

boards from sagging. All fasteners shall also be brand new and of adequate size to ensure rigidity of connections.

5. Workmanship and finish shall be in accordance with the best general practice. Portions of the work exposed to view shall be finished neatly.
6. The Contractor shall deliver all materials to be used in accordance with the required specifications as follows:
  - a. Use 4.5mm thk. x 1200mm x 2400mm fiber cement board.
  - b. Provide ceiling furring and suspension rod as per plan and specification.
  - c. Use carrying Double Furring Channel 17mm x 49mm x 17mm x 5m, 0.6 mm thk. spaced at 600mm o.c. perpendicular to shorter span and 400mm o.c. perpendicular to longer span.
  - d. Use metal carrying channel joist 11mm x 37mm x 11mm x 5m x 0.8mm thk. Spaced @ 1200mm o.c. perpendicular to longer span.
  - e. Provide 10 mm Ø suspension rod, use bolts w/ nuts and washers and carrying channel clip for metal carrying connection spaced at 1200mm o.c. perpendicular to longer span and 600mm o.c. perpendicular to shorter span. See spacing as specified per plan.
  - f. Provide 6mm thk x 50mm Angle Bar spaced at 1200mm o.c. perpendicular to longer span and 600mm o.c. perpendicular to shorter span where the suspension hanger rod shall be fastened/ connected.
  - g. Use metal furring clip for metal carrying channel and double furring channel connection.
  - h. Provide Wall angle 25mm x 25mm x 2.44m x 0.4mm thk. Attached to wall at perimeter with teks screw spaced at 300mm o.c.
  - i. Use fiber cement board screws to fasten fiber cement ceiling panels to the metal furring ceiling joist.

*Note: Ceiling height shall be verified per actual site condition prior to installation of ceiling system.*

## XX. Tile Works

This Item shall consist of furnishing and installing all ceramic tiles, cementitious materials, wood tiles, tools and equipment including labor required in undertaking the proper installation of walls and floor tiles as shown on the Plans and in accordance with this Specification.

1. Trims are manufactured to match wall tile color, texture and to coordinate with it in dimension.
2. Accessories like some soap holders and shall be made wall mounted type with colors to reconcile with the color of the adjacent wall tiles.
3. Tile work shall not be started until roughing-ins for plumbing, electrical and other trades have been completed and tested. The work of all other trades shall be protected from damage.
4. Surface to receive tile must be level, true to elevation, dry, free from dirt, oil and other ointments. Allow at least seven days curing of scratch coat and setting bed.
5. Installation work shall not be allowed to proceed until unsatisfactory conditions are corrected.
6. Thoroughly dampen surfaces of masonry or concrete walls before scratch coat and/or tile adhesive is applied.
7. On masonry or concrete surface first apply a thin coat with pressure, then bring it out sufficiently to compensate for the major irregularities of the surface to a thickness not less than 10 mm. at any point.
8. Evenly rate scratch coat to provide good mechanical key before the mortar/ tile adhesive mix has fully hardened.
9. Use tile adhesive as prescribed by the tile manufacturer. No voids are allowed between tile adhesive and tiles before installation.
10. The tile setting shall be properly leveled.
11. Tile adhesive shall be applied to the surface with a notched trowel to a thickness of approximately 3-4 mm.
12. Tiles shall be pressed into the adhesive, tapped firmly into position, and cleaned as soon as the bedding is complete.
13. Grouting mortar shall be applied over the tile by float or squeegee stroked diagonally across the joints. Remove excess mortar with a wet squeegee stroked diagonally or in a circular

*smv*



motion after 12-15 minutes. Follow with a barely damp or dry sponge to remove the remaining haze while smoothing all grouted joints.

14. Finish tiled flooring shall be properly graded to drain rainwater. Provide a minimum pitch of 1 on 100 satisfactorily drain rainwater freely into the floor drain, drainage lines, gutters and downspouts.
15. Tile setting finish must be observed in proper setting, fit, and stable. Any improper setting shall be reworked/reinstalled by the Contractor.
16. Clean tile surfaces thoroughly as possible upon completion of grouting. Remove all grout haze, observing tile manufacturers recommendations as to use of acid or chemical cleaners. Rinse tile thoroughly with clean water before and after using chemical cleaners. Polish surface of tile with soft cloth.

**XX.A. 6mm thk. - 600mm x 600mm Ceramic Glazed Wall Tiles**

- a. Determine and mark layout of ceramic tiles, joint location, position of trims and fixtures so as to minimize cut less than one-half tile in size.
- b. Lay the tiles true to profile then exert pressure and tamp tile surface before the bond coat mix has initially set.
- c. Continue with the next full tile to be laid and pressed firmly upon the setting bed tamped until flush and in place of the other tiles.
- d. Intersections and returns shall be formed accurately using the appropriate trims.
- e. All lines shall be kept straight and true to profiles, plumbed and internal corners rounded using the appropriate trims.
- f. Provide tile trims for all exposed edges to match wall tile color, texture and to coordinate with it in dimension.
- g. 6mm thk. - 300mm x 600mm Ceramic Glazed Wall Tiles
  - Comfort Rooms (M/F)

Note: Wall Tiles Height = 1.80m.

