PART 3: EXECUTION

3.01 Workmanship

a. Follow design and details shown on the drawings. Where practicable, work shall be finished and assembled at mill.

b. All joints shall be tight and formed to conceal shrinkage. Shop miters 10 centimeters (4 inches) or more from heel to point shall be glued or locked. Make dowels and tenons to a driving fit. Make shop joints with waterproof glue.

c. Assemble panel work in such a manner as to allow free movement of panels.

d. Prime or stain panels before framing into place. Applied mouldings shall be secured to stiles and rails and not to panels.

3.02 Schedules

a. Use kiln dried narra lumber for all solid wood cabinetry and panelwork.

b. Use first quality plywood veneer for all veneer work. Grain and color of plywood veneer shall match the grain and color of solid wood.

DIVISION 07 000 THERMAL AND MOISTURE PROTECTION

PART 1: GENERAL

1.01 Division 01 applies to this Section.

1.02 Scope

a. Includes:

1. Furnish labor, materials, and equipment necessary for completion of work unless indicated or noted otherwise.

SECTION 07 100 WATERPROOFING

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete:

membrane waterproofing; hydrolithic waterproofing; liquid waterproofing; metallic oxide waterproofing and cementitious waterproofing

b. See drawings and details for location of work required.

1.02 Submittals

a. Manufacturer's Literature: submit two copies

1.03 Guarantee

a. Materials and workmanship shall be guaranteed for at least five (5) years.

PART 2: PRODUCTS

2.01 Membrane Waterproofing

a. Primer: Asphalt free from water and other foreign materials Conform to ASTM D41.

b. Membrane: Smooth, evenly woven, open mesh glass fibers impervious to acid, heat, dampness and rot.

It must permit complete penetration of asphaltic compound or bituminous coating.

c. Mopping-Material

1. Below ground level - Type A. A soft, adhesive "Self-Healing" asphalt.
2. Above ground level - Type B. Where asphalt is not exposed to temperatures exceeding 51.7 degrees Celsius (125 degrees Fahrenheit).
3. Above ground level - Type C, where asphalt is exposed on vertical surfaces in direct sunlight or above temperatures of 51.7 degrees Celsius (125 degrees Fahrenheit).

2.02 Hydrolithic Waterproofing

a. Heavy cement-based coating compatible to reinforced concrete wall. It must prevent build-up of water vapor which causes blistering, flaking and peeling of paint films.

b. Material must thoroughly fill and seal pores and voids such that it can be used against water pressure on the interior surface of walls below grade.

2.03 Liquid Waterproofing

a. Waterproofing compound of elastomeric or other substances applied in liquid form and cured to an impervious membrane.

2.04 Metallic Oxide

a. Finely pulverized powder made from gray cast iron that has been treated chemically and physically to produce waterproofing qualities through oxidation of iron particles.

2.05 Cementitious Waterproofing

a. Crystalline waterproofing materials packaged in powder form and mixed with water for application as a cementitious slurry coating on concrete surfaces, or as a Dry-Pac for sealing of construction joints and repair of cracks..

PART 3: EXECUTION

3.01 Membrane Waterproofing

a. Preparation of Surface

1. Thoroughly clean concrete surfaces of all dirt dust, oil patches and other foreign matters.
2. Check slope of concrete decks and gutter and correct slope when necessary.
3. Insure that area to be waterproofed is completely dry, and holes, cracks and crevices repaired.
4. When there is reasonable doubt as to the presence of moisture in the area to be waterproofed, expose same to direct sunlight for another 24 hours or heat all suspected spots with use of blowtorch.

b. Application

1. Apply asphalt primer at the rate of 4 liters (1 gallon) per 10 square meters (100 square feet) evenly by brushing or spraying.
2. Application shall be done in one direction strip by strip and overlapping each other to assure uniform thickness.
3. Let dry prime coat until it is ready to receive next coat or layer as specified.
4. As soon as prime coat is workable, lay a single layer of fiberglass cloth smoothly and free from irregularities and folds.
5. Lay cloth without disturbing the fabric and conforming to the size and shape of the area to be covered.
6. Lay carefully and or side laps in order to assure an even thickness throughout the whole area to be covered.
7. Apply a single coat of asphalt materials (mastic black) at the rate of 12 to 16 liters per 10 square meters (3 to 4 gallons per 100 square feet).
8. Meshes of treated fabric shall not be completely closed or sealed by the bituminous material, but shall sufficiently open to allow successive moppings of the plying material to seep through.
9. Cover ply more than the minimum amount of surfacing necessary to prevent sticking in plys.
10. After application, surfaces shall be uniformly smooth, free from irregularities, folds, or knots.

11. Repeat the procedure in as many layers required or as specified in the schedule or drawings.
12. In case of interruption of work or sudden exposure to moisture, remove layer exposed to moisture, and repeat procedure unitl completion of the process.

c. Protective Coatings

1. Sand mastic - one part "Weatherkote" and 4 parts washed and screened sand by volume. Lay mixture by trowel at an average of 3 millimeters (1/8 inch) thick over surface.
2. Aluminum heat reflecting finish - apply at the rate of 4 liters per 10 square meter (1 gallon per 100 square feet) over thoroughly dried "sand mastic" coating.

d. Metal Cap Flashing

1. Provide cap flashing of 24 gauge G.I. sheet in 2.40-meter (8-foot) lengths except where shorter pieces are required. Lap end joints 30 centimeters (12 inches) and solder. Fold exposed bottom edge of flashing 6 millimeters (1/4 inch) or underside for stiffeners.
2. Where cap flashing is terminated in raked joints or in prepared masonry or stone reglets; fasten flashing with wedges every 30 centimeter (12 inches) and fill reglet on vertical surfaces continuous with plastic cement and on horizontal surfaces, continuous with molten lead.
3. Where cap flashing is connected to preformed lock in through-wall flashing, form upper edge of cap flashing to engage in preformed lock. Mallet lock down tight to provide a spring action against base flashing.

3.02 Hydrolithic Waterproofing

a. For Walls Above Grade

1. Coatings shall adequately cover holes, voids, pitmarks, honey comb and form marks, while maintaining architectural details of flutings, vertical lines, groovings, special shapes and decorative moldings.

b. For Walls Below Grade

1. Clean concrete surface free of all laitance, dirt, grease, form oil, efflorescence, paint and other foreign materials.
2. Apply a trowel coat as per manufacturer's specifications.

3.03 Liquid Waterproofing

a. Surface Preparation

1. All floor surfaces to which liquid waterproofing is to be applied shall be dry, clean, smooth and free from oil or grease and from projections that might puncture the coatings.
2. Floor decks shall be kept dry prior to and during installation.
3. Final cleaning method shall be treating the concrete surfaces with 10% to 15% solution of muriatic acid to remove laitance and impurities.
4. After acid has stopped foaming or boiling, immediately rinse thoroughly with water.

b. Applications

1. Apply a primer coat of elastomeric coating standard of the manufacturer at the rate of 1.3 liters per 10 square meters (1/3 gallons per 100 square feet) over surfaces.
2. After the primed surfaces has dried, apply 35 dry mils of coating at the rate of 10 sq.m. per 3.79 liters for three (3) coatings to all surfaces be brushed or rolled.
3. Allow three (3) hours or longer between coatings if relative humidity is above 70%.
4. When using roller application method, the material shall not be rolled excessively.
5. Right quantity of material and proper application strokes shall be made to produce a uniform firm thickness and to prevent undue sagging.
6. The coat must flow into all cracks, control joints and pores. For clean up purposes, use water.

3.04 Metallic Oxide

a. Mix to consistency of thick grout and apply as per manufacturer's specifications.

3.05 Cementitious Waterproofing

a. Surface Preparation

1. All surfaces to be waterproofed shall be examined for form tie holes and structural defects such as honeycombing, rock pockets, faulty construction joints, cracks, etc.
2. Concrete surfaces to be treated must be clean and free of laitance, dirt, films, paint, coatings or other foreign matter. The surfaces must also have an open capillary system so as to provide "tooth and suction" for the treatment. If surfaces are too smooth, the concrete should be acid etched or lightly sandblasted (or waterblasted).
3. Structural defects such as cracks, faulty construction joints and honeycombing should be routed out to sound concrete and repaired in accordance with the specification manual repair procedures.
4. Horizontal surfaces should preferably have a rough wood float or broom finish. All concrete laitance must be removed either by etching with muriatic acid or by light waterblasting or sandblasting.

b. Applications

1. Application of all materials shall be done by or under the direction of a manufacturer's representative, or a person who is thoroughly experienced in the installation of cementitious waterproofing materials.
2. The treatment should be applied with a semi-stiff bristle brush, janitor's broom (for large horizontal applications) or with specialized spray equipment.
3. The treatment must be uniformly applied under the conditions and quantities specified. One coat should have a thickness of just under 1/16 inch (1.2 mm).
4. When a second coat is required, it should be applied after the first coat has reached an initial set but is still "green" (less than 48 hours). Light pre-watering between coats may be required due to drying.
5. The treatment cannot be applied in rain or during freezing conditions. For best results, application should take place at temperatures above 40 degrees F (4 degrees C).

