

## **II - TECHNICAL SPECIFICATION FOR INTERIOR WORK**

### **1. General**

These specifications are for work to be done, items to be supplied, materials, to be used in the work shown and defined on the drawing and described herein, to the satisfaction of the Employer / Architect

- 1.1 The workmanship is to be the best possible and of a high standard. The Contractor shall take all steps immediately to make deficiencies if any noticed by the Employer / Architect. Use must be made of special tradesman in all aspects of the work and allowances must be made in the rates for the same.
- 1.2 The materials to be provided by the contractor shall be accordance with the samples already got approved from the Employer / Architect by the contractor and in conformity with specification and approved; list of manufactures and brand The contractor shall produce all invoices, vouchers or receipts for any materials if called upon to do so by The Employer / Architect.
- 1.3 Samples of all materials are to be submitted to the Employer / Architect for the approval before the contractor orders or deliver the materials to the site. Samples together with their packing are to be provided free of charge by. The contractor and should any materials to be rejected, they will be removed from the site at the contractor's expenses. All samples will be retained by the Employer / Architect for comparison with materials which will be delivered at site. Also the contractor will be required to submit the specimen finishes of colours, fabrics etc., for the approval of the Employer / Architect before proceeding with the work.
- 1.4 The contractor shall be responsible for providing and maintaining temporary coverage required for the protection of finished work. He is also to clean out all wood- shaving, cut ends and other waste from all parts of the work before covering or in filling is constructed.
- 1.5 Contractor shall maintain uniform quality and consistency in workmanship throughout the execution of the work.
- 1.6 Site order Books / reports for the purpose of quick communication between the Architect / Architect's representative and the contractor or his agent or representative, site instruction books shall be maintained at site in the manner as described below.
- 1.7 Any communication, relating to the works may be conveyed through records in the site instruction book. Such communication from the Architect / Architect's representative to the contractor shall be deemed to have been adequately served in terms of the contract. Each site instruction book shall have machine number pages in triplicate and shall be carefully maintained and preserved by the contractor at site. Any instruction or others which the Architect / his representative

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may like to issue to the contractor may be recorded by him in the site instruction book and one copy thereof issued to the contractor.

- 1.8 The contractor shall check and verify all site levels and measurements whenever requested by the other specified contractors to enable them to prepare their own shop drawings and pass on the information with sufficient promptness. A copy of all such information passed on shall be given to the consultants.
- 1.9 Templates, boxes and moulds shall be accurately set out rigidly constructed so as to remain accurate during the time they are in use.
- 1.10 All unexposed surface of timber eg: - partition/paneling frames, false ceiling, backing, fillets, backs of door frames, cupboards framing, grounds etc are to be treated with two coats of approved timber preservative and anti termite paints before fixing or converging.

**2. Joinery in woodwork**

- 2.1 The contact surface between internal frame and skinning shall be glued with approved adhesive in addition to fixing with necessary screws etc.
- 2.2 After preparing proper surface of skinning by sand preparing etc., the laminate or veneers shall be fixed on it with the help of approved adhesive.
- 2.3 Frame work for full height partition shall be rigidly fixed to the floor, walls and ceiling soffit. The partition height shall be measured up to bottom of false ceiling and framing members / ply going above will not be measured.
- 2.4 Any portion that are warped or found with other defects are to be replaced. The whole of the work is to be framed and finished in a workman- like manner in accordance with detailed drawings and the direction of Employer / Architect and whenever required, fitted with all necessary metals ties, straps, screws, adhesive etc. Joinery work generally to be finished with fine sand/glass paper.
- 2.5 All joins shall be standard mortise and tenon, dowel, or cross-halved. Screws, nails, etc. will be of standard iron or wire. Tenon should fit the mortises exactly.
- 2.6 Nailed or glued butt joints will not be permitted.
- 2.7 Whenever screw heads are on finished surfaces those will be sunk and the hole plugged with a wood plug of the same wood and grain to match the colour.
- 2.8 The contact surfaces of dowels, tendons, wedges etc., shall be glued with approved adhesives. Were glued, joinery and carpentry works is likely to come into contact with moisture, the glue should be water proof.

**3. Timber**

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- 3.1 All the Sal wood, Steam, Beach wood, CP teak, BTC to be used shall be properly seasoned, of natural growth and shall be free from worm holes, loose or dead knots or other defects, sawn square and shall not suffer from warping, spitting or other defects.
- 3.2 The moisture content shall not exceed 12%
- 3.3 All internal frameworks shall be treated with approved wood preservative, anti termite and with fire retardant treatment/paint.
- 3.4 All wood brought to site to be clean; it shall not have any preservatives or other coating / covering.
- 3.5 All rejected, decayed, bad quality wood shall be immediately removed from site.
- 3.6 All the dimensions mentioned for T.W. members are finished sizes.  
All wood brought to site should be stacked, stored properly as per instructions.

