REFLECTING PONDS

SECTION 07161

ACRYLIC MODIFIED (FLEXIBLE) CEMENT WATERPROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish all labor, materials, tools and equipment as necessary to perform Acrylic Latex Modified Cement Waterproofing on new and existing structures as shown on drawings and as specified in this section.

B. Related Sections:
1. See section 03300 - Cast-in-Place Concrete
2. See section ……

1.2 REFERENCES

A. ASTM C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.

B. ASTM C 348 - Standard Test Method for Flexural Strength of Hydraulic Cement Mortars.

C. ASTM C 321 - Standard Test Method for Bond Strength of Chemical-Resistant Mortars.

D. ASTM E 96 - Standard Test Method for Water Vapor Transmission of Materials.

E. COE CRD-C 48 - Method of Test for Water Permeability of Concrete; U.S. Army Corps of Engineers or similar.

1.3 SUBMITTALS

A. General:
Submit manufacturer's certification that proposed materials, details and systems as indicated and specified fully comply with manufacturer's details and specifications. If any portion of Contract Documents do not conform to manufacturer's standard recommendations, submit notification of portions of design that are at variance with manufacturer's specifications.

B. Product Data:
1. Submit manufacturer's literature and installation instructions for each product.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications:
1. Company specializing in marketing or manufacturing products specified in this Section with minimum 10 years documented experience.

B. Installer Qualifications:
1. Acceptable to manufacturer with documented experience on at least 5 projects of similar nature in past 5 years and/or training provided by the product manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver and store in a dry area between 40°F (5°C) and 90°F (32°C). Handle and protect from freezing and direct sun light in accordance with manufacturer's instructions.

B. Deliver materials in manufacturer's unopened containers, fully identified with brand, type, grade, class and all other qualifying information. Provide Material Safety Data Sheets for each product.

C. Take necessary precautions to keep products clean, dry and free of damage.

1.6 SYSTEM REQUIREMENTS

A. Coordinate waterproofing installation with other trades.

B. Provide materials and accessories in timely manner so as not to delay Work.

1.7 PROJECT CONDITIONS

A. Maintain surfaces to be waterproofed and surrounding air temperature at not less than 40°F (5°C). Apply only when temperatures are steady or rising.

B. Do not apply materials to frozen or frost-filled surfaces.

C. Exercise caution when temperatures exceed 90°F (32°C).

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved Manufacturers: AQUAFIN, Inc. 505 Blue Ball Road, #160. Elkton, MD, 21921. Phone (800) 394-1410, or (410) 392-2300, Fax (410) 392-2324; e-mail info@aquafin.net.

B. Requests for substitutions will be considered only if submitted to the architect/engineer in writing and must include substantiation of product performance, 10 days prior to the original bid date.

2.2 MATERIALS

A. Waterproofing Material - Acrylic Modified Cement Waterproofing: Cementitious, two-component, acrylic emulsion based, highly flexible, crack bridging waterproof membrane barrier against positive water pressure, with the following characteristics:

1. Product:	AQUAFIN-2K/M
2. Color:	***…….. as per color chart***
3. Dry Component-A:	Precise blend of cementitious material
4. Liquid Component-B:	White acrylic emulsion and admixtures
5. Working Time:	Approximately 45 minutes
6. Shore A Hardness:	> 90
7. Bond/Adhesion: (ASTM C-321)	215 psi (1.5 MPa) @ 28 days
8. Tear Resistance:	190 psi (1.3 MPa) at 68°F (20°C)
9. Elongation: (%)	60 (gray); 40 (white) at 68°F (20°C)
10. Elongation: (mils)	40 (gray); 25 (white)
11. Crack bridging capacity: (inch)	1/16 (gray) (1.5 mm)
12. Vapor Permeability: (US Perms)	1.2 (ASTM E-96)

13. Waterproofing:(CRD C 48-92)		Withstands 200 psi = 460 feet (14 bar = 140 m) hydrostatic pressure (positive side) at 3/32" (2.4 mm) thickness.

2.3 ACCESSORY MATERIALS

****

Specifier, please choose applicable items (A., B., C. or none).

****

A. Patching Compound: Pre-blended, cementitious waterproofing and repair mortar recommended or approved by waterproofing manufacturer for patching honeycombs, installing coves, etc.