c. Curing

1. A misty fog spray of water must be used for curing the treatment. Curing must begin as soon as the coating has hardened sufficiently so as not to be damaged by a fine spray. Under most conditions, it is sufficient to spray treated surfaces three times a day for 2 - 3 days. In hot climates spraying may be required more frequently. During the curing period, the treatment must be protected from rainfall, frost and puddling of water.
2. For concrete structures that hold liquids (e.g. reservoirs, tanks, etc.), the treatment should be cured for three (3) days and then allowed to set for 12 days before filling with liquid.

d. Mixing of Concentrate

1. General: Mixed by volume with clean water free from salt or other deleterious materials. Materials shall be mixed in quantities which can be applied within 20 to 30 minutes from the time of mixing. As the mixture thickens, it shall be stirred frequently, but no additional water shall be added.
2. Mixing for Brush Application: Dry powder shall be measured and mixed into the mixing container. Water shall be measured and mixed into the powder with a paddle on a slow speed electric drill, (250 rpm) or other type of mixer which will ensure adequate mixing. For small jobs, it may be mixed by hand and trowel. Mixing proportions shall be as follows:

Coverage:	Proportions by Volume:
1.5 lb./sq.yd.	5 powder to 2 water
2.0 lb./sq.yd.	3 powder to 1 water

3. Mixing for Spray Application: Mixing shall be the same as for brush application in the preceding paragraph, except that a thinner mixture is required. The following proportions are to be used only as a guide. Spray applications may require slightly different proportions in order to properly match the type of equipment and pressures used.

Coverage:	Proportions by Volume:
1.5 lb./sq.yd.	5 powder to 3 water

PART 4: SCHEDULE OF WATERPROOFING

4.01 Membrane Waterproofing

a. For walls and floors of basement under water	-	3 layers membrane
b. For toilet rooms above ground	-	3 layers membrane
c. For canopy, concrete roof gutters; inside face of building	-	2 layers membrane
d. For deck roof	-	3 layers membrane

4.02 Hydrolithic Waterproofing

a. For interior face of wall of basement below grade	-	Apply one coat. For porous areas apply as many as necessary coats
b. For inside surface of concrete gutter outside building line	-	Apply one coat. For porous areas apply as many as necessary coats.

4.03 Liquid Waterproofing

a. For walls and floors of basement under water	-	40 mils
b. For toilet rooms above ground	-	20 mils
c. For canopy, concrete roof gutters, machine room	-	20 mils
d. For deck roof	-	40 mils

4.04 Metallic Oxide Waterproofing

a. For all vertical and horizontal construction joints below grade.

4.05 Cementitious Waterproofing

a. Mixing of Concentrate

1. General: Mixed by volume with clean water free from salt or other deleterious materials. Materials shall be mixed in quantities which can be applied within 20 to 30 minutes from the time of mixing. As the mixture thickens, it shall be stirred frequently, but no additional water shall be added.
2. Mixing for Brush Application: Dry powder shall be measured and mixed into the mixing container. Water shall be measured and mixed into the powder with a paddle on a slow speed electric drill, (250 rpm) or other type of mixer which will ensure adequate mixing. For small jobs, it may be mixed by hand and trowel. Mixing proportions shall be as follows:

Coverage:	Proportions by Volume:
1.5 lb./sq.yd.	5 powder to 2 water
2.0 lb./sq.yd.	3 powder to 1 water

3. Mixing for Spray Application: Mixing shall be the same as for brush application in the preceding paragraph, except that a thinner mixture is required. The following proportions are to be used only as a guide. Spray applications may require slightly different proportions in order to properly match the type of equipment and pressures used.

Coverage:	Proportions by Volume:
1.5 lb./sq.yd.	5 powder to 3 water

SECTION 07 150 DAMPROOFING

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete:

bituminous dampproofing
silicone dampproofing
cementitious dampproofing
preformed vapor barrier

b. See drawings and details for location and other requirements.

1.02 Submittals

a. Manufacturer's Literature: submit two copies.

1.03 Guarantee

a. Materials and workmanship shall be guaranteed for at least five (5) years.

1.04 Test

a. Spray silicone coated surfaces lightly with water after it has dried out.

1.05 Protection

a. Protect bituminous coating from scratches or damage during normal drying time.

b. Protect all surfaces that are not intended to be coated with water repellant.

PART 2: PRODUCTS

2.01 Silicone Dampproofing

a. Silicone water repellant - colorless, containing 5% solutions of silicone resin in volatile hydrocarbon solvent.

b. Solvent-type Silicone - federal specifications, SS-W-110 B containing 5% silicone resin.

c. Water-soluble silicone - transparent, non-staining, containing at least 2% silicone solids.

2.02 Cementitious Dampproofing

a. Cement-based moisture barrier coating for use under interior plaster or exterior masonry walls.

2.03 Preformed Vapor Barrier

a. Any of the following materials:

1. asphalt
2. polyethelene
3. elastomers
4. synthetic and natural rubber
5. metal and other substances

PART 3: EXECUTION

3.01 Application of Bituminous Dampproofing

a. Clean surface to be dampproofed thoroughly and make reasonably smooth by correcting and repairing cracks, crevices, holes and other concrete surface imperfections.

b. Make sure concrete surface is thoroughly dry.

c. Ensure that brush coats are thickly applied to compensate for 50% shrinkage.

d. Allow 24 hours for drying each before subsequent coats are applied.

e. Allow 14 days minimum drying time for last coat before permitting water contact or before backfilling earth against it.

3.02 Application of Silicone Dampproofing

a. Silicone water-repellant - for use on exterior surfaces of concrete and masonry above grade. Do not use for concrete or masonry surfaces below grade.

b. Solvent-type silicone - for use on limestone, exposed aggregate concrete and other light colored masonry.

3.03 Application of Cementitous Dampproffing

a. Thoroughly clean interior surfaces at exterior masonry walls to be plastered.

b. Brush cement-based coating in sufficient quantity to fill all voids, cracks and other concrete surface imperfections. Leave surface in rough abrasive texture by brooming afterwards.

c. Cover with cement plaster and thoroughly cure as per manufacturer's specifications.

3.04 Application of Vapor Barrier

a. Install as shown on the drawings and as per manufacturer's specifications.

3.05 Cleaning

a. Clean all aluminum and glass surfaces that are contaminated with silicone immediately.

3.06 Schedule

a. Bituminous Damproofing			
1.	For exterior face of wall of basement above water	-	one coat
b. Silicone Damproofing			
1.	Water soluble silicone for use on limestone and exposed aggregate finish	-	one coat
c. Cementitious Damproofing			
1.	For interior face of walls basement below grade without water pressure	-	one coat
d. Preformed Vapor Barrier			
1.	For floor slab direct on ground or on fill	-	see drawings for number of layers

SECTION 07 200 INSULATION

PART 1: GENERAL

1.01 Division 07 General applies to this Section.

SECTION 07 201 EXPANDED POLYSTYRENE FOAM

PART 1: GENERAL

1.01 SCOPE

a. Includes:

1. Insulation on walls, ceilings, underside of roof deck and elsewhere, as indicated.

PART 2: PRODUCTS

2.01 Use 50 millimeter thick, fire retardant grade, non-toxic styropor.

PART 3: EXECUTION

3.01 Install in accordance with manufacturer's specifications.

SECTION 07 202 UNFACED BLANKET AND BATT INSULATION

PART 1: GENERAL

1.01 Scope

a. Includes:

1. Apply to walls, ceilings, underside of roof deck and elsewhere as detailed.

PART 2: PRODUCTS

2.01 "Fiberglass" or "Rockwell" by ACI Fiberglass or Philippine Insulation Co. Inc.

PART 3: EXECUTION

3.01 Install as per manufacturer's directions.

d. Lay sheets in a manner such that vertical joints are broken. Lay top sheets with side corrugation down. Nail upper end of each sheet securely to purlins with 8-d G.I. nail in the valley of every second corrugation. The upper end of each sheet shall be covered by other sheets or by ridge and hip rolls.

e. Secure lower end of first sheet laid at gutter line by straps to the purlins after gutter hangers are in place. Use No. 24 gauge strap one inch wide with corners clipped off at riveting ends. Bend strap around purlins and rivet to the sheets.

f. Place first row of straps at gutter line. Then rivet the lower end of every sheet to the sheet beneath at the top of every fourth corrugation. Such rivets to alternate with rivets engaging the straps.

g. Rivet side laps with two lines of rivets staggered and spaced not to exceed 23 centimeters (9 inches) on centers.

h. Follow manufacturer's specifications/procedures in installing longspan pre-painted roofing.

