

SECTION 07120

FLUID APPLIED WATERPROOFING

PART 1 GENERAL

1.01 SUMMARY

A. Related Sections:

1. 03300 - Cast-In-Place Concrete.
2. 09200 - Metal Studs, Metal Lath, Suspension Ceilings, Plaster, and Stucco.
3. 09310 - Ceramic Tile.

1.02 SUBMITTALS

A. Submit properly identified manufacturer's literature and technical data before starting work.

1. Submit an affidavit from manufacturer approving applicator before installation.
 - a. Applicator shall provide evidence of 5 years satisfactory application experience of the system specified.
2. Submit material product data, material specifications, and application manual from manufacturer describing completely the preparation of surfaces and application of specified materials.

1.03 QUALITY ASSURANCE

A. Waterproofing Applicator:

1. Manufacturer trained and manufacturer approved for waterproofing system proposed.
2. Minimum of 5 years experience in the application of fluid applied waterproofing.

B. Waterproofing Manufacturer's Factory Trained Representative:

1. Inspect and approve surfaces to receive waterproofing before start of the work.
2. Be present and observe start of application of waterproofing.
3. Periodically inspect the work and inspect completed waterproofing work.

4. Report unsatisfactory surfaces to receive waterproofing and unsatisfactory materials and construction to Contractor and A/E.
5. Roofing at covered walkways and shelters shall have a minimum 2 part coating and fabric.

1.04 PROJECT CONDITIONS

A. Environment Requirements:

1. Surface Temperature: Between 40 and 110 degrees F. during application.
2. Weather: Clear with no rain during application or anticipated within 12 hours.

1.05 WARRANTY

A. Furnish warranty covering watertight integrity or waterproofing for 5 years from date of Substantial Completion.

1. Warranty shall provide for prompt repair of leaks, ruptures, blisters, and other imperfections at no cost to the Board.
2. Warranty shall be signed by contractor and waterproofing applicator.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fluid Applied Waterproofing:

1. Applied Polymers of America, Inc.: Ureloid One Part Membrane Adhesive, Self-Leveling Grade and Non-Sag Grade.
2. Anti-Hydro Waterproofing Co.: A-H Seamless Membrane, 2H and 2V.
3. Gates Engineering Co.: Gacoflex UWM-28.
4. 3M Company: Scotch-Clad Deck Coating System M.
5. Sonneborn Building Products Division Contech, Inc.: Hydrocide Liquid Membrane No.5000 in roller grade and trowel grade.
6. Toch/Carboline Co.: Thio-Deck Membrane.
7. Tremco Manufacturing Co.: Tremproof No.60.

B. Protection Board:

1. Celotex Corp.: Elastiboard.

2. J&P Petroleum Products, Inc.: Tex-Mastic Backerboard.
3. W.R. Meadows: PC-2 Protection Course.
4. Tremco Mfg. Co.: Tremboard.

2.02 MATERIALS

- A. Fluid Applied Waterproofing: One-component moisture-curing or two-component urethane type waterproofing suitable for covered non-traffic below grade locations.
- B. Primer: As recommended by waterproofing manufacturer for each type of surface encountered.
- C. Protection Board: 1/8" thick asphalt composition board.
- D. Joint Filler: Closed-cell, round expanded polyethylene foam.
- E. Sealant: As recommended by waterproofing manufacturer for compatibility with waterproofing system.
- F. Materials: Provide 1/16" thick neoprene sheet material, adhesives or trowel grade urethane waterproofing, woven uncoated fiberglass mesh flashing reinforcement or non-woven polyester fabric, thinners and application equipment necessary to complete work of this section as recommended by the waterproofing manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Condition of Concrete Surfaces:
 1. Horizontal: Trowel finished without sharp ridges, projections, voids, and concrete or mortar droppings.
 2. Vertical: Smooth, formed without sharp ridges, projections, voids, and concrete or mortar droppings.
- B. Condition of Concrete Surfaces to Receive Waterproofing:
 1. Water cured or cured with silicate type chemical curing compound compatible with waterproofing.
 - a. Resin type curing compounds are not allowed.
 2. Surfaces shall be dry and acceptable to waterproofing applicator.
 3. Application of waterproofing will be considered as

acceptance of surfaces to receive waterproofing.

3.02 PREPARATION

A. Surface Preparation:

1. After concrete substrate has cured 14 days with a maximum of 8 percent moisture content, and with projections, voids, concrete, and mortar droppings corrected, thoroughly clean surfaces immediately before installation of waterproofing using compressed air, vacuum, or other methods.
2. Remove oil, grease, form oils, and resin type curing compounds with sandblasting or a commercial grade alkaline cleaner or solvent. Thoroughly rinse and dry.
3. Concrete surface shall be dry and pass a 4-hour rubber mat test with no condensation before application of waterproofing system.
 - a. Test will not be required on vertical walls open on both sides.

3.03 INSTALLATION

A. Joints, Cracks, and Depressions:

1. Clean expansion, control, and construction joints by cutting back a minimum of 1 inch.
 - a. Install polyethylene foam joint backing rod compressed 50 percent providing a channel below level of slab of depth equal to 1/2 width and with 1/2" depth maximum.
 - b. Fill joint to surface level with sealant, apply bond breaker, and cover with nonflowing type waterproofing, preformed neoprene, or urethane sheet to a width of 3 inches on each side of joint as specified.
2. Rout or saw cut cracks exceeding 1/16" in width and fill with sealant.
 - a. Treat cracks by cleaning thoroughly and applying 60 mils of waterproofing extending 3 inches from each side of crack.
3. Prepare concrete substrates by filling voids, holes, and depressions with epoxy grout or bonding agent and cement-sand grout as recommended by waterproofing manufacturer.