1.	Product:	AQUAFIN MORTAR-LN
2.	Color:	Gray
3.	Aggregate:	Powder
4.	Compressive Strength: (ASTM C-109)	6000 psi (41.3 MPa) @ 28 days
5.	Flexural Strength: (ASTM C-348)	1160 psi (8.0 MPa) @ 28 days

B. Crack and joint sealing tape: Elastomeric, tear resistant, breathable waterproofing tape.

1.	Product:	AQUAFIN JOINT SEALING TAPE-2000
2.	Thickness:	approx. 14 mils (0.35 mm)
3.	Width:	4.75" (120 mm) or 8" (200 mm)
4.	Elongation:	60%
5.	Tear Strength:	725 psi (5.0 MPa)

C. Reinforcement mesh: Polypropylene non-woven fleece, reinforces tear resistance of waterproofing material, for zones posed to cracking.

1.	Product:		AQUAFIN-2K-FABRIC
2.	Thickness:		10 mils (0.25 mm)
3.	Tear Strength:	longitudinal	24 lbs (10.9 kg)
		diagonal	28 lbs (12.7 kg)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine all construction substrates and conditions under which waterproofing materials are to be installed. Do not proceed with the waterproofing application until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Protect adjacent surfaces not designated to receive waterproofing.

B. Substrate preparation:

1. Remove oil, grease, dirt, loose particles, remains of form oils, water repellents, rust or other coatings by high-pressure water blasting (>3000 psi), wet or dry sand blasting, or other mechanical means to produce surfaces suitable for application of waterproofing.
2. Follow manufacturer's instructions to clean and prepare surfaces and seal cracks and joints.
3. Voids in concrete substrates: 1/4-inch (6 mm) diameter and larger, pre-treat with a cementitious mortar. Less than 1/4-inch (6 mm) diameter can be filled with a scratch coat of two-component waterproofing material.

C. Rinse surfaces to be waterproofed (excluding drywall or similar) with clean water to saturated surface dry (SSD) condition, with no standing water on horizontal surfaces.

3.3 INSTALLATION

A. Mix two-component waterproofing material in proportions recommended by manufacturer.

B. Taping:

1. Apply two-component waterproofing material by brush in a six to seven inch (15 – 18 cm) wide strip coat centered over all joints, cracks, penetrations and changes of plane to be taped.

2. While this coat is still wet, unroll joint sealing tape into the coating and apply a coat of two-component waterproofing material over the tape, smoothing out wrinkles and fish mouths.

C. Positive Side Waterproofing:

Apply two-component waterproofing material in quantities as per manufacturer's specifications and recommendations:

1. Apply at 60 mils or 1/16" (1.5 mm) total thickness for water levels up to 2-feet (0.60 m).

2. Apply at 90 mils (2.4 mm) total thickness for water depth greater than 2-feet (>0.60 m).

D. Application considerations:

1. Apply, using stainless steel trowel, tampico brush, short nap roller, or appropriate compressed-air spray equipment.

2. If needed, such as in zones posed to movement or cracking, plaza decks, the waterproofing material can be additionally reinforced with a reinforcing mesh (supplied by waterproofing manufacturer), embedded between two waterproofing layers.

3. Apply only when surface and ambient temperatures are 40^{o}F (5^{o}C) and rising. At high temperatures (i.e. 86^{o}F (30^{o}C) and above) protect application from direct sun and wind to prevent premature surface drying and shrinkage cracks. Apply material in two coats minimum.

4. Application thickness should not exceed 1/8-inch (120 mils (3 mm)).

5. Do not bridge cracks greater than 1/16-inch (1.5 mm).

6. Bridge dynamic cracks or joints with elastomeric joint sealing tape, as supplied by waterproofing manufacturer.

7. Do not overcoat waterproofing material with solvent-based materials.

8. Prime and protect alkali sensitive metals such as copper, aluminum, galvanized or zinc treated metal before over-coating with waterproofing material. Follow manufacturer's recommendations for primer material.

3.4 CURING

A. Follow manufacturer's general instructions for curing and hardening of waterproofing material. Do not use water for curing. Waterproofing material is self-curing.

B. Protect surfaces from rain, frost and premature dehydration.

3.5 ACCEPTANCE

A. Remove left over materials and any foreign material resulting from the work from the site.

B. Clean adjacent surfaces and materials.

END OF SECTION

Project: ..... (01/05)