3.02 Ridge Rolls, Hip Rolls and Valleys

a. Use 0.6 millimeters (Gauge 24) ridge roll. Minimum lap of ridge roll shall be 30 centimeters (12 inches) over roofing sheets. Rivet ridge to roofing sheets at top of every fourth corrugation in addition to rivets engaging top line of straps.

b. Use 0.6 millimeters (Gauge 24) hip roll. Minimum lap of hip roll shall be 30 centimeters (12 inches) over roofing sheets. Rivet hip roll at every second corrugation.

c. Use 0.6 millimeters (Gauge 24) valley. Project 45 centimeters (18 inches) away and under roofing sheet edge each way and secure to framework with G.I. nails spaced not to exceed 30 centimeters (12 inches) on centers.

3.03 Flashing and Counter Flashing

a. Use 0.6 millimeters (gauge 24) plain G.I. sheet for flashings at intersection of roof and parapet walls. Raise one wing of flashing not less than 20 centimeters (8 inches) high terminated at horizontal reglet.

b. Where corrugations run parallel to the walls, corrugate one wing of the flashing sheet to match corrugation of G.I. sheets while other wing shall go up against the walls and counter flashed.

DIVISION 08 000 DOORS AND WINDOWS

PART 1: GENERAL

1.01 Division 01 applies to this Division

1.02 Submit Shop Drawings in accordance with the provision of the General Conditions.

1.03 Furnish labor, materials, and equipment necessary for completion of work unless indicated or noted otherwise

SECTION 08 100 METAL DOORS AND FRAMES

PART 1: GENERAL

1:01 Scope

a. Furnish materials and equipment and perform labor required to complete

hollow metal doors and frames,
aluminum doors and frames,
installation of hardware.

b. See drawings and details for sizes, location, extent and other requirements.

1.02 Shop Drawings

a. Submit shop drawings of fabricated items showing sizes of all members and methods of joining and anchoring. Refer to Article 5 "Shop Drawings" of the UAP General Conditions

1.03 Samples

a. Submit sample corner sections of metal doors and metal buck or jambs in accordance with Article 10.02 "Samples of Materials" of the UAP General Conditions.

1.04 Protection

a. Before shipment from factory, cover aluminum work with heavy building paper or other adequate covering to protect finish surface from mortar, plaster, finger prints, scratches or stains.

b. Aluminum surfaces in contact with concrete, plaster, steel, or other dissimilar metal parts shall be given a coat of suitable alkali-resistant bituminous paint.

c. Aluminum shall have a hard, smooth satin finish and shall receive a coating of metharcrylite lacquer as an additional protection.

d. Shop paint with two coats of air dried zinc chromate rust inhibitive primer all metal items except aluminum brass or stainless steel.

PART 2: PRODUCTS

2.01 Materials

a. Hollow Metal Doors

1. Door Frames - Gauge 16 cold-rolled pickled
2. Hinge Plates - Gauge 10 or heavier.
3. Plates for lock and lockset - Gauge 12 or heavier.

b. Aluminum

1. Extruded sections - alloy 6063-T5.
2. Fastening device - cadmium plated.
3. Anchor bolts - pressed or rolled and galvanized.
4. Shimming material - chemically treated wood.

2.02 Fabrication

a. Hollow Metal Doors

1. Flush Type - flush type door shall be 4.5 centimeters (1-3/4") thick. Reinforced doors with formed steel sections extending full height of doors and spaced not over 20 centimeters (8") O.C. vertically.
   Tops and bottoms of doors shall have continuous stiffener channels welded to side plates.
   Insulate in each space between reinforcement with fiberboard or cork to deaden metallic sound.
   Edges at top sides shall be reinforced and finished flush.
2. Panel Type - Formed of gauge 18 cold rolled steel. Reinforce, weld and grind smooth all joints at intersections. Insulate panels, rails and stiles with cork or fiberboard to deaden metallic sound. Panel moulds shall be mitered and welded at corners and assembled to stiles and rails with interlocking members. Reinforce top and bottom of doors with continuous channels. Spot weld in place.

b. Kalamein or Metal Covered Door:

1. Flush Type - Construct cores of thoroughly seasoned kiln dried wood, two ply laminated or built up of required thickness. Cover core under heavy pressure. Make vertical seams flush with door surfaces. Fill joints with solder and grind smooth.
2. Panel Type - Each stile and rail shall consist of not more than two continuous length of thoroughly seasoned kiln dried wood dressed 1.5 mm (1/16 inch) less than finish door thickness. Extend stiles full height of door. Panel cores shall be either 6 mm (1/4 inch) asbestos or 3-ply laminated plywood.
   Cover stile, rails and panels with 24 gauge galvanized or zinc coated steel sheets. Lock or weld joints together between stiles and rails. Flush seams with solder and grind smooth. Construct panel mouldings, muntins and glass beads of 0.89 mm (.035 inch) US gauge hollow steel with corners mitered and brazed.

c. Tinclad Fire Door and Frames - conform to requirements of Underwriter's Laboratories for the type and use of openings indicated or required.
   Cores shall be 2 or 3 ply kiln-dried laminated wood. Cover core on all sides with 9 kilogram (20 lbs.) terne plate. Weld corners of frame and grind smooth. Welding may be done at jobsite. Provide standard automatic or self-closing devices required.

d. Rolling Metal Doors - rolling doors shall be formed of interlocking metal slats hot galvanized steel or aluminum rolled into easy curves to form a door of sufficient section to resist wind pressure of 0.95 kPa per square meter (20 lbs. per square foot).

e. Aluminum Works

1. Wall Panel Assembly - Accurately mate vertical and horizontal pieces flush at intersections. Assembled dimensions shall conform to the drawings.
2. Door Assembly - Door stiles and top rails for swing doors shall be from solid intrusions. Fit members to hairline joints.

PART 3: EXECUTION

3.01 Installation

a. All frames shall be erected plumb, square, and true to line and level, with secure fastening to structures and anchors. Formed steel stiffeners and reinforcement shall be installed within frames at all joints where top screw fastenings are used in connection with embedded strap anchorage.

b. Doors shall be installed by authorized representative of the manufacturer, but not before all plastering is completed.

c. All glazing beads and bars shall be tap-screw set and let loose. All items of hardware shall be adjusted for proper functioning.

3.02 Hardware

a. All metal doors and frames shall be mortised, reinforced, drilled and tapped for mortise hardware finish under "Finish Hardware".

3.03 Inspection

a. Carefully examine and clean all aluminum surfaces and test all framing and hardware. Make all repairs and adjustment to the work, leaving it in a satisfactory condition.

3.04 Schedule

a. Refer to Schedule of Drawings.

SECTION 08 200 WOOD DOORS

PART I: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete

panel doors,
flush doors
and other wood doors

b. See drawings and details for sizes, location, extent and other requirements.

1.02 Samples

a. Submit sample corner sections of wood doors and jambs in accordance with Article 10.02 "Samples of Materials" of the UAP General Conditions.

1.03 Protection

a. Adequately protect doors from scratches, and other stains with heavy building paper.

PART 2: PRODUCTS

2.01 Materials

a. Plywood : First quality plywood grain and color suitable for natural finish.

b. Framings : Kiln dried tanguile treated lumber for interior framings and kiln dried narra for exposed edge framing.

2.02 Fabrication

a. Assemble joints in doors with water resistant glue; keep doors under pressure until glue has thoroughly set.

b. Sand smooth finish door. Door must have tight joints and clean cut mouldings.

c. Faces shall be free from defects or machine marks that will show through the finish.

d. Wood flush doors hollow core:

1. Size, design and thickness shall be as indicated on the drawings.
2. Doors shall have cross banding and faces of two or more plies with a combined minimum thickness of 2.5 millimeters (1/10 inch) after sanding. Face veneer shall be first quality selected plywood either rotary-cut or sliced-cut. Provide lock blocks of size required for hardware used. Rails and side edge bands shall be of hardwood same as face veneer.
3. Doors shall be trimmed square and factory pre-fit to standard sizes.

e. Wood panel doors:

1. Panel doors shall have solid stiles and rails and framed mortise and tenon construction.
2. Raised and flat panels shall be same specie as stiles and rails.

PART 3: EXECUTION

3.01 Installation

a. Each door shall be accurately cut trimmed and fitted to its frame and hardware.

b. Give allowance for painter's finish and possible swelling or shrinkage.

c. Clearance at lock and hanging stiles and at top shall not exceed 3 millimeters (1/8 inch). At bottom not bigger than 6 millimeters (1/4 inch).

d. All corners shall be rounded to 1.5 millimeters (1/16 inch) radius. Lock and rail edges shall be slightly leveled.

e. The screws for hardware shall not be driven, but merely started by driving and then screwed home.

f. All doors shall operate freely and with all hardware properly adjusted and functioning.

3.02 Schedule

Refer to Schedule of Drawings.

SECTION 08 550 FINISH HARDWARE

PART I: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete all jalousie windows as shown in drawings.

b. See drawings for schedule of sizes, types, and details of all jalousie windows.

1.02 Shop Drawings and Samples

a. Submit shop drawings per Article 5 "Shop Drawings" of UAP General Conditions.

b. Submit sample sections, hardwares, operators, and accessories per Article 10.02 "Samples of Materials" of the UAP General Conditions.

