcass:

- 19mm thick plywood
- Cut to size, edges sealed
- Carcass assembled with dado joints

3. Lamination:

- External: 1.0mm decorative laminate
- Internal: 0.8mm liner laminate
- Applied as per standard procedure

4. Drawers:

- Number and size as per drawing
- Drawer box from 12mm plywood
- Telescopic roller channels installed
- Full extension type

- Handles fixed centrally
- Drawer fronts match table finish

5. Edge Treatment:

- Teak beading on exposed edges
- Melamine polish applied

6. Assembly:

- All components properly aligned
- Drawers slide smoothly
- Table stable and level

Dimensions:

220 cm (L) × 100 cm (W) × 90 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 17

Providing and supplying Reading Table with Partition made using Kiln-dried & treated fine quality C.P. Teakwood (M5) frame structure. The tabletop and partition panels shall be constructed from 19mm thick plywood (M1), finished with 1.0 mm thick decorative laminate (M24) as per the approved shade. A soft board shall be fixed on 19mm thick plywood partition to serve as a pin-up board on both sides, as shown in the drawing.

The tabletop structure shall be supported by a 50mm x 50mm teakwood frame, along with 50mm x 50mm solid teakwood legs, including all necessary fixtures and fastening hardware (M14). The table shall also include internal cross bracing for structural stability, as illustrated

All exposed edges, including the top and partitions, shall be finished with teakwood beading patti (M4) and coated with approved enamel paint (M31).

Complete in all respects as per the architectural drawings and the instructions of the Architect & Engineer in charge.

Reading Table Unit Size: 200 cm (L) x 120 cm (W) x 90 cm (H) Partition Height Above Table: 45 cm

Materials:

S.No. Material Description Indian Standard Specification

1	C.P. Teakwood	IS 1708	50×50mm frame and legs
2	Plywood	IS 303 / IS 4990	19mm thick
3	Decorative Laminate	IS 2046	1.0mm thick
4	Soft Board	IS 3348	For pin-up board
5	Teak Wood Beading	IS 1708	As specified
6	Enamel Paint	IS 2392	Synthetic enamel
7	Wood Primer	IS 104	For undercoat
8	Hardware	IS 1367	Screws, brackets

Labour & Workmanship:**As per IS 729****1. Teakwood Frame (50×50mm):**

- Top frame: 2000×1200mm
- Corners: Mortise-tenon joints
- Glued with resin adhesive IS 848
- Frame square and level

2. Teakwood Legs (50×50mm):

- Four legs, height 900mm
- Fixed to frame corners
- Mortise joints or bolted with brackets
- Legs perpendicular and plumb

3. Cross Bracing:

- Diagonal or straight bracing between legs
- Provides lateral stability
- Fixed with screws or dowels

4. Plywood Tabletop (19mm):

- Dimension: 2000×1200mm
- Fixed to top frame with screws from underneath

- Surface sanded smooth

5. Laminate Application:

- 1.0mm decorative laminate
- Applied to tabletop
- Contact adhesive used
- Edges trimmed flush

6. Partition Panel:

- Height: 450mm above table surface
- Made from 19mm plywood
- Laminated on visible surfaces
- Fixed vertically at center or as per drawing

7. Soft Board (Pin-up Board):

- Soft board/cork board as per IS 3348
- Fixed on both sides of partition
- Size: Full partition area
- Provides pin-up surface for notices
- Fixed with adhesive and panel pins

8. Edge Treatment:

- Teak beading on tabletop edges
- Teak beading on partition edges
- Mitre joints at corners
- Fixed with adhesive and pins

9. Painting:

- All exposed wood surfaces
- Surface preparation: sanding
- Primer: 1 coat as per IS 104
- Enamel paint: 2 coats as per IS 2392
- Each coat dried minimum 24 hours
- Final surface smooth and uniform

10.Assembly & Finishing:

- All joints tight, no movement
- Table and partition level
- Table stable on floor
- Soft board securely fixed

Dimensions:

- Table: 200 cm (L) × 120 cm (W) × 90 cm (H)
- Partition: 45 cm above table

Mode of Measurement:

Per Number (Each) or Per Unit

ITEM NO. 18

Providing and supplying 2-seater student bench with integrated desk, fabricated from mild steel (MS) square tube sections of 25.4 × 25.4 × 1.2 mm, finished with one coat of metal primer, surface preparation using putty, followed by an undercoat and final coat of superior quality synthetic enamel paint conforming to IS:2392, in a single architect-approved color shade. The bench shall include a seat (1000 mm × 330 mm), backrest (1000 mm × 200 mm), and desktop (1000 mm × 400 mm), all made from 18 mm thick MDF finished with 1.0 mm thick decorative laminate (M24), and fixed to the MS structure with all necessary fixtures and hardware (M14). A modesty panel made of 18G sheet metal shall be fixed under the desktop, and a 5 mm diameter MS rod bag hook shall be provided below. Overall dimensions: total bench length 1000 mm, bench height 750 mm, seat height 410 mm, total depth 570 mm, footrest height 135 mm, and backrest inclined at 15°. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	MS Square Tube	IS 1161	25.4×25.4×1.2mm
2	Metal Primer	IS 2074	Red oxide or zinc chromate
3	Putty	IS 5410	For filling
4	Enamel Paint	IS 2392	Synthetic enamel, ISI marked

S.No. Material Description Indian Standard Specification

5	MDF	IS 12406	18mm thick
6	Decorative Laminate	IS 2046	1.0mm thick
7	Sheet Metal	IS 513	18G for modesty panel
8	MS Rod	IS 1786	5mm diameter for bag hook
9	Hardware	IS 1367	Nuts, bolts, screws
10	Welding Electrodes	IS 814	As per base metal

Labour & Workmanship:**As per IS 4866, IS 816 (Welding)****1. MS Frame Fabrication:**

- Tubes 25.4×25.4×1.2mm cut to length
- Frame dimensions:
 - Total length: 1000mm
 - Total height: 750mm
 - Total depth: 570mm
 - Seat height: 410mm
 - Footrest height: 135mm
- All welding as per IS 816
- Joints full penetration
- Weld seams ground smooth and flush