**4. Plywood**

Plywood should be accordant as per the specification stipulated in bills of quantities.

Commercial Ply wood should generally confirm to IS :303, bonded with Phenol formaldehyde, BWR grade treated with wood preservative.

Particle boards should be phenol formaldehyde bonded and generally confirm to 15:3087 - 1965

Only 3mm to 4mm thick straight grain group matching approved veneers should be used.

MDF if used in places as per specification should be confirming to 15:12406 - 1988

**5. Hardware and Metals**

- 5.1 The hardware throughout shall be of approved manufacture or supplier well made and equal to in every respect to the sample to be deposited with architect. The contractor may be required to produce and provide samples from many different sources before the Employer / Architect to take decisions and he should allow his rates for doing so.
- 5.2 All the screw/bolts with nuts to be used shall have oxidized finish (unless required otherwise) of approved shapes, size and quality.
- 5.3 Fittings shall be of brass oxidized heavy duty unless specified otherwise.
- 5.4 Samples of all hardware are required to be got approved in advance from Architects/Bank.
- 5.5 The agency should cover up and protect the brass surface by thick grease or other suitable material veneer as necessary and subsequently clean it away at the same time of handing over.

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- 5.6 All hardware shall be fitted with good workmanship without the surrounding edges being damaged.

Aluminum and stainless steel shall be of approved manufacture and suitable for its particular application. Generally the surface of aluminum shall have an anodized finish and both shall comply with samples approved by Employer / Architects.

**6. Laminate**

- 6.1 All laminate shall be specified in Bill of Quantity and of approved make.
- 6.2 The contractor shall get the sample showing the surface texture, pattern and color approved by Employer / Architect.
- 6.3 All edges, beading, etc shall also be finished in Lipping's

**7. Fabrication in Metal**

- 7.1 All brazing and welds are to be executed in a clean and smooth manner, rubber down and finished in flat and tidiest way, particularly where exposed.

**8. Glass Works**

- 8.1 All glass is to be of approved manufacture, complying with 1.5. 3548-1960, or as per approved quality and sample, to be of the qualities specified and free from bubbles, air holes, waviness and other defects.
- 8.2 In cutting glass, proper allowances shall be made for expansion. Each square or rectangle of glazing to be in one whole sheet.
- 8.3 Glass for mirror shall be silvering quality (5.Q.) conforming to 1.5.3458-1958 or as approved sample and quality.
- 8.4 On completion, all glass surfaces shall be cleaned inside and out. All cracked, scratched glass/ mirror shall be replaced.
- 8.5 Sun control film shall be non-reflective type, of approved make and shade. The fixing shall be without any defects such as air bubbles/ creases / adhesive marks, etc.

**9. Paint and Polishes**

- 9.1 All material required for the work shall be specified and approved manufacture, delivered to the site in the manufacture's containers with the seals, etc. unbroken and after use empty containers shall be stored till finally cleared by the Employer.
- 9.2 All iron or steel/metal surfaces shall be thoroughly scraped and rubbed down with wire brushes and shall be entirely free from rust, mill scale etc. before applying the

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primer coat.

- 9.3 Melamine polish finishes shall be properly finished, without any flow marks, spots, roughness etc.

Painting work shall be of high standard, without any brush marks on the finished surfaces and no spots on adjacent furniture, glass, etc.

Spray painting with approved machines will be permitted only if written approval has been obtained from the Employer / Architect prior to painting. Neither spraying will be permitted in the case of priming coat nor where the soiling of adjacent surfaces is likely to occur. The buzze and pressure to be so operated has to give and even coating throughout to the satisfaction of the Employer / Architect. The paint used for spraying is to comply generally with the specification concerned and is to be specially prepared by the manufacture for spraying. Thinning of paint made for brushing will not be allowed.

All brushes, tools, pots, kettles etc. used in carrying out the painting works shall be clean and free from foreign matter and to be thoroughly cleaned out before use with a different type of class of material.

Prior to painting, the surface preparation should be done as per IS code i 4177 - 1994 para 4.2.1, 5.2.1.1, 5.2.2.1, 5.2.3. In the case of maintenance operation, the surface preparation should be done as per para 7.00 of IS 14177:1994

For primer and finist1ing coat, the painting work should be carried out strictly as per 5.2.1.2, 5.2.1.3, 5.2.2.2 and 5.2.2.3 of IS Code.