PART 2: PRODUCTS

2.01 Materials

a. Jalousies	-	Roto operated
b. Glass Blades	-	5.5 mm (7/32") thick, industrex, smooth edge, secured by heat-treated aluminum clips with integral spring unit.
c. Weather Stripping	-	Bulb type B.F. Goodrich Geon Vinyl.
d. Insect Screen	-	Insert overlap type with specially rolled section and 18/18 mesh Alcad aluminum cloth woven by manufacturer Sinclair to "Opal" aluminum insect screen.

PART 3: EXECUTION

3.01 Measurements

a. For regular and low sill height openings, base height measurement of jalousies from bottom of window head line downwards.

b. Follow alignment shown in detailed drawings for width measurements. Transmit questions to the Project Manager and/or Architect for clarifications.

3.02 Adjusting

a. No wooden moulding or fillers of any kind is allowed upon failure to provide exact opening in window frame due to non-conformity to manufacturer's standard.

3.03 Guarantee

a. Operators shall function properly and shall have positive locking in closed position.

b. The structure shall be guaranteed against penetration of insects.

SECTION 08 710 FINISH HARDWARE

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete:

finish hardware for doors,
windows and cabinets

b. See drawings and schedules for other requirements.

1.02 Samples

a. Submit samples of locksets, hinges, doors and cabinet pulls, door closers and other finish hardware and accessories as per Article 10.02 "Samples of Materials" of the UAP General Conditions.

1.03 Packaging

a. Individually pack and deliver to jobsite in manufacturer's original container each finish hardware item required.

b. All hardware shall have all the necessary screws, keys, instructions and installation template for spotting mortising tools.

c. Furnish packing list to identify the quality and type of hardware in every package.

PART 2: PRODUCT

2.01 Hinges

a. For medium weight low-frequency door: use full mortise, plain bearing, regular weight.

b. For medium weight medium-frequency door: use full mortise, ball bearing, regular weight.

c. For medium heavy weight, high-frequency door: use full mortise, ball bearing, extra heavy weight.

d. For hollow-metal doors with channel-iron jambs: use full surface, ball bearing hinges.

e. For wood or kalamein doors with wood or metal jambs: use half surface, ball bearing hinges.

f. Refer to Schedule of Doors for other details.

2.02 Cylindrical Locksets

a. High grade cylindrical locksets, heavy or standard duty.

b. Mechanism to be heavy gauge, cold rolled steel in cylindrical housing with all parts zinc plated and dichromated for maximum resistance against rust and corrosion.

2.03 Mortise Locks

a. For interior doors use Type 190L US Federal Specifications FF-H-106

b. For exterior doors use Type 190M US Federal Specifications FF-H-106

2.04 Sliding-Folding Locks

a. For exterior doors use double cylinder locks.

b. For interior doors use single cylindrical locks.

c. Provide cylinder mortise hook bolt dead lock for all sliding and folding doors.

2.05 Panic-Exit Device

a. Instantaneous and fool-proof. No outside operation.

b. Vertical bolts latch door at top and bottom and automatic latch stop to retain bolts in retracted position while door is open and automatically released when door is closed.

2.06 Door Closer

a. To conform to US Federal Specifications FFH-121 C Type 3230 with following sizes:

Door Width	Size of Door Closer
750 mm (2'-6") max. width	Size 2
1050 mm (3'-6") max. width	Size 3
1450 mm (4'-10") max. width	Size 4
1200 mm (4 feet) max. width	

2.07 Miscellaneous Door Hardware

a. For doors that will strike an object, provide rubber bumper or door stop. Type and location of installation to be approved by the Architect.

b. For heavy frequency door with door closer and mortise locks provide stainless steel push plates.

c. For double leaf wooden doors provide 2 flush bolts 45 centimeters (18" long).

d. For silencing the door when it strikes the stop strip and to prevent rattles, install three (3) silencers in the stop of frame.

2.08 Sliding-Folding Door Hardware

a. For interior Bi-folding doors provide the following:

1. Tracks - Extruded aluminum anodized finish. Must be able to withstand maximum load of 16 kilograms (35 pounds) per folding panels.

1. Hangers - Zinc plated steel with two nylon rollers and self-leveling feature for smooth and quite operation.
2. Pivots - Heavy gauge steel bottom and top pivots zinc plated with nylon bearing surfaces.

b. For exterior sliding-folding doors provide the following:

1. Tracks - Gauge 13 wrought steel maximum load capacity or 454 kilograms (1,000 pounds)
2. Ball-bearing Hanger - ball-bearing on the swivel and on the wheel to withstand maximum load of 68 kilograms (150 pounds).

2.09 Key Cabinet

a. Furnish one (1) key cabinet about 450 capacity for each branch.

b. Weld hook and label pockets to cabinet panels.

c. Include printed key gathering envelope, reserve tags, self-locking key clips requiring no tools for assembly, key receipts and receipts holders, and 3 parts visible card index.

PART 3: EXECUTION

3.01 Installation

a. Install hardware to fit details as shown on the drawings and as per manufacturer's specifications. Supply all necessary templates and instructions required.

3.02 Keying

a. Locks shall be keyed in sets and sub-sets. Where locks are specified to be keyed alike in anyone system furnish a total of 4 keys for each set.

SECTION 08 730 WEATHER STRIPPING AND SEALS

PART 1: GENERAL

1.01 Scope

a. Provide materials and equipment and perform labor required to complete all types of weather stripping in the form of:

metallic inserts,
pile fabric strips,
gaskets or other flexible substance

b. See drawings and details for types and location of weather stripping strips.

1.02 Samples

a. Submit sample strips of weather strip elements in accordance with Article 10.02 "Samples of Materials" of the UAP General Conditions.

PART 2: PRODUCTS

2.01 MATERIALS

a. Weather stripping materials shall meet the following tests:

1. Rubbin resistance test: No change in section after 1,000 times in the following:

Grip distance	-	25 mm
Stroke	-	40 mm
Load	-	1 kg.

2. Chemical reaction test: No abnormal change after at least 24 hours soaked in:

Hydrochloric Acid, Sulfuric Acid, Liquid Ammonia, Acetic Acid and Caustic Soda.

3. Heat resistance and cold endurance test: No cracks or deformation after 48 hours in 100 degrees Celsius and after 12 hours at 30 degrees Celsius.

PART 3: EXECUTION

3.01 INSTALLATION

a. Install on all exterior doors and window openings to render them watertight.

b. Install on all interior doors to silence door.

SECTION 08 800 GLASS AND GLAZING

PART I: GENERAL

1:01 Scope

a. Furnish glass free from imperfections and water marks and other materials and equipment and perform labor required to complete all glass and glazing work.

b. See drawings for size, location and details.

1.02 Samples

a. Submit samples of glass panel in accordance with Article 10.02 "Samples of Materials" of the UAP General Conditions.

PART 2: PRODUCTS

2.01 Material

a. Plate Glass - mechanically round and polished after rolling resulting in parallel, distortion free surfaces. Use where good vision is required.

b. Float Glass - manufactured by "floating" continuous ribbon of molten glass onto a bath of molten tin where it is repeated to obtain a flat, fire-polished finish. It is then allowed to cool to a degree permitting it to be drawn on rollers in a long oven and then annealed.
Commonly used in windows, sliding doors, and window walls.

Grade AA	-	intended for use where superior quality is required.
Grade A	-	intended for selected glazing
Grade B	-	intended for general glazing

2.02 Glazing: Glazing materials for glass installation may be:

a. Bulk compounds such as:

Mastics - elastic compounds and non-skinning compound.
Putties - wood sash putty, metal sash putty.
Sealants - one component, two components.

b. Preformed sealants such as:

Synthetic polymer-base sealants - resilient or non resilient type.
Preformed gaskets - compression type, structural type.

PART 3: EXECUTION

3.01 Glazing

a. Prevent glass from all contact with metal or any hard or sharper materials by use of resilient shims placed at quarter points.

b. Use resilient sealants.

c. Use stops in sizes permitting a "good grip" on the glass.

d. Install glass only in openings that are rigid, plumb and square.

e. Allow sufficient clearance at edges of glass to compensate for its expansion or for some settlement of the building. Clearance should be 6 millimeters (1/4 inch) from edge to frame and 3 millimeters (1/8 inch) for face.

f. Markings, banners, posters, and other decal shall not be applied directly to glass surface as these could cause thermal stress.

g. Removal of putty or glazing compound smears from glass shall be performed by the glazing contractor during the materials' normal work life. Failure to do so may result in damage to the glass.

3.02 Heat Absorbing Glass

a. Special attention must be given to the installation of all types of heat absorbing glass, because of its ability to absorb heat. Partial shading, painted signs, large interior labels, tight draperies or blinds, heavy masonry structure and heating-cooling outlets directing air against the glass may increase edge tension stresses.

b. The ability of heat absorbing glass to resist solar energy breakage is primarily related to its edge strength. Therefore:

1. Edges must be cleaned out.
2. Do not install glass with flared edges at the bottom.
3. Do not seam edges.
4. Do not nip edges nor scarf corners.
5. Be careful not to bump or brush edges against metal or other hard objects:
6. Avoid the use of pocket flush glazing.
7. Radius cutting should be reviewed by manufacturer.