2. Frame Configuration:

- Front legs vertical
- Rear legs angled to support backrest at 15° inclination
- Horizontal members for seat support
- Desktop support frame
- Footrest bar at 135mm from floor
- All members square and aligned

3. MDF Components:

a. Seat (1000×330mm):

- 18mm MDF cut to size
- Edges sanded smooth
- Laminated on top surface with 1.0mm laminate
- Bottom may be painted or laminated

b. Backrest (1000×200mm):

- 18mm MDF
- Laminated both sides
- Inclined at 15° from vertical

c. Desktop (1000×400mm):

- 18mm MDF
- Laminated on top
- Slight forward tilt (5-10°) optional

4. MDF to Frame Fixing:

- Fixed with screws through pre-drilled holes
- Screws from underneath, not visible from top
- All connections secure, no movement

5. Modesty Panel:

- 18G sheet metal
- Size to close front under desktop
- Welded or bolted to frame
- Edges folded for safety

6. Bag Hook:

- 5mm diameter MS rod
- Bent to hook shape
- Welded below seat level
- Smooth, no sharp edges

7. Surface Preparation:

- Metal: Degreased and cleaned

- Rust removed by wire brushing
- Surface dry and clean

8. Painting:

- Metal primer: 1 coat as per IS 2074
- Putty application on imperfections
- Sanded smooth after drying
- Undercoat: 1 coat
- Enamel paint: 2 coats as per IS 2392
- Each coat dried 24 hours
- Final finish smooth, uniform color
- No runs, sags, or brush marks

9. Quality Checks:

- All dimensions as specified $\pm 2\text{mm}$
- Backrest angle $15^\circ \pm 1^\circ$
- Seat horizontal $\pm 1^\circ$
- Load test: 100 kg on seat, no permanent deformation
- Stability: No tipping when loaded
- All welds sound, no cracks
- Paint finish uniform, adhesion tested

Dimensions:

- Bench length: 1000mm (for 2 students)
- Bench height: 750mm
- Seat height: 410mm
- Total depth: 570mm
- Footrest height: 135mm
- Backrest inclination: 15°

Mode of Measurement:

Per Number (Each 2-seater unit)

ITEM NO. 19

Providing and supplying Full/low/medium Height Storage Units made using 19 mm thick plywood (M1) for the main structure, finished externally with 1.0 mm thick decorative laminate (M24) and internally with 0.8 mm thick liner laminate (M25), all as per design and as approved by the Architect. Storage shutters shall be made of the same ply and laminate combination and fixed with all required hardware including handles (M19), hinges (M18), magnets (M18), and locks (M16). The units shall include removable ply shelves supported on both sides with teak wood battens (M5). All exposed edges shall be finished with 8 mm thick teak wood beading patties (M4) coated with melamine polish (M29). All hardware and fixers required for complete installation shall be included (M14). The units shall be executed strictly as per approved architectural drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick, BWR/BWP grade
2	Decorative Laminate	IS 2046	1.0mm external
3	Liner Laminate	IS 2046	0.8mm internal
4	Handles	IS 3564	Brass/SS, approved make
5	Hinges	IS 3564	Cup hinges 35mm
6	Magnets	IS 3564	Magnetic catch
7	Locks	IS 4968	Good quality
8	Teak Wood Battens	IS 1708	For shelf support
9	Teak Beading	IS 1708	8mm thick
10	Melamine Polish	-	Approved brand
11	Hardware	IS 1367	All fixings

Labour & Workmanship:

As per IS 729, IS 4866

1. Carcass Construction:

- Box construction from 19mm plywood

- Joints: Dado, doweled, or screwed with blocks
- Internal corners reinforced
- Back panel: 6mm or 12mm plywood in groove
- Carcass square, checked with diagonals

2. **Types:**

- **Full Height:** 1800-2400mm
- **Medium Height:** 1200-1500mm
- **Low Height:** 600-900mm
- Width: 600-1200mm typically
- Depth: 400-600mm

3. **Laminate Application:**

- External surfaces: 1.0mm decorative laminate
- Internal surfaces: 0.8mm liner laminate
- Contact adhesive used
- Edges post-formed or lipped

4. **Shutters:**

- Made from 19mm plywood
- Laminated both sides (1.0mm external, 0.8mm internal)
- Size as per opening less 3mm clearance all around
- Edges lipped with matching laminate or PVC edge banding

5. **Shelves:**

- 19mm plywood
- Laminated or painted
- Removable, resting on teak battens
- Battens fixed on both sides at required heights
- Shelf spacing typically 300-400mm

6. **Hardware Installation:**

a. **Hinges:**

- Cup hinges 35mm, soft-close type preferred

- 2 hinges for shutters up to 1200mm height
- 3 hinges for taller shutters
- Properly aligned, shutters hang straight

b. Handles:

- Fixed centrally on shutters
- Consistent height across all units
- Screws from inside, not visible

c. Magnetic Catch:

- Installed on each shutter
- Magnet on carcass, plate on shutter
- Holds shutter closed securely

d. Locks:

- Cam locks or cylinder locks
- One lock per unit minimum
- Lock installed centrally
- All locks keyed alike if multiple units

7. Edge Treatment:

- All exposed edges finished with 8mm teak beading
- Mitre joints at corners
- Fixed with adhesive and pins
- Pins punched below surface, filled
- Beading sanded smooth

8. Polish Application:

- Melamine polish on beading and exposed wood
- 2-3 coats applied
- Each coat dried and sanded lightly
- Final coat buffed smooth

9. Installation:

- Units positioned as per layout

- Leveled using shims if needed
- Wall-fixed units anchored securely
- Adjacent units connected if specified

10. Quality Standards:

- All shutters open/close smoothly
- Shutters aligned, uniform gaps
- Shelves level and stable
- No visible defects in laminate
- Hardware functions properly
- Unit stable, doesn't tip forward

Dimensions:

As per architectural drawings and requirements

Mode of Measurement:

Per Number (Each unit) or Per Square Meter of elevation

ITEM NO. 20

Providing and supplying Full Height Storage Unit of size 1200 mm (W) x 450 mm (D) x 2100 mm (H), made using 19 mm thick plywood (M1) for the main structure, externally finished with 1.0 mm thick decorative laminate (M24) and internally with 0.8 mm thick liner laminate (M25), all as specified and approved by the Architect. The shutters, made from matching plywood and laminate, shall be fitted with 6 mm thick glass panels, and provided with all necessary hardware including handles (M19), hinges (M18), magnets (M18), and locks (M16). All fittings and fixtures shall be of approved make and include hardware (M14). The unit shall incorporate removable plywood shelves, supported on both sides with teak wood battens (M5). All exposed edges shall be finished with 8 mm thick teak wood beading patties (M4) polished with melamine finish (M29). The entire assembly shall be executed in accordance with the approved architectural drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

Same as Item 19, plus:

S.No. Material Description Indian Standard Specification

12	Clear Glass	IS 2553	6mm thick, edges polished
13	Glass Beading	-	Wooden or aluminum

Labour & Workmanship:**As per Item 19, plus:****1. Glass Panel Installation:**

- 6mm clear glass cut to fit shutter frame
- Size: Frame dimension less 10mm all around
- Glass edges polished smooth
- Fitted in rebate with glass beading
- Beading fixed with pins/clips
- Glass secure but replaceable if broken

2. Frame for Glass Shutter:

- Shutter frame from 19mm plywood or hardwood
- Frame width 50-75mm
- Rebate routed for glass and beading
- Frame laminated to match unit

3. Safety:

- Glass properly seated, no rattling
- Edges not exposed
- If large panels, consider safety film

Dimensions:

1200mm (W) × 450mm (D) × 2100mm (H)

Mode of Measurement:**Per Number (Each)****ITEM NO. 21**

Providing and supplying full height storage unit (M.S. Tijori – Steel Cupboard), fabricated using mild steel and finished with a powder-coated surface in grey

color both externally and internally, as approved by the Architect. The unit shall have two doors made of 6 mm thick clear glass, fixed with handles (M19), hinges (M18), magnets (M18), and locks (M16), complete with all necessary hardware (M14). The storage shall include four fixed shelves, installed using appropriate fixtures and fastening hardware (M14). The complete unit shall be executed as per approved drawings and the instructions of the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge. (Overall Size: 90 cm × 60 cm × 240 cm)

Materials:

S.No. Material Description Indian Standard Specification

1	Mild Steel Sheets	IS 2062	18G to 22G thickness
2	MS Angles	IS 2062	For internal frame
3	Powder Coating	IS 14536	Grey color, 50 micron minimum
4	Clear Glass	IS 2553	6mm thick for doors
5	Handles	IS 3564	As specified
6	Hinges	IS 3564	Heavy duty
7	Magnets	IS 3564	Magnetic catch
8	Locks	IS 4968	Good quality
9	Shelves	IS 2062	MS sheet, adjustable
10	Welding Electrodes	IS 814	As per base metal

Labour & Workmanship:

As per IS 816, IS 817 (Fabrication & Welding)

1. Carcass Fabrication:

- Main body from 20G or 22G MS sheet
- Dimensions: 900×600×2400mm
- Joints welded with continuous welds
- Weld seams ground smooth
- Internal frame from MS angles for rigidity

2. Doors (2 nos.):

- Frame from 18G MS sheet or MS angle
- Glass panel 6mm thick clear glass
- Glass held in rebate with beading
- Each door covers half width of cupboard

3. Shelves (4 fixed):

- Made from 20G MS sheet
- Width: 870mm (cupboard width -30mm)
- Depth: 550mm
- Edges folded for stiffness
- Fixed or adjustable on slots

4. Surface Preparation:

- Degreasing with solvent cleaner
- Rust and mill scale removed
- Phosphating for powder coating
- Surface clean and dry

5. Powder Coating:

- Grey color as specified
- Both internal and external
- Epoxy polyester powder
- Electrostatic spray application
- Curing at 180-200°C for 15-20 minutes
- Coating thickness 50-80 micron
- Uniform coverage, no bare spots
- Smooth finish, no orange peel

6. Hardware Installation:

- Hinges: Heavy duty, 2-3 per door
- Handles: Fixed on doors
- Magnetic catches: One per door
- Lock: Central locking mechanism

- All hardware powder coated to match

7. Assembly:

- Doors hung properly, aligned
- Doors open 90° minimum
- Uniform gap around doors
- Shelves level and stable
- Unit square and stable

8. Quality Checks:

- No sharp edges anywhere
- All welds sound
- Powder coating adhesion tested (cross-hatch)
- Doors function smoothly
- Lock operates properly
- Glass secure in frames

Dimensions:

900mm (W) × 600mm (D) × 2400mm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 22

Providing and supplying stool with table top of size 45 cm (L) x 45 cm (W) x 60 cm (H), made using 19 mm thick plywood (M1) for the top, finished with 1.0 mm thick decorative laminate (M24), fixed with necessary fixtures and fastening hardware (M14). The entire structure shall be fabricated using MS square box pipe of size 25 x 25 x 3.2 mm, finished with one coat of metal primer and two coats of approved superior quality synthetic enamel paint, conforming to IS:2392 and of ISI-marked standard make. The unit shall be fabricated and installed complete as per the approved architectural drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick for top
2	Decorative Laminate	IS 2046	1.0mm thick
3	MS Square Box Pipe	IS 1161	25×25×3.2mm
4	Metal Primer	IS 2074	Red oxide/zinc chromate
5	Enamel Paint	IS 2392	Synthetic enamel, ISI marked
6	Hardware	IS 1367	Screws, bolts

Labour & Workmanship:**As per IS 816, IS 729****1. MS Frame:**

- Square pipe 25×25×3.2mm
- Four legs, height 600mm
- Top frame to support plywood top
- Footrest bars connecting legs
- All welding as per IS 816
- Weld seams ground smooth

2. Plywood Top (19mm):

- Size: 450×450mm
- Edges sanded smooth
- Laminated on top surface
- Bottom painted or laminated

