

6. Exterior Walls, parapet, ledges, and other exposed surfaces: Morning Sunshine & Fantastic Blue

XXII.A. *Painting Works (Concrete)*

- a. Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating.
- b. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound.
- c. After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).
- d. Allow new masonry to dry for 14 days (for exterior surfaces) to 28 days (for interior surfaces) under normal weather conditions before painting.
- e. 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:
 - o For interior concrete surfaces including Ceiling Surfaces:
 - Primer (1st Coat) : Flat latex - one (1) coat
 - Putty : Masonry putty - two (2) coats, full putty
 - Top Coat (2nd & 3rd) : Semi-gloss flat latex - two (2) coats
 - o For exterior concrete surfaces:
 - Primer (1st Coat) : Elastomeric sealer/ primer - one (1) coat
 - Putty : Spot Putty - two (2) coats
 - Base Coat (2nd & 3rd Coat) : Elastomeric base - two (2) coats
 - Top Coat (4th Coat) : Semi-gloss Elastomeric topcoat - one (1) coat

XXII.B. *Painting Works (Wooden)*

- a. Woodworks shall be hand-sanded smooth and dusted clean.
- b. All knotholes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint.
- c. Interior woodworks shall be sandpapered between coats.
- d. Cracks, holes of imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces.
- e. Use premium paint only for all woodworks. The contractor shall also follow the painting schedule and paint finishes as specified below:
 - o For all wooden surfaces:
 - Primer (1st Coat) : Flat wall enamel - one (1) coat
 - Putty : Glazing putty - two (2) coats
 - Top Coat (2nd & 3rd) : Semi-gloss/ gloss enamel - two (2) coats

XXII.C. *Painting Works (Metal)*

- a. Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces.
- b. Wash unprimed galvanized metal with etching solution and allow it to dry.
- c. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer.
- d. Use premium paint only for all painting works. The contractor shall also follow the painting schedule and paint finishes as specified below:
 - o For all metal surfaces:
 - Primer (1st & 2nd Coat): Red Oxide Primer - two (2) coats
 - Top Coat : Quick Drying Enamel - two (2) coats

XXII.D. *Painting Works (Rubberized Floor)*

- a. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound.
- b. After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).
- c. Use premium chlorinated rubber-based floor coating only. The contractor shall also follow the painting schedule and paint finishes as specified below:
 - o For interior concrete surfaces including Ceiling Surfaces:
 - Primer (1st Coat) : Chlorinated Rubber Based Paint Primer - one (1) coat
 - Putty : Patch Putty - two (2) coats, full putty
 - Base Coat (2nd) : Chlorinated Rubber Based Paint, Flat - one (1) coat
 - Top Coat (3rd & 4th) : Chlorinated Rubber Based Paint, Semi-Gloss - two (2) coats

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XXIII. Cement Plaster Finish

This Item shall consist of furnishing all cement plaster materials, labor, tools and equipment required in undertaking cement plaster finish as shown on the Plans and in accordance with this Specification.

1. Use Portland cement that conform to the requirements as defined in Item 700, Hydraulic Cement.
2. Fine aggregates shall be clean, washed, and free from dirt, clay, organic matter or other deleterious substances.
3. Mortar mixture for brown coat shall be freshly prepared and uniformly mixed in the proportion by volume of one-part Portland Cement, three (3) parts sand and one fourth (1/4) part hydrated lime.
4. Finish coat shall be pure Portland Cement properly graded conforming to the requirements of Item 700, Hydraulic Cement and mixed with water to approved consistency and plasticity.
5. Surfaces to receive cement plaster shall be cleaned of all projections, dust, loose particles, grease and bond breakers. Before any application is commenced all surfaces that are to be plastered shall be wetted thoroughly with clean water to produce a uniformly moist condition.
6. Brown Coat mortar mix shall be applied with sufficient pressure starting from the lower portion of the surface to fill the grooved and to prevent air pockets in the reinforced concrete/masonry work and avoid mortar mix drooping. It shall be lightly broomed/ or scratch before surface had properly set and allowed to cure.
7. Finish coat shall not be applied until after the brown coat has seasoned for seven days and corrective measures had been done by the Contractor on surfaces that are defective. Just before the application of the finish coat, the brown coat surface shall be evenly moistened with potable water. Finish coat shall be floated first to a true and even surface, then troweled in a manner that will force the mixture to penetrate into the brown coat. Surfaces applied with finish coat shall then be smooth with paper in a circular motion to remove trowel marks, checks and blemishes. All cement plaster finish shall be 20 mm thick minimum on vertical concrete and/or masonry walls.
8. Cement plaster shall not be applied directly to concrete or masonry surface that had been coated with bituminous compound and surfaces that had been painted and previously plastered.
9. Cement plaster finish shall be true to details and plumbed. Finish surface shall have no visible junction marks where one (1) day's work adjoins the other.
10. All cement plaster finish shall be measured in square meters or part thereof for work actually completed in the building.

XXIV. Cement Floor Topping Finish

This Item shall consist of furnishing all materials, labor, tools and equipment in undertaking cement floor finishing where shown on the Plans and in accordance with this Specification.

1. Use Portland cement conforming to the DPWH requirement for Item 700, Hydraulic Cement.
2. Fine aggregates shall be clean, washed, and free from dirt, clay, organic matter or other deleterious substances.
3. Concrete topping materials shall be measured accurately. Mortar topping shall be Class A, one (1) part Portland cement and two (2) parts fine aggregate by loose volume.
4. Surface to receive mortar concrete topping shall be cleaned of all projections, dust, loose particles and other foreign matters. Finish elevation shall be established over the areas indicated on the Plans.
5. Before any mortar concrete topping is applied, the prepared concrete base surface shall first be wetted and grouted with Portland cement.