DIVISION 09 000 FINISHES

PART 1: GENERAL

1.01 Division 01 applies to this Division.

1.02 Scope

a. Includes:

1. Furnish labor, materials, and equipment as necessary for completion of this work unless indicated or noted otherwise.

SECTION 09 100 METAL SUPPORT SYSTEMS

PART 1: GENERAL

1.01 Division 09 General applies to this Section.

SECTION 09 130 ACOUSTICAL SUSPENSION SYSTEM

PART 1: GENERAL

1.01 Scope

a. Includes :

1. Provide ceiling suspension systems to receive acoustical ceiling tiles.

PART 2: PRODUCTS

2.01 Suspension System for Lay-in Tile

a. System shall meet requirements of ASTM C-635-78 "Metal Suspension Systems for Acoustical Tile".

1. Aluminum main runners and cross T's shall have a 25mm exposed face and a 600mm x 600mm module or a 600mm x 1200mm module (refer to ceiling layout).
2. Hanger-wire - 2.05 mm (12 gauge) cold rolled electro-galvanized steel matching system finish.

b. Approved Manufacturer

1. "Hooven Comalco, Inc." or "Ajax Aluminum Industries" or "Reyphil-Altech Fabrication Industries, Inc."

PART 3: EXECUTION

3.01 Recommended practice for installation of metal furring suspension systems designed in ASTM C-636-76 shall govern this installation.

3.02 Give particular attention to required hanger wire placement and fixture protection. Individual component deflection shall not exceed 1/360 of the span.

SECTION 09 225 VENEER STONE

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete all natural stone work used for: wainscoting floor tile,
counter tops and base

b. See drawings and details for location and extent of work required.

1.02 Qualification of Installer

a. Secure approval from Architect for qualified and experienced sub-contractors for this portion of the work as per Article 25 of the UAP General Conditions.

1.03 Samples

a. Submit samples of materials, anchorage device and adhesives for approval by the Architect as per Article 10.02 of the UAP General Conditions.

1.04 Delivery and Storage of Materials

a. Protect materials from breakage during delivery and handling and properly store materials in the best manner to avoid damages.

1.05 Protection

a. Protect adjacent floor, walls, ceiling from being soiled, stained or damaged by reason of the required work.

PART 2: PRODUCTS

2.01 Stones

a. Limestone - approved grade, color, grain and texture.

b. Adobe stone - free from imperfections and of approved color and texture.

2.02 Anchors, Dowels and Clamps: Anchors, dowels, clamps and bolts shall be steel or wrought iron, hot zinc-coated after fabrication and of the following sizes and shapes:

a. Dowels - 75 millimeters (3 inches) long, cut from 12 millimeters (1/2 inch) rebar.

b. Clamps - 4.75 millimeters x 32 millimeters x 200 millimeters (3/16 x 1-1/4 inches by 8 inches) long after bending with ends turned 25 millimeters (1 inch) into stone.

c. Anchors for Masonry - 4.75 millimeters x 32 millimeters (3/16 x 1-1/4 inches) extending 100 millimeters (4 inches) and outer end bent 25 millimeters (1 inch) onto stone.

For concrete: Metals slots or inserts, 3 millimeters x 32 millimeters (1/8 x 1-1/4 inches) and turned into stone 25 millimeters (1 inch).

PART 3: EXECUTION

3.01 Cutting

a. Cut stone accurately to shape and dimensions with joints and bonding as shown.

b. Where stone facing is not supported at each floor it shall be supported by a continuous shelf angles at every 3 meters (10 feet).

c. Beds and ends shall be straight and at right angles to face.

d. Where open joints are required make joints 6 millimeters (1/4 inch) wide and 16 millimeters (5/8 inch) deep.

3.02 Setting

a. Stone shall be set by experienced stone masons.

b. Set each stone plumb, level and true to line in full bed of mortar and tap lightly to even bearing.

c. Do not build up stone facing more than 2 courses above backing.

3.03 Pointing and Caulking

a. Brush joints clean. Carefully remove any wedges so that pointing will be continuous.

b. After thoroughly wetting, point all joints flush with pointing mortar except those to be left open or caulked.

3.04 Cleaning

a. Upon completion of work, leave stone clean and free from mortar stains or traces of cleaning compound and then thoroughly polish.

SECTION 09 230 PLASTERED AGGREGATE TOOL FINISH

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete all exposed aggregate finish.

b. See drawings for sizes, details and location of work required.

1.02 Qualifications

a. Manufacturer must be approved by the Architect.

1.03 Samples

a. Test panels of 1.20 x 1.20 meters (4 feet x 4 feet) shall be prepared by the Contractor for Architect's approval before execution of the work.

PART 2: PRODUCTS

2.01 Materials

a. Coarse Aggregate - clean, hard particles of gravel or crushed rocks sizes to be determined by the Architect after approval of test panels.

b. Sand - well graded, clean, free from soluble salts and organic impurities.

c. Water - clean, potable water.

d. Cement - conform to ASTM Standards.

PART 3: EXECUTION

3.01 Preparation of Surface

a. Concrete and masonry surfaces shall be clean, free from dust, grit, grease and other foreign matters.

b. For concrete surface, remove skin with bladed hammer until coarse aggregate is exposed.

c. For masonry, wet surface thoroughly and apply 1 layer or scratch coat cement plaster.

3.02 Application

a. Wet concrete or masonry surfaces thoroughly with water.

b. Mix mortar aggregate in approximately the following proportion:
1 part cement : 1 part "Porac" sand : 2 parts coarse aggregate
Concrete admixture to reduce water-cement ratio and to produce a workable mixture.

c. Apply mixed mortar aggregate on one panel in one continuous operation with a minimum thickness of 19 millimeters (3/4 inch.)

d. Do not use mortar guide in applying mixed mortar aggregate. Use instead spots of mixed mortar aggregate placed approximately 1.8 meters (6 feet) apart.

e. Use string as guide in producing an even surface.

3.03 Tooling

a. The next day after application of mixed mortar aggregate, gently tool the applied mortar by pneumatic hammer until the coarse aggregate shows uniformly on the surface.

3.04 Curing

a. Cure plastered aggregate after tooling for at least 5 days.

3.05 Protection

a. Protect dinished wall by a coat of "Prime-A-Pell" water repellant or "Thompson's" water seal.

SECTION 09 231 PEA GRAVEL

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to compete all pea gravel works.

b. See drawings and details for location, extent and other requirements.

1.02 Qualification

a. Experienced and qualified pebble washout contractor shall be approved by the Architect.

1.03 Samples

a. Submit sample panels of different colors and sizes of gravel in accordance with Article 10.02 of the UAP General Conditions.

1.04 Protection

a. Protect finished work from traffic and damage until turnover of building to Owner.

PART 2: PRODUCTS

2.01 Materials

a. Portland Cement

b. Luna graded pebble

c. White cement

d. Colored cement

PART 3: EXECUTION

3.01 Preparation

a. Check and correct pitch of floors to provide good drainage.

b. Clean area to be worked on and keep wet for at least 4 hours before scratch coat is applied.

c. Scratch coat shall not be less than 19 millimeters (3/4 inch) in thickness. Proportion of scratch coat shall be: 1 part Portland cement to 2 parts sand by volume

3.02 Application

a. Apply pebble washout grout with pressure to obtain solid adhesion to surface of concrete.

b. Pebble washout grout shall be composed of 1 part portland cement (or white cement) to 2-1/2 parts quart size pebble trowelled to a hard, smooth even plane, redded and floated to a uniform surface not less than 10 millimeters (3/8 inch) thick. For black pea gravel use necessary black cement to get required shade.

c. When the pebble washout grout had initially set, spray surface lightly with clean water.

d. Wash down cement paste by means of soft brush and water to expose the natural texture of the pebble.

3.03 Cleaning

a. Before turn over of building to the Owner, wash pebble surfaces with 1 part muriatic acid to six parts water.

SECTION 09 260 GYPSUM WALLBOARD SYSTEMS

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete all gypsum board works for walls and/or ceilings.

b. Refer to drawings for sizes, location and extent of work required.

1.02 Sample

a. Submit sample for Architect's approval as per Article 10.02 of the UAP General Conditions.

1.03 Delivery

a. All gypsum boards shall be delivered and stored in undamaged condition as packaged by the manufacturer, with the manufacturer's seals and labels in tact.

PART 2: PRODUCTS

2.01 Materials

a. Types:
   1. Standard Type
   2. Aluminum Foil Laminated Type
   3. PVC Laminated Type
   4. Moisture Resistant Type
   5. Extra Fire Resistant (Type X)

b. Types of Edges:
   1. Square Edge
   2. Tapered Edge

c. Sizes and Thickness:
   1. Square Edge
      - 9mm x 1200 mm x 2400mm (20.0 kg/sheet)
      - 12mm x 1200 mm x 2400mm (26.6 kg/sheet)
      - 15mm x 1200 mm x 2400mm (37.0 kg/sheet)
   2. Tapered Edge
      - 9mm x 1200 mm x 2400mm (20.0 kg/sheet)
      - 12mm x 1200 mm x 2400mm (26.6 kg/sheet)
      - 15mm x 1200 mm x 2400mm (37.0 kg/sheet)

d. Adhesive - special non-staining waterproof type resistant to alkaline solution. Adhesive shall develop a minimum adhesive strength of 6.895kPaq (1 pound per square inch) of contact surface within 48 hours after erection of units, at 21.1 degrees Celsius (70 degrees F).