3. Laminate Application:

- 1.0mm decorative laminate
- Applied with contact adhesive
- Edges trimmed flush

4. Top to Frame Fixing:

- Plywood fixed to MS frame with screws
- Pre-drilled holes to prevent splitting

- Screws from underneath

5. **Painting:**

- Metal surfaces prepared
- Primer: 1 coat
- Enamel paint: 2 coats as per IS 2392
- Dried between coats
- Smooth, uniform finish

6. **Quality:**

- Stool stable, doesn't wobble
- Top level and secure
- Paint finish durable

Dimensions:

45 cm (L) × 45 cm (W) × 60 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 23

Providing and supplying workshop/lab stage/seminare made with using 19mmThk plywood (M1) and good quality wood (M5) frame structure with required necessary legs support fixed with necessary fixtures and fastening (hardware) (M14) All exposed edges shall be covered with required teak wood beading Patti (M4). The whole workshop and lab stage finished with approved superior quality synthetic enamel paint of standard make and ISI market confirming to IS-2392 shall be applied. Complete as per architect's drawings and as per instruction of architect and engineer in charge.(Refer drawings)

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick
2	Wood (Structural)	IS 1708	Good quality for frame
3	Teak Wood Beading	IS 1708	For edges

S.No. Material Description Indian Standard Specification

4	Enamel Paint	IS 2392	Synthetic enamel
5	Wood Primer	IS 104	For undercoat
6	Hardware	IS 1367	Screws, bolts, leg supports

Labour & Workmanship:**As per IS 729****1. Wooden Frame:**

- Frame members from good quality wood
- Size: 75×50mm or as per structural requirement
- Legs: 100×75mm or as per height and load
- Frame joints: Mortise-tenon or half-lap
- Glued and screwed/bolted
- Frame level and square

2. Platform Top:

- 19mm plywood
- Size as per requirement (refer drawings)
- Fixed to frame with screws from underneath
- Joints between ply sheets supported by frame
- Surface sanded smooth

3. Leg Supports:

- Legs at appropriate spacing (max 1200mm)
- Bracing between legs for stability
- Adjustable feet if required for leveling

4. Edge Treatment:

- Teak beading on exposed edges of platform
- Mitre joints at corners
- Fixed with adhesive and pins

5. Painting:

- All wood surfaces
- Primer: 1 coat
- Enamel: 2 coats as per IS 2392
- Smooth, uniform finish

6. Load Capacity:

- Platform designed for required load (typically 300 kg/m² minimum)
- No deflection more than span/360
- Stable under distributed and point loads

Dimensions:

As per drawings (variable)

Mode of Measurement:

Per Square Meter or **Per Number**

ITEM NO. 24

Providing and supplying Podium of size 58 cm (W) x 38 cm (D) x 110 cm (H), made using 19 mm thick plywood (M1) for the main structure and finished with 1.0 mm thick decorative laminate (M24) as approved by the Architect. The podium shall be fixed with all necessary fixtures and fastening hardware (M14). All exposed edges shall be finished with teak wood beading Patti (M4) and approved melamine polish (M29). The unit shall include provisions for carrying electrical wiring and mounting plug points, switches, microphone, etc. as per functional requirements. Complete in all respects as per the approved architectural drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick
2	Decorative Laminate	IS 2046	1.0mm thick
3	Teak Beading	IS 1708	As specified
4	Melamine Polish	-	Approved brand

S.No. Material Description Indian Standard Specification

5	Electrical Wiring	IS 694 (Part 1)	PVC insulated copper
6	Plug Points	IS 1293, IS 3854	6A/16A modular
7	Switches	IS 3854	Modular type
8	Hardware	IS 1367	Fixings

Labour & Workmanship:**As per IS 729****1. Box Construction:**

- 19mm plywood cut to size
- Box dimensions: 580×380×1100mm
- Front may be sloped for ergonomics
- Joints dado or screwed with blocks
- Back open or with removable panel for access

2. Laminate Application:

- External surfaces laminated
- 1.0mm decorative laminate
- Applied as per standard procedure
- Edges trimmed flush

3. Reading/Writing Surface:

- Top surface may be sloped
- Adequate width for papers/laptop
- May have lip to prevent items sliding

4. Internal Provisions:

- Shelf for equipment (laptop, papers)
- Cable routing channels
- Space for microphone base/amplifier

5. Electrical Installations:

- Wiring as per IS 732

- Plug points: 2-4 nos., 6A or 16A
- Switches: For lights/equipment
- Microphone socket if required
- Cable entry from bottom or rear
 - All connections safe and insulated

6. Edge Finishing:

- Teak beading on exposed edges
- Melamine polish applied

7. Stability:

- Base width adequate for stability
- May have wider base than top
- No tipping when leaned on

Dimensions:

58 cm (W) × 38 cm (D) × 110 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 25

Providing and supplying enclosed notice board of size 4' × 2' (approximately 1200 mm × 600 mm), fabricated with 6 mm thick clear acrylic sheet shutter mounted on anodized aluminum framing, complete with necessary fixtures, locks, and wall supports. The notice board shall have an openable front shutter with locking provision and be installed at a height as per site requirement. The frame shall be of durable anodized aluminum, and the entire unit shall be securely fixed with required hardware. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Acrylic Sheet	IS 12235	6mm thick, clear
2	Aluminum Frame	IS 733	Anodized

S.No. Material Description Indian Standard Specification

3	Lock	IS 4968	Good quality
4	Hinges	IS 3564	For shutter
5	Wall Supports	IS 1367	Brackets, rawl plugs

Labour & Workmanship:**As per IS 2202 (Aluminum Work)****1. Aluminum Frame:**

- Sections cut to form frame 1200×600mm
- Corners: Mitred and welded/screwed
- Frame anodized
- Groove or rebate for acrylic sheet

2. Acrylic Shutter:

- 6mm clear acrylic cut to size
- Edges polished
- Fitted in frame with beading or gasket
- Hinged on one side for opening

3. Lock & Hardware:

- Lock on opposite side from hinges
- Key-operated
- Hinges: 2 nos., stainless steel