Painting should be done invariably using airless spray equipment as per IS : 141771994 wherever recommended.

Proper care should be taken for deciding the compatibility of primer paint with paints used for finishing coats, including thinner on the basis of manufacturer's recommendation.

Enamel paint should confirm to IS 133 - 2004

Wood filler, transparent liquid should confirm to IS: 345 - 1952 (with amendment Nos. 1 and 2 reaffirmed 1986).

French Polish if to be done as per specific requirement should confirm to IS 348 - 1968 (First revision, with amendment No 1, reaffirmed 2001)

Painting on concrete, masonry and plastered surfaces should confirm to IS : 2395

( Pt - I) - 1994 ( Operations workmanship re affirmed 2005)

Plastic emulsion painting for interior use should confirm to IS 5411 (Pt.- I) - 1974 ( with amendment No: 1, reaffirmed 1993)

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**10. Civil Work**

- 10.1 The Contractor shall use cement of approved make only.
- 10.2 Only first quality ceramic tiles / vitrified tiles of approved make shall be used. All tiles joints shall be filled up properly using cement slurry mixed with matching pigments.
- 10.3 Only best quality granite and marbles of the basic rate specified and of approved shade shall be used. (Basic rates wherever mentioned are ex-go down and excluding taxes). The granite/marble shall be from the same lot and without colour / shade variations or any other defects.
- 10.4 All edge chamfers / cutting of granite / marble shall be mirror polished and no extra shall be paid for the same. In the case of Urinal partitions / sink partitions, the granite slab used for partition should be polished on both sides.

**11. Upholstery**

This will be of first call standard workmanship with webbing, no sag spring, coiled springs, padding and filling as specified on drawing. Covering fabrics will be seen tufted and corded as shown on the drawing and as approved by the Employer / Architect.

Cushion Vents- Brass Cushion vents should be installed at the back or under side of seat cushions (especially those covered in leather vinyl plastics or very tightly woven fabrics) to allow air to escape easily and to prevent tearing.

Materials- Finished timber shall be of the type specified. Furnishing fabrics, colour, pattern, substance to be as specified and manufacture, or supplied by the company specified, no variations of this will be permitted unless with prior approval of the consultants. The sample of the upholstery should be got certified from the Bank! Architect, before placing orders.

**12. Polish**

12.1 French Polish

The basic material shall be shellac dissolved non methylated spirit

The timber must be well sanded and clean and the grain filler. Any staining must be done before applying the polish.

By pad of cotton with soft white linen or cotton fabric, apply evenly over the surface with a slow figure of eight motion until the timber is coated with a thin layer of polish. Allow the work to stand for at least 8 hours, and the fresh rubber with double thickness of cover material and charges it with methylated spirit.

12.2 Wax Polish

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Wax polish shall contain silicon's and driers. A good silicon wax is to be used not a creamy or sprays. Timber shall be sealed first with another finish such as Ronseal, before applying wax.

Apply a light coat of the sealer by brush or cloth direct to the unfilled timber, working it well in and finishing evenly with the grain. Allow to dry thoroughly then sand lightly with fine paper. Apply a heavy coat of wax by cloth or on flat surfaces with a stiff brush. Work it well into the timber and finish off by stroking with grain before leaving to harden. Leave for several hours before rubbing up with a soft brush. Finally buff the grain with a soft cloth.

### **12.3 Transparent coloured Polyurethane (Melamine)**

This shall be applied where natural grain of the wood is required to show. Polyurethane gives tough surface which resist chipping, scratching and boiling water . Clean off all grease and wax with an abrasive and white spirit, this should not be applied in humid conditions. Apply the first coat, preferably of clear hard glaze with a cloth pad. Leave this to dry for at least six hours, and then apply further coats with a paintbrush. If you wait for longer than 24 hours between coats, rub down the previous coat with fine glass paper or a medium grade steel wool. Obtain a matt finish, if required, by giving a final coat of clear Ronseal Matt Coat.

## **VIII MODE OF MEASUREMENTS**

The measurements will be made in terms of relevant IS codes and will be made in meters and will be as per I.S code. The method of measurements for each item is as given under:

### **1. DOORS, WINDOWS, ROLLING SHUTTERS AND GRILLS**

Clear area over one face inclusive of frame shall be measured. Hold fasts and portions embedded in masonry or flooring shall not be measured.