PART 3: EXECUTION

3.01 Installation

a. Install acoustical tile units true to line and in even plane according to ceiling pattern shown on the drawings.

b. Application of acoustic tile shall be done by the manufacturer or his authorized applicators and in strict accordance with the specifications of the manufacturer.

c. Where tile is applied with adhesive, spot-prime back of tile at each corner with thin layer of adhesive and then apply adhesive over the four primed spots so that resultant area of adhesive in contact with both surfaces will be at least 100 square centimeters (16 square inches).

d. Sprayed-on type of acoustical materials shall be applied to thickness required to produce the noise reduction coefficients required. The finished surface shall be level or plumb and uniform texture and color. After finishing spray-over acoustical surfaces with thin color binder as recommended by manufacturer.

SECTION 09 300 TILE WORK

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete ceramic glazed and vitrified ceramic tile work.

b. See drawings and details for location and extent of work required.

1.02 Samples

a. Submit samples of floor and wall tiles including all required beads and mouldings as per Article 10.02 of the UAP General Conditions.

1.03 Delivery of Materials

a. Deliver all materials in original cartons and containers with labels intact and seals unbroken.

1.04 Protection of Finished Work

a. Cover floors with heavy building paper before foot traffic is permitted over finished tiles floors.

b. Lay board walkways on floors to be used as passageways.

PART 2: PRODUCTS

2.01 Ceramic Tiles

a. Ceramic Glazed Wall Tiles - standard grade bright or matte glazed, square edged or cushion edged with integral spacers approximately 8 millimeters (5/16 inch) thick.

b. Vitrified Ceramic Floor Tiles - standard grade vitrified unglazed natural clay type dust-pressed or extruded approximately 6 millimeters (1/4 inch) thick.

c. Trim - compatible with type, color, thickness, face, size and finish of specified wall tiles.

d. Accessories - soap holders and paper holders shall be recessed type to follow color of specified wall tiles.

2.02 Grout Materials

a. Portland Cement Grout
   1. Scratch Coat : 1 part portland cement to 5 parts damp sand to 1/5 part hydrate lime.
   2. Mortar Bed : 1 part portland cement to 5 parts damp sand to 1/2 part hydrate lime.
   3. Bond Coat : Neat portland cement paste.

b. "ABC" Tile Grout and "ABC" Tile Adhesive.
   1. Follow strictly manufacturer's mixing specifications.

PART 3: EXECUTION

3.01 Application of Scratch Coat

a. Thoroughly dampen, but do not saturate surfaces of masonry or concrete walls before applying the scratch coat. Surface areas shall appear slightly damp. Allow no free water on the surface.

b. On masonry first apply a thin coat with great pressure, then bring it out sufficiently to compensate for the major irregularities on the masonry surfaces to a thickness of not less than 6 millimeters (1/4 inch) at any point.

c. On surfaces not sufficiently rough to provide good mechanical key, dash on the first coat with a whisk broom or fiber brush using a strong whipping motion. Do not trowel or otherwise disturb mortar applied by dashing until it has hardened.

d. Evenly rake scratch coats, but not dash coats, to provide good mechanical key for 1 subsequent coat before the mortar has fully hardened.

3.02 Floor Tile Installation on Mortar Bed

a. Before spreading the setting bed, establish lines of borders and canter the fieldwork in both directions to permit the pattern to be laid with a minimum of cut tiles.

b. Clean concrete sub-floor then moisten but not soak. Afterwards sprinkle dry cement over the surface and spread the mortar on the setting bed.

c. Mix mortar 1 part Portland cement to 3 parts sand. Tamp to assure good bond over the entire areas and screed to provide a smooth and level bed at proper height and slope.

d. Pitch floor to drain as required.

e. After setting bed has set sufficiently to be worked over, sprinkle dry cement over surface and lay tile.

f. Keep tile joints parallel and straight over the entire area by using straight edges.

g. Tamp the tile solidly onto the bed, using wood blocks of size to ensure solid bedding free from depressions.

h. Lay tiles from center lines outward and make adjustments at walls.

3.03 Wall Tile Installation on Mortar Bed

a. Before application of mortar bed, dampen the surface of scratch coat evenly to obtain uniform suction.

b. Use temporary or spot grounds to control the thickness of the mortar bed. Fill out the mortar bed even with the ground and rod it to a true plane.

c. Apply the mortar bed over an area no greater than can be covered with tiles while the coat is still plastic.

d. Allow no single application or mortar to be 19 millimeters (3/4 inch) thick.

e. Completely immerse glazed wall tile in clean water and soak it at least 1/2 hour. After removal, tile on edge long enough to drain off excess water. Resoak and drain individual tiles that dry along edges.

f. Apply a bond coat 0.8 millimeters to 1.6 millimeters (1/32 to 1/16 inch) thick to the plastic setting bed or to the back of each sheet or tile.

g. Press tile firmly into the bed and beat into place within 1 hour.

h. Lay tile fields in rectangular block areas not exceeding 60 centimeters x 60 centimeters (24 x 24 inches). Cut the setting bed through its entire depth along the edges of each block area after placement and before subsequent block are installed.

i. Within 1 hour after installation of tile, remove strings from string-set tile and wet the faces of face-mouthed tile and remove the paper and glue. Avoid using excess water. Adjust any tile that is out of alignment.

3.04 SETTING TILE ON ADHESIVE TWO METHODS

NOTE: There are two methods of setting tiles with adhesive.

a. Combing adhesive over the entire foundation surface is called the "Floating" method.

b. Spreading it on the back of each tile as set called "Buttering" method.

The floating method is generally preferred because it is faster, gives a more uniform appearance, uses less adhesive, and give better waterproofing treatment to the wall.

The buttering method is recommended where tile must be cut and fitted around plumbing and electrical fixtures.

a. Floating Method

1. Apply gobs of adhesive to wall and comb out adhesive with a trowel or scraper having notches and flats as recommended by manufacturer.
2. Hold the trowel at a 30 to 45 degree angle to the wall surface for easy spreading and maximum coverage.
3. Set tile, using a slight twisting motion and press down to give a final adhesive thickness of 1.5 millimeters (1/16 inch).
4. Do not allow spread adhesive to stand over 45 minutes before setting tile.

b. Buttering Method

1. Apply sufficient adhesive to the back of each tile to produce a spot of approximately 75 centimeters (3 inches) in diameter, when bonded.
2. Press down adhesive thickness to 1.5 millimeters (1/16 inch) using a slight twisting motion.

3.05 Setting Tiles on "ABC" Tile Adhesive

a. Follow strictly manufacturer's instructions for application on floor and wall surfaces.

3.06 Grouting

a. After tile has sufficiently set, force a maximum of grout into joints by trowel, squeeze, brush or finger application.

b. Before grout sets, strike or tool the joints of cushion-edged tile to the depth of the cushion.

c. Fill all joints of square edged tile flush with the surface of the tile. Fill all gaps or skips.

d. During grouting clean all excess grout off with clean burlap, other cloths or sponges.

e. For "ABC" tile grouts, request approval by the Architect of the appropriate color/shade of grout material and follow strictly manufacturer's specification on application/use.

3.07 Cleaning

Sponge and wash tile thoroughly with clean water after the grout has stiffened. Then clean by rubbing with damp cloth or sponge and polish clean with dry cloth.

SECTION 09 500 ACOUSTICAL TREATMENT

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete all acoustic tile work.

b. Refer to drawing for sizes, location and extent of work required.

1.02 Sample

a. Submit sample for Architect's approval as per Article 10.02 of the UAP General Conditions.

PART 2: PRODUCTS

2.01 Materials

a. 19 millimeters x 600 millimeters x 600 millimeters (3/4" x 2' x 2') or 19 millimeters x 600 millimeters x 1200 millimeters (3/4" x 2' x 4') fissured finish rated class A under the Flame Resistance section of the Federal Specifications SS A-1181. Can be washed when necessary and repainted without losing acoustical efficiency.

b. 10 millimeters (3/8 inch) thick Acoustic Pulp sprayed on concrete.

c. Adhesive - special non-staining water-proof type resistant to alkaline solution. Adhesive shall develop a minimum adhesive strength of 6.895 kPa (1 pound per square inch) of contact surface within 48 hours after erection of units, at 21.1 degrees Celsius (70 degrees F).