4. Backing Board:

- Cork/soft board inside for pinning notices
- Or white board for markers
- Fixed to back of frame

5. Wall Mounting:

- Brackets fixed to wall at appropriate height
- Frame hung on brackets
- Height: Typically 1500mm from floor to bottom

- Level and secure

Dimensions:

1200mm × 600mm (4' × 2')

Mode of Measurement:

Per Number (Each)

ITEM NO. 26

Providing and supplying Chemical Storage Rack of size 90 cm (L) x 45 cm (W) x 120 cm (H) with 2 fixed shelves and a 0.2 m high back patta for each shelf, made using 19 mm thick plywood (M1). The shelves shall be supported with teakwood battens as per approved drawings and details. The entire unit shall be securely fixed on the platform with necessary fixtures and fastening hardware (M14). All external surfaces shall be finished with enamel paint (M31) of approved standard make. Complete in all respects as per architect's drawings and as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood	IS 303 / IS 4990	19mm thick
2	Teak Wood Battens	IS 1708	For shelf support
3	Enamel Paint	IS 2392	Synthetic enamel
4	Wood Primer	IS 104	For undercoat
5	Hardware	IS 1367	Screws, brackets

Labour & Workmanship:

As per IS 729

1. Shelf Construction:

- 2 fixed shelves from 19mm plywood
- Size: 900×450mm each
- Vertical spacing as per requirement

2. Back Patta:

- 200mm high back patta for each shelf
- Prevents items falling off back
- Fixed to shelf with screws and adhesive

3. Support System:

- Shelves supported on teak wood battens
- Battens fixed to wall or side panels
- Securely attached with screws

4. Fixing to Platform:

- Rack fixed on lab bench/platform
- Bolted or screwed down
- Stable, doesn't tip

5. Painting:

- All surfaces prepared
- Primer: 1 coat
- Enamel paint: 2 coats
- Chemical resistant paint preferred
- Smooth, uniform finish

6. Load Capacity:

- Each shelf designed for min 30 kg load
- Deflection minimal
- Battens adequately sized

Dimensions:

90 cm (L) × 45 cm (W) × 120 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 27

Providing, supplying, and fixing a white board of size 180 cm × 120 cm, comprising a 5 mm thick Armstrong single-piece magnetic white board panel, mounted within a durable aluminum frame. The board shall function as a

Marker Board, Magnet Friendly Writing Whiteboard, and Dry Erase Board, suitable for classrooms or office use. It shall be installed on 12 mm thick plywood backing sheets fixed securely to the wall for proper support. Necessary boxing and alignment shall be carried out to conceal columns or beams as per the architectural plan. The installation shall include all required materials, fixtures, tools, and labor for a complete and finished job. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Magnetic White Board -		5mm thick Armstrong or equivalent
2	Aluminum Frame	IS 733	Anodized
3	Plywood Backing	IS 303	12mm thick
4	Hardware	IS 1367	Wall fixings, screws

Labour & Workmanship:

1. White Board Panel:

- Single piece 1800×1200mm
- Magnetic receptive surface
- Marker compatible
- Smooth, scratch-resistant surface

2. Aluminum Frame:

- Anodized aluminum sections
- Frame around board perimeter
- Corners mitred and fixed
- Tray at bottom for markers

3. Plywood Backing:

- 12mm plywood sheets
- Fixed to wall at board location
- Provides solid backing for board mounting
- Level and flush with wall

4. Boxing (if required):

- Around columns or beams
- Plywood or gypsum board
- Creates flush surface for board
- Finished to match wall

5. Board Mounting:

- Board fixed to plywood backing
- Screws or Z-clips used
- Board level in both directions
- Height: Writing surface 900-1000mm from floor

6. Quality:

- Surface uniform, no scratches
- Magnets adhere properly
- Markers erase cleanly
- Frame straight and secure

Dimensions:

180 cm × 120 cm

Mode of Measurement:

Per Number (Each)

ITEM NO. 28

Providing and supplying roller blinds to be installed with precision across all designated window openings. The blinds shall be water-resistant, mounted on durable powder-coated aluminum head rails, and fitted with stainless steel drive rods for smooth manual operation. The complete assembly shall be manually operated and must conform to ISI standards. All fixtures, fittings, and components required for proper installation shall be included. The work shall be executed complete in all respects, or as directed by the Architect and Engineer-in-Charge. It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge. (M34)

Materials:

S.No. Material Description Indian Standard Specification

1	Blind Fabric	-	Water-resistant, ISI marked
2	Aluminum Head Rail	IS 733	Powder coated
3	SS Drive Rods	IS 6603	Stainless steel 304
4	Bottom Rail	-	Weighted, aluminum
5	Side Channels	IS 733	Aluminum (if required)
6	Brackets	IS 1367	For mounting

Labour & Workmanship:**As per IS 4151 (Roller Blinds)****1. Measurement:**

- Accurate measurement of window opening
- Width and height recorded
- Type of fixing: inside recess or outside

2. Blind Fabrication:

- Fabric cut to size with hem allowance
- Bottom rail pocket sewn
- Fabric attached to roller tube
- Side hems finished

3. Head Rail:

- Aluminum section powder coated
- Contains roller tube and mechanism
- Manual operation with chain/cord or SS rod

4. Drive Mechanism:

- SS drive rod for manual operation
- Smooth winding, no binding
- Clutch mechanism for controlled release

5. Installation:

- Brackets fixed to wall/ceiling at window

- Level checked
- Blind installed in brackets
- Operation tested
- Fabric hangs straight, no twisting

6. Quality:

- Fabric water resistant, tested
- Smooth operation, no jerking
- ISI standards complied
- All fittings secure

Mode of Measurement:

Per Square Meter (of blind area)