### **2 PARTITIONS IN WOODWORK**

The partition height shall be measured up to bottom of false ceiling finished level and framing members / ply going above shall not be measured.

### **3 DECORATIVE PANELING OVER WALL OR OVER PARTITIONS**

The area of cladding shall be measured in square meter, or square feet. The gross area cladded will be measured. No deductions will be made for gaps upto one centimeter between the panels

### **4. CARPETS**

The actual area covered by the carpet shall be measured. No extra shall be allowed for wastage.

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**5. PAVING AND TILE WORK**

The work mentioned in this section ( shall be measured in Sq.ft or Sq.m. and shall be priced per unit of Sq. mt. In all paving work, the slabs shall be touching the walls and go well under the plaster, but the measurements shall be the clear measurements of the rooms or areas when finished. No allowance shall be made for portions going under the plaster. The wall dado will also be measured as per the clear measurements of the visible area only.

**6. ALUMINIUM SLIDING WINDOWS**

The measurement of aluminum sliding windows shall be taken only after the frame along with the shutter is fixed in its final finished position in line level and plumb. Width and height shall be measured net between the out of the aluminum window frames.

**7. SHUTTERS, STORAGE UNITS, BOXING FOR ROLLING SHUTTERS etc.**

The area will be measured in Sq.m on the actual facing size. No allowance shall be made for portions not visible.

**8. UTILITY COUNTER, WALL MOUNTED WRITING LEDGE, PANTRY PLAT FORM, LUNCH PLATFORM SKIRTING etc**

Will be measured in R.m on the actual length through the centre of the item if in curved profile.

**9. FALSE CEILING**

For false ceiling work, the measurement shall be for the actual area covered. The vertical faces will be measured as per the actual visible area. No deduction shall, be made for the cutouts, for light fittings, speakers, column up to 1.5 Sqm.

**2. PAINTING**

The rates include all scaffoldings, ladders, paints, cans, brushes and other appliances required for the efficient execution of the work. The rates also include conveyance, delivery, handling, unloading, storing, wastage, protective cover and cleaning stains from floors and walls, glass panes etc and also preparatory works such as knotting, priming stopping and rubbing down, burning off or stripping etc.

The rates for special conditions of works not mentioned in the tender will be finalized by Employer / Architect considering site conditions and nature of specialty required, which will be final and binding on the contractor.

Measurements

No deduction will be made for openings not exceeding 0.5 Sq.m each and no addition will be made for painting to beadings, moldings, edges, jambs, soffits, sill etc. of such openings.

Corrugated sheet surfaces will be included with plain surfaces after increasing their areas by the following percentages :-

- (i) Corrugated sheets 14%



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- (ii) Asbestos cement sheets corrugated 20%
- (iii) Asbestos cement sheets semi corrugated:- 10%

Areas of uneven surfaces will be converted into equivalent plain areas in accordance with table given below:

**Table of Equivalent Plain Ares of uneven Surfaces**

Sl.No.	Description of work	How measured	Multiplying factor
1	Paneled or framed and brazed or ledged and battened or ledged, battened and brazed joinery	(not 11.30 (for Measured flat (not girthed) including frame. Edges, chocks, cleats etc. should be deemed to be included in this item	1.30 (for each side)
2	Flush joinery	Do	1.20 (for each side)
3	Fully glazed or gauged joinery	Do	0.80 (for each side)
4	Partly paneled and partly glazed or gauged joinery	Do	1.00 (for each side)
5	Fully Venetianed or louvered joinery	Do	1.80 (for each side)
6	Weather boards	Measured flat (Not girthed) supporting frame work shall not be measured separately.	1.20 (for each side)
7	Guard Bars, Balustrade's gales, gratings, grills, expanded metal and railings, gates and open for open palisade fencing including standard braces, rails stays etc .	Measured flat overall. No deduction shall be made for open spaces. Supporting members will not be measured separately.	1.00 ( for painting all over)
8	Carved or enriched work	Measured flat	2.00 ( for each side)
9	Steel rolling shutters	Measured flat ( size of opening) overall, jamb guides, bottom rails and locking arrangement, etc., shall be included in the item (top cover will be measured separately)	1.10 ( for each side)
10	Plain sheet steel doors and windows	Measured flat (not girthed) including frame, edges etc.	1.10 ( for each side)
11	Fully glazed or gauged steel	Do	0.50 ( for each side)

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12	Partly Paneled and partly glazed steel doors.	Do	0.80 ( for each side)
13	Collapsible gate	Measured flat (size of opening)	1.50 ( for each side)