4. At horizontal, vertical, and corner expansion joints, provide joint filler and sealant application compatible with waterproofing system.
 - a. Bridge joints using preformed neoprene or urethane membrane or with 60 mil coating of fiberglass mesh reinforced waterproofing or strip of neoprene sheet as standard with manufacturer, applied over bond breaker on expansion joint.
 - b. Extend waterproofing a minimum of 6 inches from each side of joint, adhered to deck and vertical surfaces.

B. Vertical Protrusions and Drains:

1. Clean exposed metal surfaces such as pipes, sleeves, drains, bases, and ducts by removing paint, rust, scale, or any foreign matter.
 - a. Metal Preparation and Priming: According to manufacturer's recommendations and, if required, prime coat metal surfaces a maximum of 8 hours before membrane application with waterproofing manufacturer's metal primer.
2. Apply a 60-mil waterproofing coating to entire surface, extending waterproofing up to bottom of sealant in top surfaces of deck areas and extend membrane out on or up vertical surfaces 4 inches on projections.
3. Extend waterproofing over flanges of drains without sealing weep holes.

C. Waterproofing:

1. Two Component Type Waterproofing: Mix materials according to manufacturer's published instructions without incorporating air bubbles.
 - a. Do not thin or dilute mixture.
 - b. Conform to recommended "Pot-Life" requirements.
2. For single component type waterproofing, use as furnished without dilution.
3. Apply waterproofing uniformly on surfaces to produce 60 mils (dry film) thickness using a trowel, calibrated notched squeegee or roller equipment approved by the manufacturer.
 - a. 60-mil thickness is exclusive of previously applied waterproofing materials at cracks and joints.

4. Apply nonflowing type waterproofing material wherever a vertical surface exists, forming a continuous flashing and a 1/2" x 1/2" triangular cant, or other size recommended by waterproofing manufacturer.
 - a. Extend waterproofing vertically up to bottom of sealant in deck top surfaces unless otherwise indicated.
5. Apply waterproofing under exterior quarry tile, paver tile, or concrete toppings above first floor.
6. At waterproofed basement floors, apply waterproofing on top of exterior wall foundations, interior column and wall foundations, mat type foundations, and working slabs.
7. Apply waterproofing to walls on earth side of room walls remaining earth fill.
 - a. Extend waterproofing from foundation up to underside of floor resting on earth fill.
8. Apply waterproofing on exterior of elevator pit walls retaining earth fill from top of foundation up to finished floor on fill and from top of foundation up to within 4 inches of finished grade on exterior of building.
9. Apply waterproofing on exterior of below grade basement walls from top of foundation up to within 4 inches of finish exterior finish grade.
10. In planting bins within basement, apply waterproofing on interior bottoms and on interior sides from bottom to underside of ground floor slab.
11. Extend waterproofing material 6 inches minimum out on top of foundations.
12. At below grade rock anchors, pipe and conduit penetrations, extend membrane out on anchors, pipes and conduits 6 inches minimum to seal penetrations watertight.
13. Apply waterproofing to mechanical equipment room structural floor slabs below "floating slabs".
 - a. Extend waterproofing on walls, curbs, pipes, and conduits up to top of the floating slab.
14. Tie-in to existing roofs require special detailing such as an area divider to properly seal both roof systems and maintain warranties.

D. Protection Board:

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1. Do not apply protection board to deck waterproofing until successful testing has been completed.
 2. Apply protection board to horizontal surfaces and vertical surfaces of waterproofing. Adhere with spots of waterproofing.
 3. On vertical surfaces where mechanical attachment is necessary to prevent protection board from sliding down, apply additional heavy trowel coat of fluid applied waterproofing where fasteners penetrate waterproofing.
 - a. Use galvanized masonry nails for attachment of protection board.
 4. Where protection board is to be applied to curved inside surfaces of planting bins, preform protection board using heat over a curved form.
- E. Alternate Protection for Vertical Surfaces of Fluid Applied Waterproofing (Contractor's Option):
1. In place of protection board, apply splatter coat of 1:3 mixture of cement and sand mortar, by hopper gun to final coat of waterproofing before coating cures.
 2. After waterproofing and mortar splatter coat have set, apply 3/8" thick coat of Portland cement plaster by gun or by trowel.
 - a. Finish surface smoothly without damage to waterproofing.
 - b. Refer to Section 09220, Metal Studs, Metal Lath, Suspension Ceilings, Plaster, and Stucco.

3.04 TESTING

- A. Do not flood test waterproofing sooner than 36-hours following completion of application.
1. Flood test each horizontal or deck area for 48 hours minimum using a minimum of 2 inches of standing water.
 2. Plug drains and place barriers to contain water.
 3. Notify the manufacturer's representative before testing.
- B. Patching: Repair leaks that develop and retest.
1. Patch voids, bubbles, depressions, imperfections, or tears according to manufacturers published recommendations.

END OF SECTION

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