ITEM NO. 29

Providing and supplying metal rack made with slotted M.S. angle sections, fabricated from high-grade steel conforming to IS 5986 for uprights and IS 5130 for shelves and horizontal supports. All components shall undergo a thorough multi-stage pre-treatment process and be finished with epoxy powder coating of a minimum film thickness of 50 microns for long-lasting durability. The color scheme shall include grey color for beams and base plates, with all remaining components finished in dark grey, as per architectural direction. The rack shall be adjustable and modular in design, allowing shelf height flexibility. Size: 152 cm (L) × 45 cm (D) × 182 cm (H). It shall be confirmed and approved in advance by the Architect, along with a description and image, or as directed by the Engineer-in-Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	MS Angle (Uprights)	IS 5986	Slotted angles
2	MS Sections (Shelves)	IS 5130	For beams and supports
3	Powder Coating	IS 14536	Epoxy, min 50 micron
4	Nuts & Bolts	IS 1367	For assembly

Labour & Workmanship:

As per IS 5986, IS 5130

1. Pre-Treatment:

- Multi-stage process
- Degreasing
- Rust removal
- Phosphating
- Drying

2. Powder Coating:

- Epoxy powder coating
- Minimum 50 micron thickness
- Color: Grey for beams/base plates, dark grey for others
- Electrostatic application
- Curing at specified temperature
- Uniform coverage

3. Assembly:

- Uprights: Slotted angles
- Beams: Horizontal members connecting uprights
- Shelves: Steel decks or plywood on beams
- Bolted assembly, no welding
- Adjustable shelf heights
- Modular design

4. Configuration:

- 5 shelves typically
- Shelf spacing adjustable
- Load capacity: 150-200 kg per shelf

5. Stability:

- Base plates for floor mounting
- Rack plumb and level
- Wall anchoring if required
- No tipping when loaded

Dimensions:

152 cm (L) × 45 cm (D) × 182 cm (H)

Mode of Measurement:

Per Number (Each)

ITEM NO. 30

Providing and supplying green/black board of size 1800x1200mm having aluminium border and hooks to hang on wall and the board as per sample approved of Make: ALKOSINE, ANUPAM OR equivalent brand. as directed by the Architect / Engineer in Charge.

Materials:**S.No. Material Description Indian Standard Specification**

1	Green/Black Board	-	ALKOSINE, ANUPAM or equivalent
2	Aluminum Border	IS 733	Anodized
3	Wall Hooks	IS 1367	For hanging

Labour & Workmanship:**1. Board:**

- Size: 1800×1200mm
- Surface: Smooth, non-reflective
- Chalk compatible
- Easy to erase
- As per approved sample

2. Frame:

- Aluminum border on all sides
- Corners mitred or joined
- Tray at bottom for chalk/duster

3. Wall Hooks:

- D-rings or hooks on back
- For hanging on wall

4. Installation:

- Hooks fixed to wall at appropriate height
- Board hung level
- Height: Writing surface 900mm from floor approx.

Dimensions:

1800mm × 1200mm

Mode of Measurement:

Per Number (Each)

ITEM NO. 31

Providing modular partition full or low with with whole frame structure of Aluminium extruded alloy sections with all sections powder coated (50 micron) having overall partition thickness 80 mm (double skin) flush on both sides using 12mm prelam MDF board with 1 mm Laminate both side and no screwing or gluing etc. visible as specified in specification sheet. etc. complete or as directed by engineer in charge.

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Aluminum Sections	IS 733	Extruded alloy, powder coated 50 micron
2	Pre-lam MDF	IS 12406	12mm thick, 1mm laminate both sides
3	Hardware	-	Concealed fixings

Labour & Workmanship:

As per IS 2202 (Aluminum Work)

1. Aluminum Frame:

- Extruded sections cut to size
- Vertical posts and horizontal rails
- Powder coating 50 micron thickness
- Color as specified

2. MDF Panels:

- 12mm MDF pre-laminated
- 1mm laminate both sides
- Cut to fit frame sections
- Edges sealed

3. Assembly:

- Overall thickness 80mm (double skin)
- Flush finish both sides
- Panels inserted in frame grooves
- No visible screws or glue
- Concealed fixing system

4. Installation:

- Floor and ceiling tracks
- Vertical posts at required spacing
- Panels installed between posts
- Aligned and plumb

5. Quality:

- Surface flush $\pm 1\text{mm}$
- Joints straight and tight
- No rattling or movement
- As per specification sheet

Mode of Measurement:

Per Square Meter (of partition area)

ITEM NO. 32

Providing modular partition full or low height with whole frame structure of powder coated Aluminium extruded alloy sections with Twin layers of Glass glued with Aluminum glass section by 3M taps. Horizontal venetian blinds with swivelling mechanism are provided between two glasses with out side control as specified in specification sheet. etc. complete or as directed by engineer in charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Aluminum Frame	IS 733	Powder coated
2	Glass (Twin Layers)	IS 2553	5mm or 6mm each
3	3M Tape	-	For glass bonding
4	Venetian Blinds	-	Horizontal, between glass
5	Blind Control	-	Outside mechanism

Labour & Workmanship:**As per IS 2202, IS 2553****1. Aluminum Frame:**

- Special sections for glass holding
- Powder coated finish
- Groove for glass insertion

2. Glass Installation:

- Twin layers of glass
- Spacing: 15-20mm between layers
- Glass glued to aluminum sections with 3M tape
- Airtight seal

3. Venetian Blinds:

- Installed between glass layers
- Horizontal slats
- Swiveling mechanism for light control
- Control from outside (cord/wand)
- No access needed between glass

4. Assembly:

- Glass units assembled in factory
- Installed in frame on site
- Sealed properly
- Blind mechanism tested

5. Quality:

- Blinds operate smoothly
- No rattling
- Clean appearance
- As per specification sheet

Mode of Measurement:

Per Square Meter

ITEM NO. 33

Providing Cabin Doors made from 30mm Board with wood filled core and 3 mm MDF sturdy and matching with partitions having overall size as directed by Architect ,view glass and hardware like handles, door closer and dead lock etc as specifed in specification sheet. etc. complete or as directed by engineer in charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Door Core	-	30mm board, wood filled
2	MDF Facing	IS 12406	3mm thick
3	Laminate	IS 2046	Matching partitions
4	View Glass	IS 2553	As per size
5	Handles	IS 3564	Good quality
6	Door Closer	IS 3564	Hydraulic type
7	Dead Lock	IS 4968	Good quality
8	Hinges	IS 3564	Heavy duty

