

3. Installation work shall not be allowed to proceed until unsatisfactory conditions are corrected.
4. Thoroughly dampen surfaces of masonry or concrete walls before scratch tile adhesive is applied.
5. 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.
6. Evenly rate scratch coat to provide good mechanical key before the mortar/ tile adhesive mix has fully hardened.
7. The Contractor shall verify with the Technical Planning Committee the exact tile specification before installation.
8. Use tile adhesive as prescribed by the tile manufacturer. No voids are allowed between tile adhesive and tiles before installation.
9. The tile setting shall be properly leveled.
10. Tile adhesive shall be applied to the surface with a notched trowel to a thickness of approximately 3-4 mm.
11. Use a tile spacer of 3 mm before installation to observe proper laying pattern and spacing.
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 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.
17. In addition, cover tile flooring with heavy-duty no staining construction paper, taped in place. Just before final acceptance of the work removes paper and rinse protective coat of neutral cleaner from tile surface. Do not let protective paper get torn 'or removed.
18. Prior to procurement, Contractor shall submit the specification of materials to be purchased in reference to Annex "A" – Floor Finish Schedule for review and approval by TPC/PMC.
19. Use reference texture of the tiles provided:

XXIII. Painting Works

This Item shall consist of furnishing all paint materials, and other related products, labor, tools, equipment etc. In undertaking the proper application of painting and related works indicated on the Plans and in accordance with this Specification.

1. 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.
2. **Marred** or damaged shop coats on metal shall be spot primed with appropriate metal **primer**.
3. **Painting** works shall not be commenced when it is too hot or cold.
4. Allow appropriate ventilation during application and drying period.
5. All hardware will be fitted and removed or protected prior to painting works.
6. 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
7. 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.
 8. 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.
 9. 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.
 10. 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.
 11. All coats shall be thoroughly dry before the succeeding coat is applied.
 12. 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.
 13. 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.
 14. Hardware, lighting fixture and other similar items shall be removed or 'protected during the painting and related work operations and re-installed after completion of the work.
 15. Paint colors shall be as follows:
 - Typhoon Guards: Medium Gray
 - Window Grills: Black
 - Doors: Medium Gray
 - Interior Walls: Winter Morning
 - Ceiling: Winter Morning
 - Exterior Walls, parapet, ledges, and other exposed surfaces: Morning Sunshine & Fantastic Blue

Note: See perspective plan for color reference

XXIII.A. Painting Works (Painting of Concrete Surfaces)

- a. This scope includes painting works on all exposed concrete surfaces (interior and exterior). This item shall accomplished with good workmanship.
- b. Allow new masonry to dry for 14 days (for exterior surfaces) to 28 days (for interior surfaces) under normal weather conditions before painting.
- c. Conduct proper surface preparation before applying any paint or skimcoat. Use Sanding Paper #80 to remove cement splash marks/ small debris etc.
- d. Use Konstrukt K201 High Performance Acrylic Skimcoat to even all surfaces and for proper smoothing of the all concrete surfaces – 2 coatings.
- e. Put Skimcoat on a suitable container and mix it with white cement (to produce white finish). Ratio shall be 1:1 by weight. Pot-life is thirty (30) minutes per mixture. Do not add water.
- f. Let skimcoat dry for at least thirty (30) minutes before applying 2nd coating then allow it to dry overnight before sanding.
- g. Use Sanding paper #100 to even putty/ trowel marks and sanding paper #600 to prepare the surface before applying the primer.
- h. Surface shall be dust free before applying any paint.
- i. Use premium paint only for all interior and exterior concrete surfaces. The contractor shall also follow the painting schedule and paint finishes as specified below:

- For Drywall Partition and Ceiling Surfaces:
 - Primer (1st Coat) : Boysen Flatwall Permacoat latex - one (1) coat
 - Top Coat (2nd & 3rd) : Boysen Semi-gloss Permacoat latex - two (2) coats
- For exterior concrete surfaces:
 - Primer (1st Coat) : Flat latex - one (1) coat
 - Top Coat (2nd & 3rd) : Semi-gloss latex - two (2) coats

XXIII.B. Painting Works (Painting of Steel Surfaces)

- a. This scope includes painting works on all steel surfaces including window grills, barrel lock, stair handrails etc.
- b. Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Use steel brush to clean welding connections.
- c. Apply Polytuff Body Filler on all uneven surfaces, allow it to dry naturally for 12 hours before applying the metal primer. Provide enough amount of definite Polytuff hardener for easy application. After drying, smoothen the surface using sanding paper #80 to even the surface.
- d. Remove all welding stains, welding splashes etc. with steel brush and sanding paper # 80 and sanding paper #100 before application of first coat of metal primer.
- e. Use premium paint only for all painting works. The contractor shall also follow the painting schedule and paint finishes as specified below:
 - For all metal surfaces:
 - Primer (1st & 2nd Coat) : Red Oxide Primer - two (2) coats
 - Top Coat : Quick Drying Enamel - two (2) coats

XXIV. PLUMBING/SANITARY WORKS

All works shall be done under the direct supervision of a licensed Master Plumber and in strict accordance with these specifications and of the methods as prescribed by the national Plumbing Code of the Philippines.