PART 3: EXECUTION

3.01 Installation

a. Install acoustical tile units true to line and in even plane according to ceiling pattern shown on the drawings.

b. Application of acoustic tile shall be done by the manufacturer or his authorized applicators and in strict accordance with the specifications of the manufacturer.

c. Where tile is applied with adhesive, spot-prime back of tile at each corner with thin layer of adhesive and then apply adhesive over the four primed spots so that resultant area of adhesive in contact with both surfaces will be at least 100 square centimeters (16 square inches).

d. Sprayed-on type of acoustical materials shall be applied to thickness required to produce the noise reduction coefficient required. The finished surface shall be level or plumb and uniform texture and color. After finishing spray-over acoustical surfaces with thin color binder as recommended by manufacturer.

SECTION 09 570 WOOD PARQUET FLOORING

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete all parquet floor work.

b. See drawings and details for location and extent of work required.

1.02 Samples

a. Submit sample panels of different color grains and patterns of wood parquet flooring in accordance with Article 10.02 of the UAP General Conditions.

b. Thickness of parquet must not be less than 19 millimeters (3/4 inch).

1.03 Delivery and Storage

a. Handle and store all flooring materials in undamaged condition as packaged by the manufacturer, with seals and label intact.

b. Store all materials at the jobsite in the area where they are to be installed for at least 72 hours prior to installation.

1.04 Inspection

a. Examine surfaces to receive wood parquet flooring and do not begin installation until defects have been corrected and the surfaces meet specifications.

b. Do not begin work until work of other trades which goes through flooring has been completed.

c. Do not begin installation of tile until floor is thoroughly dry.

PART 2: PRODUCTS

2.01 Materials

a. Primer - Must be of uniform consistency and guaranteed by manufacturer.

b. Wood - Philippine Hardwood, kiln dried. Composed of 75 to 80 percent quarter-sawed wood for dimensional stability.

PART 3: EXECUTION

3.01 Installation

a. Installation must be done by experienced installers approved by the Architect.

b. Spaces in which flooring is being set shall be closed to traffic and to other work until flooring is firmly set.

c. Follow the adhesive manufacturer's directions for mixing and applying primers and adhesives, covering all surfaces evenly.

d. Do not cover any area exceeding the maximum working area recommended by the manufacturer. Install flooring within the time limits recommended by the manufacturer. Remove dried adhesive and adhesive that has formed a fill and recoat the area.

e. Place flooring so that fields and patterns are centered on area. No tile or block shall be less than one-half size.

f. Before installation, lightly dampen face paper of flooring. Lay flooring with face paper damp. Re-dampen as necessary.

g. Lay flooring tone, level, even and with tightly aligned joints.

h. Cut flooring to fit building contours or edges.

i. Apply pressure to flooring to assure intimate contact and proper adhesion.

j. Provide expansion joints between floor tiles when necessary.

3.02 Sanding and Finishing

a. Sanding must be done by experienced sanders approved by the Architect.

Area must be sanded uniformly but thickness of parquet floor must not be reduced to less than 12.5 millimeters (1/2 inch).

b. Broom, clean and dry wood parquet floor then apply one coat of sealer.

c. Apply two coats of clear "Johnson" floor wax. Polish with dry clean cotton rugs.

3.03 Protection

a. Cover finished floor with heavy building paper until final acceptance of the project by the Owner.

SECTION 09 650 RESILIENT FLOORING

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete resilient flooring work.

b. See drawings and details for location and extent of work required.

1.02 Sample

a. Submit samples of tiles including all required moldings as per Article 10.02 of the UAP General Conditions.

1.03 Delivery and Storage

a. All resilient flooring materials shall be delivered and stored in undamaged condition as packaged by the manufacturer, with manufacturer's seals and labels intact.

1.04 Inspection

a. Surfaces to receive resilient flooring shall meet the minimum requirements established by the manufacturer of the flooring.

b. Surfaces to receive resilient flooring shall be examined and work shall not be started until defects have been corrected by the General Contractor.

c. Work shall not be started until work of other trades, which goes through resilient flooring, has been completed.

d. No resilient flooring shall be installed over floors that have been treated with chemical compounds without the written permission of the General Contractor.

1.05 Tolerances

a. Sub-floor surfaces shall not vary by more than 28 millimeters (1-1/8 inches) in any 3-meter (ten-foot) dimension. Neither shall they vary at a rate greater than 1.5 millimeters (1/16 inch) per running 30 centimeters (1 foot).

PART 2: PRODUCTS

2.01 Asphalt Tile - standard stock sizes are 225 mm x 225 mm (9 x 9 inches) by 3 mm (1/8 inch) thick, 300 mm x 300 mm x 4.75 mm (12 x 12 inches by 3/16 inch) thick. Only tile with complete pattern penetration are recommended for general commercial use.

2.02 Cork Tile - standard sizes are 150 mm x 150 mm (6"x6"), 225 mm x 225 mm (9" x 9") and 300 mm x 300 mm (12"x 12"). Standard thickness are 3 mm (1/8"); 4.75 mm (3/16" and 8 mm (5/16"); 6 mm 1/4") and 12.5 mm (1/2") thickness are also available.

2.03 Homogeneous Vinyl - standard sizes are 225 mm x 225 mm (9" x 9"), 300 mm x 300 mm (12" x 12"); other sizes are available on special order; standard thickness are 1.5 mm (1/16"), 2.4 mm (3/32") and 3 mm (1/8"); sheet vinyl are available in 914 mm x 1143 mm (36 x 45 inches).

2.04 Backed Resilient Vinyl - availabe in rolls of 1829 millimeters (72 inches) wide by 1066 mm x 30.48 meters (42 to 100 feet) long; standard tile size is 225 mm x 225 mm (9" x (") 300 mm x 300 mm (12"x12").

2.05 Linoleum - available in rolls 1829-millimeter (72-inch) wide by 1066 mm to 2286 mm (42 to 90 feet) long; thickness are 1.5 mm (1/16"), 3 mm (1/8"); standard tile sizes are 225 mm x 225 mm (9" x 9") and 300 mm x 300 mm (12 by 12 inches).

2.06 Rubber-standard size are 225 mm x 225 mm (9" x 9") and 300 mm x 300 mm (12" x 12") or 450 by 330 mm (18" x 13") and 914 mm c 914 mm (36" x 36") sizes. Standard thickness are 3 mm (1/8 inch) and 4.75 mm (3/16") gauge.

2.07 Vinyl Tiles - Standard sizes are 225 mm x 225 mm (9"x9"), 300 mm x 300 mm (12" x 12"). Thickness are 1.5 mm (1/16"), 2.4 mm (3/32") and 3 mm (1/8 inch).

2.08 Linoleum Paste - sulfite-liquor-based liquids used to install linoleum, rubber tiles, some vinyls, cork tile and lining felt. This is water based which remain forever water soluble; unsuitable for use on concrete slabs on ground or on suspended slabs which are not thoroughly dry, or around spillage.

2.09 Asphaltic Adhesive - can be used on concrete both above and below grade and or suspended wood floors with or without lining felt.

2.10 Epoxy Adhesive - permit installation of rubber and solid vinyl tiles on concrete in contact with the earth below grade (in absence of hydrostatic pressure).

PART 3: EXECUTION

3.01 Application of Adhesive

a. The adhesive manufacturer's directions for mixing shall be followed. The surface shall be covered evenly with adhesive.

b. The area covered by one application of adhesive shall not exceed the maximum working area recommended by the manufacturer. Resilient flooring shall be installed within the time limits recommended by the manufacturer. If adhesive films over or dries, it shall be removed and the area shall be recoated.

3.02 Installation of Resilient Flooring

a. Resilient flooring shall be placed so that fields patterns center on area. No tile shall be less than 1/2 size.

b. Resilient flooring shall be laid true, level and even with tight, aligned points. Resilient flooring shall be cut to and around all perimeter cabinets and fixtures.

c. Flooring shall be rolled in accordance with the manufacturer's directions to assure intimate contact and proper adhesion.

3.03 Installation of Top-Set Cove Base : Firmly cement base to dry wall. Form internal and external corners and end stop from preformed units. Scribe base accurately to trim and plinths.

3.04 Installation of Flash Cove Base

a. For concrete and plaster walls not having wood grounds, binding strip corners and end stops shall be insulated with adhesive or as described in paragraph b or c.

b. In concrete walls, the binding strip shall be nailed to the studs.

c. On wood-stud walls, the binding strip shall be nailed on the studs.

d. Cove base fillet strip shall be installed with adhesive at intersection of floor or wall.

e. Flash cove base shall be fitted to binding strips, stops, and to flooring and installed with adhesive.

SECTION 09 900 PAINTING

PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete painting and varnishing work.

b. See drawings for location, quantity and extent of surfaces to receive paints.

1.02 Delivery of Materials

a. Deliver at jobsite in original containers with label intact and seals unbroken.

b. Submit to the Owner the manufacturer's certificate of origin and quality of paints including quantity purchased.

1.03 Qualification of Painting Contractor

a. Painting Contractor shall be approved by the Owner and the Architect.

1.04 Test Panels

a. Sample panels of selected color or shade shall be prepared on 30 centimeters x 30 centimeters (1' x 1') plywood panels for approval of the Architect.