Labour & Workmanship:

As per IS 2202, IS 4021 (Flush Doors)

1. Door Construction:

- 30mm thick core, wood particle filled
- 3mm MDF facing both sides

- Edges lipped with hardwood
- Size as per opening, typically 900×2100mm

2. Laminate Finishing:

- Both sides laminated
- Matching partition finish
- Edges post-formed or separately lipped

3. View Glass:

- Cutout for glass panel
- Size and position as per design
- Glass fixed with beading
- Edges polished

4. Hardware Installation:

- Hinges: 3 nos., heavy duty
- Handle: On both sides
- Dead lock: Mortise type
- Door closer: Hydraulic, overhead or concealed

5. Installation:

- Door frame matched to partition system
- Door hung with uniform gaps
- Closer adjusted for smooth operation
- Lock aligned properly

Dimensions:

As per architect (typically 900×2100mm)

Mode of Measurement:

Per Number (Each door)

ITEM NO. 34

Providing and Supplying wooden Single bed of size 6ftx3ft with using 18mm thick plywood in framing and 12mm thick plywood in top portion with 0.8mm thick laminate in internal and 1.0mm thick laminate in outer portion with teak

wood betton patti with polishing etc. with mattress complete as per Directed By Arcitechand Engineer in Charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Plywood (Frame)	IS 303 / IS 4990	18mm thick
2	Plywood (Top)	IS 303 / IS 4990	12mm thick
3	Laminate (External)	IS 2046	1.0mm thick
4	Laminate (Internal)	IS 2046	0.8mm thick
5	Teak Beading	IS 1708	With polish
6	Mattress	IS 7888	As specified
7	Hardware	IS 1367	Fixings

Labour & Workmanship:

As per IS 729

1. Frame (18mm Ply):

- Box frame construction
- Size: 1830×915mm (6'×3')
- Height: 400-500mm
- Joints dado or screwed with blocks

2. Top (12mm Ply):

- Bed deck from 12mm plywood
- Supported on frame
- May have slats or solid deck

3. Lamination:

- External: 1.0mm decorative laminate
- Internal: 0.8mm liner laminate
- Applied as per standard procedure

4. Edge Treatment:

- Teak beading on exposed edges

- Polished finish

5. Mattress:

- Size matching bed (1830×915mm)
- Foam or spring type as specified
- Thickness: 100-150mm

6. Assembly:

- All joints tight
- Bed stable, no wobble
- Supports adequate for load

Dimensions:

6' × 3' (1830mm × 915mm)

Mode of Measurement:

Per Number (Each)

ITEM NO. 35

Providing and fixing 8 mm thick toughened glass on existing wooden table with all necessary solution and hardware, labour etc. complete or as directed by engineer in charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Toughened Glass	IS 2553 (Part 1)	8mm thick
2	Adhesive/Pads	-	Silicone or rubber pads

Labour & Workmanship:

As per IS 2553

1. Measurement:

- Accurate measurement of existing table
- Glass size: Table dimension -2mm for clearance

2. Glass Cutting:

- 8mm clear glass cut to size

- All edges polished smooth
- Corners rounded 5mm radius

3. Toughening:

- Glass toughened as per IS 2553
- Stamp marked on one corner

4. Installation:

- Table top cleaned
- Rubber or silicone pads placed at intervals
- Glass laid on pads
- Prevents direct contact and sliding

5. Quality:

- Glass free from defects, bubbles, scratches
- Edges smooth, safe
- Properly seated, stable

Mode of Measurement:

Per Square Meter

ITEM NO. 36

Providing and fixing eco-friendly light weight calcium silicate false ceiling tiles having Tegular edge & 15mm Thick Densified edges on the Tile Periphery for Extra Strength The Light weight calcium silicate ceiling tiles shall have , light reflection 85% non combustible as per B.S.476 part IV, 100% humidity resistance and also having thermal conductivity 0.043 w/mKC. for the best thermal Insulation . The Light weight calcium Silicate tile shall be of approved texture Fine fissured/Spintone/Cosmos having NRC value of 0.5 & Globe having NRC value of 0.75 NRC or

equivalent of size 595X595 mm to be laid on true horizontal level suspended inter locking metal grid of hot dipped galvanized steel sections (galvanizing @120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and size of 24X38 mm made from 0.30mm thick (minimum) sheet, 1200mm centre to centre, and cross 'T' of size 24X28mm made out of 0.33mm (Minimum) sheet spaced 1200mm apart long spaced between main 'T' at 600mm centre to centre to form a grid of 1200X600mm and secondary cross 'T' of length 600mm and size 24x28 mm

made of 0.30mm thick (Minimum) sheet to be inter locked at middle of he1200X600mm panel to form grid of size 600X600mm resting on

Materials:

S.No.	Material Description	Indian Standard	Specification
1	Calcium Silicate Tiles -		15mm thick, Tegular edge, 595×595mm
2	Main 'T' Runner	-	24×38mm, 0.30mm thick, GI
3	Cross 'T'	-	24×28mm, 0.33mm thick, GI
4	Secondary Cross 'T'	-	24×28mm, 0.30mm thick, GI
5	Hangers	IS 2062	GI wire/rods
6	Perimeter Angle	-	L-section for edges

Tile Properties:

- Light reflection: 85%
- Non-combustible: BS 476 Part IV
- Humidity resistance: 100%
- Thermal conductivity: 0.043 W/mK
- NRC: 0.5 to 0.75 (depending on texture)
- Textures: Fine fissured/Spintone/Cosmos/Globe

Labour & Workmanship:

1. Grid Installation:

- Perimeter angle fixed to walls at required height
- Level checked with laser/water level
- Hangers suspended from structural ceiling
- Spacing: As per load and span

2. Main 'T' Runners:

- 24×38mm, 0.30mm thick minimum
- Hot-dip galvanized (120 grams/sqm both sides)
- Hung from hangers at 1200mm c/c

- Ends rest on perimeter angle
- Joined for length with connectors

3. Cross 'T' (Primary):

- 24×28mm, 0.33mm thick minimum
- 1200mm long
- Interlocked with main 'T' at 600mm c/c
- Forms 1200×600mm grid