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- a. Mortar topping shall have a minimum thickness of 50mm to be spread over the prepared concrete base and shall be float finished using wood hand trowel. Batches of mortar topping shall be emplaced within one hour of mixing thereof.
 - b. As soon as the water sheen has disappeared the surface shall be lightly scratched with a stiff bristle broom
 - c. The finish topping mixture shall be spread over the lightly scratched surface before final set taken place and hand troweled to produce a smooth surface.
 - d. The finished surface shall be free of trowel marks, have uniform texture and true to a plane within an allowable tolerance of 3 mm in 3.0 meters.
6. Cement floor finished surface shall be covered with appropriate covering to avoid injurious action by sun, rain, flowing water and mechanical injury.
 7. Cement floor shall be finished level and true to finish elevation as shown on the Plans.
 8. Finish topping shall have no visible junction marks where one (1) day's work adjoins the other.
 9. Finish topping shall be properly graded to drain rainwater. Provide a minimum pitch of 1 on 100 satisfactorily drain rainwater freely into the drainage lines, gutters and downspouts.
 10. All cement floor finish shall be measured in square meters or part thereof for work actually completed and accepted.

XXV. Cementitious Waterproofing

This Item shall consist of furnishing all waterproofing materials, labor, tools, equipment and other facilities and undertaking the proper installation works required as shown on the Plans and in accordance with this Specification.

1. Cement-base waterproofing powder mix shall be cement-base, aggregate type, heavy duty, water-proof coating for reinforced concrete surface and masonry exposed to water. When mixed with other ingredients are free flowing, water-proof coatings that possesses strength durability and density.
2. Water shall be clean, clear and potable.
3. Roof decks, stair and ramp covers, parapet walls and other area indicated on the plans to be waterproof shall first be rendered with cement-based waterproofing before any type of waterproofing is applied.
4. Concrete surface to be applied with waterproofing shall be structurally sound, clean and free of dirt, loose mortar particles, paints films oil, protective coats, efflorescence laitance, etc.
5. All defects shall be properly corrected and carefully formed to provide a smooth surface that is free of marks and properly cured prior to application works.
6. Drainage connections and weep holes shall be set to permit the free flow of water.
7. Any expansion and contraction joints shall be cleaned, primed, fitted with a backing rod and caulked with sealant.
8. Prepared surfaces shall be cured and kept wet by sprinkling with water at regular intervals for a period of at least three days and allow surface to actually set within seven days.
9. Ensure that the prepared surface has completely set and all defects repaired.
10. Prior to application of membrane concrete surfaces should be sound and cured without the use of curing compound.
11. Application shall be done one direction strip to assure uniform thickness. Apply waterproofing membrane at concrete gutters and entrance roof cover (GL C-E/ 1-2).
12. Allow primer to dry until it is ready to receive next coat or layer as specified in the manufacturing instructional manual.
13. After application, surface shall be uniformly smooth, free from irregularities folds and knots.
14. Where weather disturbance interrupts the work and exposing the membrane to moisture remove the layer exposed to moisture and repeat procedure until completion of the process.
15. Provide concrete cement topping of at least 50mm thick on the membrane after five days where protective coatings have been applied in accordance with Item XX.

PART E. PLUMBING/ SANITARY WORKS

XXVI. 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.

1. All Materials delivered on site shall be brand new and 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 ceiling panels.
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.

XXVI.A. Water Line Piping

- a. All pipes and fittings shall be clean before joining.
- a. All cold waterline pipes and fittings shall be PPR-PN10 (Neltex).
- b. Use PPR fusing machine in joining pipes and fittings.
- c. Use Polyethylene pipe for service entrance pipe.
- d. Provide air chamber for each fixture.
- e. Provide and install One (1) Set of Water meter located as per plan.
- f. Provide heavy duty type brass Gate Valves, Stainless Steel flush valves for urinals, and Stainless-Steel angle valves for sanitary fixtures located as per plan.
- g. Connection of water Supply from the main water line and processing of necessary documents is included in scope of work.

XXVI.B. Plumbing & Sanitary Piping

- a. All pipes and fittings shall be clean before joining.
- a. All PVC pipes and fittings shall be series 1000 (Moldex) it includes Waste Pipe, Soil Pipe, Vent Pipe and storm drains.
- b. Provide P-traps on lavatory and floor drains located as per plan.
- c. Provide cast iron cover for all floor cleanouts.
- d. All cleanouts shall be accessible for maintenance purposes.
- e. Use 125mmØ PVC pipe series 1000 for storm drains. Storm drain outlets shall be connected to nearest campus drainage.
- f. Vent pipe Shall Be extended 300mm to above roof level.
- g. All exposed downspouts shall be painted with two coatings of quick drying enamel (color is similar to its background).

XXVI.C. Plumbing Fixtures

The Contractor shall provide and install the following plumbing fixtures as summarized below:

- a. Three (3) sets of stainless-steel 50mmØ floor drains with P-trap located as per plan.
- b. Thirteen (13) set of stainless-steel 75mmØ Roof Strainer located as per plan.
- c. Six (3) Sets of Heavy-duty brass faucets for hose Bibb located as per plan.
- d. Three (3) sets of One-way Angle Valve Stainless (1/2"x1/2") for lavatory, and kitchen sink.
- e. Two (2) sets of Two-way Angle Valve Stainless (1/2"x1/2") for water closet, and handheld bidet.
- f. Provide Air Chamber for all plumbing fixtures.
- g. Provide proper ventilation on all fixtures (see plan). Vent Stack shall be extended 300mm at roof deck (See Detail).
- h. Provide and install the following as specified (see details):