1.05 Protection

a. Provide all drop cloth and other coverings requisite to protection of floors, walls, aluminum, glass finishes and other works.

PART 2: PRODUCTS

2.01 Paint Materials

a. Conform to requirements of the standard specifications of the Standardization Committee on Supplies and the Institute of Science and Technology, Manila.

b. Tinting colors and thinning materials must be the same brand as the paint specified.

2.02 Schedule

EXTERIOR

a.	Exterior concrete painted surface	-	First coat- Clear Penetration Primer Second and Third Coat - as stated in summary
b.	Exterior concrete ferrous	-	prime with epoxy enamel primer
c.	Exterior metal galvanized	-	prime with zinc chromate primer
d.	Exterior wood painted	-	3 coats oil based paint
e.	Exterior wood varnished	-	water repellant varnish

INTERIOR

a.	Interior concrete or masonry painted	- 2 coats acrylic based masonry paint
b.	Interior concrete exposed aggregate finish	- no paint
c.	Interior metal ferrous	- prime with epoxy enamel primer
d.	Interior woodwork sea mist	- 3 coats 3 parts thinner, 1 part lacquer paint - apply wood filler
e.	Interior woodwork	- 1st coat: one part sanding sealer to one part solvent 2nd coat: 2/3 sanding sealer to 1/3 solvent 3rd coat: same as 2nd coat 4th coat: pure solvent
f.	Interior woodwork painted	- 3 coats oil-based paint

PART 3: EXECUTION

3.01 Preparation of Surfaces

	PREPARATION	TREATMENT	SURFACE CORRECTION
CONCRETE AND MASONRY	Remove all loose dirt, excess mortar or any film left from concrete curing oil, grease, or compound.	Treat with one kilo of zinc sulfate crystals to 4.5 liters of water (1 gal.).	Putty surface with patching compound.
WOOD WORK	Thoroughly sand to remove excessive roughness, loose edges, slivers and splinters then brush.	Knots, snappy streaks and stain from wood preservatives shall be given a thin coat of Shellac.	Fill all cracks, nail holes and other surface defects with patching paste or putty.
METAL WORK	Remove rust, grease or other foreign matter.	Wash with metal treatment solution.	Scrape, wirebrush, sandblast or clean with flame.

3.02 WORKMANSHIP

a. 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.

b. Thoroughly stir paint to keep pigment evenly in suspension when paint is being applied.

c. All coats shall be thoroughly dry before the succeeding coat is applied. Allow at least 24 hours between application of coats.

d. If 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 the paint without extra cost to the Owner.

e. If surface is not in proper condition to receive paint, the Architect shall be notified immediately. Work on the questioned portion shall not be commenced until receipt of order to proceed from the Architect.

INTERIOR

a. Interior concrete or masonry painted - 2 coats acrylic based masonry paint
b. Interior concrete exposed aggregate finish - no paint
c. Interior metal ferrous - prime with epoxy enamel primer
d. Interior woodwork sea mist - 3 coats 3 parts thinner, 1 part lacquer paint
- apply wood filler
e. Interior woodwork - 1st coat: one part sanding sealer to one part solvent
2nd coat: 2/3 sanding sealer to 1/3 solvent
3rd coat: same as 2nd coat
4th coat: pure solvent
f. Interior woodwork painted - 3 coats oil-based paint

PART 3: EXECUTION

3.01 Preparation of Surfaces

	PREPARATION	TREATMENT	SURFACE CORRECTION
CONCRETE AND MASONRY	Remove all loose dirt, excess mortar or any film left from concrete curing oil, grease, or compound.	Treat with one kilo of zinc sulfate crystals to 4.5 liters of water (1 gal.).	Putty surface with patching compound.
WOOD WORK	Thoroughly sand to remove excessive roughness, loose edges, slivers and splinters then brush.	Knots, snappy streaks and stain from wood preservatives shall be given a thin coat of Shellac.	Fill all cracks, nail holes and other surface defects with patching paste or putty.
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e. If surface is not in proper condition to receive paint, the Architect shall be notified immediately. Work on the questioned portion shall not be commenced until receipt of order to proceed from the Architect.

f. Hardware, hardware accessories, plates, lighting fixtures an other similar items shall be removed or otherwise protected during the painting operations and re-installed after completion of work.

3.03 Procedure for Sea-Mist Finish

a. Depress wood grain by steel brush and sand surface lightly.

b. Apply sanding sealer.

c. Apply two coats of industrial lacquer paint.

d. Spray last coat mixed with lacquer.

e. Apply pastewood filler thinned with turpentine or paint thinner to wood surface.

f. Wipe off pastewood filler immediately.

g. Spray flat or gloss lacquer whichever is specified.

3.04 Procedure for Ducco Finish

a. Sand surface thoroughly.

b. Apply primer surfacer white or gray by brush or spray.

c. Apply lacquer spot putty in thin coat. Allow each coat to become thoroughly dry before applying next coat.

d. Apply primer surfacer. Allow 2 hours drying time before applying the next coat.

e. Apply 1-coat of flat tone semi-gloss enamel as per Architect's color scheme.

SECTION 09 951 VINYL/FABRIC WALL COVERING
PART 1: GENERAL

1.01 Scope

a. Furnish materials and equipment and perform labor required to complete vinyl/fabric wall covering work.

b. See drawings and details for location and extent of work required.

1.02 Samples

a. Submit samples for each color and pattern specified as per Article 10.02 of the UAP General Conditions.

1.03 Inspection

a. Surfaces to receive wall covering shall meet the minimum requirements established by the manufacturer if the wall covering.

b. Plaster surfaces shall be dry and sound, free from surface chalk.

c. Concrete block walls shall be leveled to tolerances

d. Gypsum board walls and plywood panel walls shall have all nails and screws recessed, with all joints and nails or screw depressions taped and sparkled, sanded and primed with one coat of vinyl sealer.

e. Painted surfaces shall be in sound conditions and shall not contain water-sensitive materials or pigments that bleed in water or oil.

f. Surfaces to receive wall coverings shall be examined and work shall not be started until work of other trades that pass through wall covering has been completed.

1.04 Tolerances: Wall surfaces shall not vary more than 3 millimeters (1/8 inch) in any 3-meter (10-foot) dimension: neither shall they vary at a rate greater than 1.5 millimeters per 30 centimeters (1/16 inch per running foot).

PART 2: PRODUCTS

2.01 Adhesives: Heavy-bodied water soluble paste shall be used as specified by manufacturers of vinyl-coated wall coverings. Adhesives should contain a suitable mildew inhibitor.

2.02 Vinyl-Coated Wall Covering

a. Type I - Light Duty: Wall coverings having a minimum total weight of 0.24 kilograms/square meter (7 ounces per square yard) and intended for use as a maintenance-free covering for areas subjected to light abrasions or wear, and for ceilings.
b. Type II - Medium Duty: Wall coverings having a minimum weight of 0.44 kilograms/square meter (13 ounces per square yard) and intended for general use in areas where there is average traffic and scuffing.

c. Type III - Heavy Duty: Wall coverings having a minimum weight of 0.75 kilograms/square meter (22 ounces per square yard) and intended for use only for walls and/or wainscoating protection in areas exposed to damage by movable equipment or to abusive condition

d. Class 1 - Regular Finish: Wall covering having a support backing that is ÎÎÔ chemically treated to prevent mildew.

e. Class 2 - Mildew Resistant: Wall covering having a support backing chemically treated to prevent mildew.

PART 3: EXECUTION

3.01 Application of Adhesive: Follow the adhesive manufacturer's direction for mixing and applying adhesive.

3.02 Installation of Wall Coverings

a. Use fabric panels in exact order as they are cut from rolls; use rolls in consecutive order. Apply paste to the fabric back using a roller or paste brush.

b. Trim deeply textured patterns, or patterns on which strip must be matched on the work table.

c. Hang smooth, non-match patterns by pasting strips in the wall, overlapping the edges, and "double cutting" through both thicknesses. Use a 1 millimeter (0.40) or 1.5 millimeter (0.60") zinc or aluminum strip between wall and material when cutting, to avoid gouging the wall.

d. Use stiff-bristle brush or flexible broad knife to eliminate air pockets and to secure the wall covering to the wall surface.

e. Fill in spaces above and below windows, above doors and similar areas in sequence from the roll, not later than when all full-length pieces have been installed.

f. Remove excess paste from each seam as it is made before proceeding to next seam. Use sponge dampened with plain water. Wipe seam clean with dry cloth towel.

g. Examine each seam carefully when completed. Trim additional selvage where required to achieve a color and pattern match at seam.

h. Remove hardware, accessories, plates and similar items to allow fabric to be installed. Upon completion of each square, replace the above items.

i. The installed fabric shall be secure, smooth, clean without wrinkles, gaps or overlaps.

j. Wrap wall covering 15 centimeters (6 inches) beyond inside and outside corners; cutting at corners will not be acceptable; nor will horizontal seams be accepted.

k. Where applicable, install wall covering before the installation of plumbing, casings, bases, cabinets, etc.

l. Except on match patterns, hang panels by reversing alternate strips.