4. Secondary Cross 'T':

- 24×28mm, 0.30mm thick minimum
- 600mm long
- Interlocked at middle of 1200×600mm grid
- Forms final 600×600mm grid pattern

5. Tile Installation:

- Tiles 595×595mm
- Tegular edge (recessed edge design)
- Laid on grid from below
- Tiles rest on flanges of 'T' sections
- Densified edges (15mm thick) for strength

6. Openings:

- Cutouts for light fittings, AC diffusers, etc.
- Cleanly cut, edges supported

7. Quality:

- Ceiling level throughout
- Grid straight and aligned
- Tiles undamaged, clean
- No sag, uniform appearance

Mode of Measurement:

Per Square Meter

ITEM NO. 37

Providing And fixing single layer water proof gypsum board 12.5mm thick sections using water proof board of size 1220mm x 1830 mm x 8.0 mm suspended by GI suspender channel of size 25mm x 3mm within intermediate channel of size 18mm x 40mm x 0.8mm at 1220 mm center to center ceiling section of size 40mm x 35mm x 0.55mm at 457mm c/c and perimeter channel A of size 20mm x 27mm x 30mm x 0.5mm at edges & drops incl. paper tap sand soffit cleat, anchor fastener, scotch bolt connecting cleat, joining compound top coat on ceiling incl. making necessary opening for light fitting, diffuser etc. comp. as per detail drawing as directed

Materials:

S.No.	Material Description	Indian Standard Specification	
1	Waterproof Gypsum Board	IS 2095	12.5mm thick, 1220×1830mm
2	GI Suspender Channel	IS 1852	25mm × 3mm
3	Intermediate Channel	IS 1852	18mm×40mm×0.8mm
4	Ceiling Section (C-channel)	IS 1852	40mm×35mm×0.55mm
5	Perimeter Channel	IS 1852	20mm×27mm×30mm×0.5mm
6	Drywall Screws	IS 14860	Self-tapping
7	Paper Tape	-	For joints
8	Joint Compound	-	For finishing
9	Top Coat	-	For smooth finish
10	Hangers	IS 1387	GI wire/rods

Labour & Workmanship:

As per IS 2095 (Gypsum Boards)

1. Perimeter Channel:

- Fixed to walls at required ceiling height
- Level checked throughout
- Anchored with rawl plugs and screws

2. Hangers:

- Suspended from structural ceiling

- Spacing as per design, typically 1200mm

3. Intermediate Channel:

- Size: 18mm×40mm×0.8mm
- Hung from hangers
- Spacing: 1220mm c/c

4. Ceiling Section (C-channel):

- Size: 40mm×35mm×0.55mm
- Fixed perpendicular to intermediate channel
- Spacing: 457mm c/c
- Ends rest in perimeter channel

5. Gypsum Board Installation:

- Boards 12.5mm thick, 1220×1830mm
- Waterproof grade
- Fixed to C-channels with drywall screws
- Screw spacing: 200mm on edges, 300mm in field
- Screws slightly recessed, not breaking paper

6. Jointing:

- Paper tape applied over joints
- Joint compound applied in 3 coats
- Each coat wider than previous
- Feathered edges
- Sanded smooth between coats

7. Finishing:

- Top coat applied over entire ceiling
- Smooth, uniform finish
- Ready for painting

8. Openings:

- Cutouts for lights, diffusers, etc.
- Cleanly cut

- Edges finished with compound

9. Quality:

- Ceiling level, no sag
- Joints invisible after finishing
- Surface smooth, ready for paint
- No cracks or defects

Mode of Measurement:

Per Square Meter

ITEM NO. 38

Providing and supplying Stainless Steel Open Dustbin 304 steel Perforated Round Dustbin 7 litre Capacity for Dry Waste for office as per instruction of Engineer-in-charge.

Materials:

S.No. Material Description Indian Standard Specification

1	Stainless Steel 304	IS 6603	Perforated sheet
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Labour & Workmanship:

1. Fabrication:

- SS 304 grade
- Perforated design for ventilation
- Round shape, 7 litre capacity
- Diameter approx. 250mm, height 300mm

2. Finishing:

- Edges folded for safety
- No sharp edges
- Smooth finish

3. Quality:

- Corrosion resistant
- Durable construction

- Suitable for dry waste

Mode of Measurement:

Per Number (Each)

ITEM NO. 39

Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surface to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.

Materials:

S.No. Material Description Indian Standard Specification

1	Plastic Emulsion Paint IS 5410	Approved brand
2	Primer (if needed) IS 5410	Water-based primer

Labour & Workmanship:

As per IS 2402 (Code for Interior Decoration)

1. Surface Preparation:

- Brush surface thoroughly
- Remove mortar droppings, dust, loose particles
- Fill cracks and holes with cement putty
- Allow putty to dry completely
- Sand papered smooth with 120 grit sandpaper
- Surface clean and dry

2. Primer Coat (if required):

- Water-based primer on new plaster
- Applied evenly with brush or roller
- Dried 4-6 hours

3. First Coat of Emulsion:

- Paint mixed thoroughly
- Thinned as per manufacturer's recommendation (typically 10-15% water)

- Applied with brush or roller
- Even coverage, no runs or sags
- Dried minimum 4-6 hours

4. Second Coat of Emulsion:

- Applied after first coat fully dry
- May require less thinning
- Applied for uniform coverage and shade
- No brush marks visible
- Dried completely

5. Quality Standards:

- Even shade throughout
- No patches, streaks, or brush marks
- Coverage as per manufacturer's specification (typically 12-14 sqm/litre)
- Finish smooth, washable
- Conforms to IS 5410

Mode of Measurement:

Per Square Meter (of wall area painted)

Electric Work Specifications

For All Item specifications shall be followed as per attached Specifications of Electrical work.

Special Condition :

Refer Section-9 or Furniture Ref. Images as approved by Chief Architect & Town Planner, R&B Office Letter No. 228 Dt.15-02-2025.

**Dated Signature of
The Contractor**

**Executive Engineer
Navrangpura (R&B) Division
Ahmedabad.**