**XX.B. 6mm thk. - 600mm x 600mm Ceramic Unglazed Floor Tiles**

- a. Floor surface shall be tested for levelness or uniformity of slope by flooding it with water. Area where water ponds are filled or levelled, shall be retested before the setting bed is applied.
- b. Establish lines of borders and center of the walls at the field work in both directions to permit the pattern to be laid with a minimum of cut tiles.
- c. Apply and spread mortar mix and/ or tile adhesive for setting bed and tamp to assure good bond over the entire area to be laid with tile.
- d. Provide 2" anti-slip aluminum stair nosing at door openings.
- e. 6mm thk. - 600mm x 600mm Ceramic Unglazed Floor Tiles
  - Comfort Rooms (M/F)

**XXI. Carpentry and Joinery Works**

The work under this Item shall consist of furnishing all required materials, fabricated woodwork, tools, equipment and labor and performing all operations necessary for the satisfactory completion of all carpentry and joinery works in strict accord with applicable drawings, details and these Specifications.

1. All materials to be incorporated in the carpentry and joinery works shall be of good quality. Before incorporation in work, all materials shall have been inspected/accepted by the Project Monitoring Committee.
2. Materials shall be protected from dampness during and after delivery at the site. Materials shall be delivered well in advance of actual need and in adequate quantity to preclude delay in the work.
3. Fabricated woodwork shall be done preferably on site. It shall be done true to details and profiles indicated on the Plans.
4. In case of variations or changes in the design per actual site condition, shop drawings complete with essential dimensions and details of construction, as may be required by the Engineer in connection with carpentry and joinery work, shall be submitted for approval before proceeding with the work.

*mm*



5. Where set against concrete or masonry, woodwork shall be installed when curing is completed.
6. Exposed wood surfaces shall be free from disfiguring defects such as raised grains, stains, uneven planing, sanding, tool marks and scratches.
7. Exposed surfaces shall be machine or hand sanded to an even smooth surface, ready for finish.
8. Exposed edges of plywood or plywood for cabinets shall be provided with select grade hardwood strips and/or wood trims, rabbeted as necessary, glued in place and secured with finishing nails. To prevent splitting, hardwood for trims shall be drilled before fastening with nails or screws.
9. Nails, screw, belts and straps shall be provided and used where suitable for fixing carpentry and joinery works. All fasteners shall be brand new and of adequate size to ensure rigidity of connections.
10. Plywood shall be good grade and made of laminated wood strips of uniform width and thickness bounded together with water resistant resin glue. It shall be free from defects such as split in veneer, buckling or warping.
11. Shop drawings complete with essential dimensions and details of construction, as may be required by the Engineer in connection with carpentry and joinery work, shall be submitted for approval before proceeding with the work.

**XXI.A. Carpentry and Joinery Works (Typhoon Guards)**

- a. Use ¾" thk. Marine Plywood, Class A with ½" thk. hardwood strips and/or wood trims.
- b. No cut shall be made per panel of typhoon guard, unless other proper wood splicing is observed as approved by the Project Monitoring Committee.
- c. Exterior/ exposed windows shall be provided with corresponding Typhoon Guards per schedule as summarized below:

WINDOW TYPE	TYPHOON GUARD DIMENSIONS		TOTAL NO OF TYPHOON GUARDS
	Width (mm)	Height (mm)	
W/1, W/5, W/9, W/10	595	1870	16
W/3, W/4, W/6, W/13	445	1870	16
W/7, W/8	695	1870	8
W/2	595	1870	2

**XXI.B. Carpentry and Joinery Works (Cabinets)**

- a. Cabinetry works includes provision, fabrication, and installation of the following wall hang cabinets as per plan.
- b. Use ¾" thk. Marine Plywood, Class A with ½" thk. hardwood strips and/or wood trims.
- c. The Contractor shall first fabricate a finished model unit for approval of the Project Monitoring Committee prior to mass fabrication of cabinets to avoid rework.

Location	Description	Unit	Quantity Required
<b>Hanging Cabinets</b>			
Finished Product Storage	Dimension: 1.50mL x 0.35mW x 0.90mH Material: 3/4" thk. Marine Plywood + 1/2" S4S kiln Dried Wood Edging Finish: Semi-Gloss Paint Finish, White	set	3

**XXII. Painting Works**

This Item shall consist of furnishing all paint materials, and other related products, labor, tools, equipment and plant required in undertaking the proper application of



painting and related works indicated on the Plans and in accordance with this Specification.

- a. The Contractor prior to commencement of the painting, and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.
- b. Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.
- c. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- d. Painting and varnishing works shall not be commenced when it is too hot or cold.
- e. Allow appropriate ventilation during application and drying period.
- f. All hardware will be fitted and removed or protected prior to painting and varnishing works.
- g. At the time of application paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions
- h. All material to be used under this Item shall be stored in a single place to be designated by the Engineer and such place shall be kept neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.
- i. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the implementing agency.
- j. All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- k. The paint when applied shall be so manipulated as to produce a uniform even coating in close contact with the surface being painted, and shall be worked into all corners and crevices.
- l. All coats shall be thoroughly dry before the succeeding coat is applied.
- m. Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coats as may be required shall be applied to attain the desired evenness of surface without extra cost to the agency.
- n. Where surface is not in proper condition to receive the coat the monitoring committee shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed is ordered by the PMC.
- o. Hardware, lighting fixture and other similar items shall be removed or 'protected during the painting varnishing and related work operations and re-installed after completion of the work.
- p. If repainting, remove all loose, scaling, flaking and peeling off paint using wire brushing, scraping or water blasting.
- q. For chalking old paint, apply a water-based, low VOC paint for priming.
- r. In case of mildew infestation, treat with fungicidal wash solution or bleach solution (1:3, laundry bleach to water, respectively) by swabbing or brushing. To ensure proper treatment, allow to stand on surface for overnight before washing off residue.
- s. Paint colors shall be as follows:
  1. Typhoon Guards: Medium Gray
  2. Window Grills: Medium Gray
  3. Doors: Medium Gray
  4. Hanging Cabinets: White
  5. Interior Walls and Ceiling: Morning Sunshine