GENERAL REQUIREMENTS

1. All Materials delivered on site shall have an Approved Material Inspection Report from the Project Monitoring Committee.
2. Provide proper support and hangers for all pipes (see details on plan).
3. Complete water leak testing of plumbing works shall be done before closing or installation of pipes.
4. Pipe sleeve shall not be located within the distance 2 times depth of beam from face of support.
5. Pipe fitters and Installers Shall have competency Certificate (NCII).
6. Provide proper pipe sleeves on all pipes crossing along Structural and Architectural members (see structural details and pipe sleeves details on plan).
7. Care shall be taken as not to weaken the structural integrity of the building.
8. Relocation or modification of pipes required proper execution and provide shop drawings approved by Monitoring/Planning Engineer.
9. All plumbing works shall be done by experienced plumber/pipe fitters/installers and shall be supervised by a duly Registered Master Plumber.
10. No structural member shall be seriously weakened or impaired by cutting, notching or otherwise.

XXIV.A. Water Line Piping

- a. All pipes and fittings shall be clean before joining.
- b. All cold waterline pipes and fittings shall be PPR-PN10 (Neltex).
- c. Use PPR fusing machine in joining pipes and fittings.
- d. Provide air chamber for each fixture.

- e. Provide heavy duty type PPR Gate Valves, and Stainless-Steel angle valves for sinks located as per plan. All valves, pipes and fittings shall be installed in correct relationship to the direction of flow.

XXIV.B. Plumbing & Sanitary Piping

- a. All pipes and fittings shall be clean before joining.
- b. All PVC pipes and fittings shall be series 1000 (Emerald) it includes Waste Pipe, Soil Pipe, Vent Pipe and storm drains.
- c. Provide P-traps on sinks located as per plan.
- d. All cleanouts shall be accessible for maintenance purposes.
- e. Use 100mmØ PVC pipe series 1000 for perforated pipes. Perforated pipe outlet shall be connected to line canal.
- f. Waste pipe from sinks shall be connected to existing waste pipe line / waste tank located on round floor.
- g. Exposed pipes shall be painted with two coatings of quick drying enamel with same color of its background.

XXIV.C. Plumbing Fixtures

- a. 1 set water closet (HCG-C3343R Brizo Model)
- b. 1 set Pozzi/Urinal PSK – 5090 (d2006) Antiva White
- c. 1 set Wall Hung Lavatory (HCG-LF80S Short Pedestal)
- d. 2 sets stainless steel faucet

XXIV.D. Septic Tank

- a. Construction of two (2) sets of septic tanks (1.5x1.2m) is included in scope of work (see detail).
- b. Use 4" Thick for septic tank walls and apply 20mm thick plastering for all internal surfaces.
- c. Septic tank outlet shall be connected to the nearest campus drainage.
- d. Provide solid vent pipe with vent cap extending 300 mm above top of mounds.
- e. Install cleanouts and extension from piping to cleanout at grade as indicated. Use 4-inch- (100-mm-) PVC pipe with threaded PVC cap.
- f. Apply cementitious waterproofing and 20mm plastering on inner faces and bottom floor of septic tanks.
- g. Perform testing of completed septic tank system piping and structures according to authorities having jurisdiction. Fill underground structures with water and let stand overnight. If water level recedes, locate and repair leaks and retest. Repeat tests and repairs until there is no leakage.

XXIV.E. Catch Basin

- a. Provide Thirty-one (6) sets of 0.60x0.60x0.695m catch basin with movable cover located as per plan (see detail).
- b. Use 4" thick Apply 12mm thick plastering on inner faces and exposed surfaces of catch basin.
- c. Storm drains shall be connected to nearest drainage with 1% slope.

XXV. Electrical Works

All electrical works shall comply with the provisions of the Philippine Electrical Code (PEC) 2017 Edition with rules and regulations of the national and local authorities concerned in the enforcement of electrical laws and regulations of the utility companies concerned.

All electrical works shall be performed by a Registered Master Electrician (RME) or a non-licensed electrical practitioner under the immediate supervision of a Registered Electrical Engineer (REE).

1. The scope of work covers supply and installation of conduits, raceways, boxes, fittings & accessories, wires & wiring devices, panelboard & circuit breakers, distribution boards, metering, lighting fixtures, grounding system and accessories not specifically mention in this scope.
2. All materials & equipment shall be brand new and approved type for the purpose and location.