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**NOTE TO EDITOR:**

**THESE SPECIFICATIONS APPLY TO TILED CAST-IN-PLACE CONCRETE SWIMMING POOLS, RECEIVING A FLEXIBLE, CRACK BRIDGING, CEMENTITIOUS WATERPROOFING, COVERED BY A BOND COAT AND CERAMIC TILES.**

**CONTACT MANUFACTURER FOR ASSISTANCE OR QUESTIONS AT TOLL FREE 1-866-AQUAFIN (410-392-2300); FAX (410)392-2324.**

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TILED, CAST-IN-PLACE CONCRETE SWIMMING POOLS

SECTION 13156

FLEXIBLE CEMENTITIOUS WATERPROOF MEMBRANE

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Cementitious Waterproof Lining to internal concrete walls and floor of cast-in-place swimming pool, covered by a bond coat and ceramic tiles, as shown on drawings and as specified in this section.
- B. Related Sections:
  - 1. See section 03300 - Cast-in-Place Concrete
  - 2. See section ..... - Thin set tile mortar and setting ceramic tiles

1.2 REFERENCES

- A. ASTM C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
- B. ASTM C 321 - Standard Test Method for Bond Strength of Chemical Resistant Mortars.
- C. ASTM C 348 - Standard Test Method for Flexural Strength of Hydraulic Cement Mortars.
- D. COE CRD-C 48 - Method of Test for Water Permeability of Concrete; U.S. Army Corps of Engineers.

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 descriptive literature and product specifications for each product.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
  - 1. Company specializing in manufacturing and/or marketing Products specified in this Section with minimum 10 years documented experience.
- B. Installer Qualifications:
  - 1. Acceptable to manufacturer with documented experience on at least 2 projects of similar nature in past 2 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 WARRANTY

- A. Comply with provisions of Section 01780.

1.7 SYSTEM REQUIREMENTS

- A. Coordinate waterproofing/lining work with work of other trades.
- B. Provide materials and accessories in timely manner so as not to delay the Work.

1.8 PROJECT CONDITIONS

- A. Maintain surfaces to be waterproofed/lined and surrounding air temperature at not less than 40°F (5°C) for at least 48 hours before, during and after application of waterproofing.
- B. Do not apply materials to frozen or frost-filled surfaces.
- C. Exercise caution when temperatures exceed 86°F (30°C). Contact manufacturer for guidance.

**PART 2 - PRODUCTS**

2.1 MANUFACTURERS

- 1. 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](mailto:info@aquafin.net).
- 2. Requests for substitutions will be considered only if submitted to the architect/engineer in writing and must include substantiation of product performance.

2.2 MATERIALS

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

1. Product:	AQUAFIN-2K/M (Gray)
2. Dry Component-A:	Precise blend of cementitious material
3. Liquid Component-B:	White acrylic emulsion and admixtures
4. Working Time:	Approximately 45 minutes
5. Bond/Adhesion: (ASTM C-321)	215 psi (1.5 MPa) @ 28 days
6. Tear Resistance:	190 psi (1.3 MPa)
7. Elongation - %:	60 % at 68°F (20°C) (Gray)
8. Vapor Permeability: (US Perms)	1.2
9. Waterproofing:(CRD C-48-73)	0 leakage at 100 psi (0.7 MPa) or 234 ft. (71 m) hydrostatic head pressure (positive side).

2.3 ACCESSORY MATERIALS

- A. Patching Compound: Pre-blended, cementitious repair mortar recommended or approved by waterproofing manufacturer for patching, honeycombs, seal strips (coves, reglets), etc.
 

1. Product:	AQUAFIN-LN
2. Color:	Gray
3. Aggregate:	Powder

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|----|------------------------------------|---------------------|
| 4. | Compressive Strength: (ASTM C-109) | >5000 psi (28 days) |
| 5. | Flexural Strength: (ASTM C-348)    | >500 psi (28 days)  |
- B. Expansion joint and crack sealing tape: Elastomeric, tear resistant, breathable waterproofing tape.
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|----|-------------|----------------------|-------------------------------------|
| 1. | Product:    | for cracks           | JOINT SEALING TAPE-2000             |
|    |             | For expansion Joints | JOINT SEALING TAPE-2000-S           |
| 2. | Width:      |                      | 8" (200 mm)                         |
| 3. | Elongation: |                      | 60% (TAPE-2000); 600% (TAPE-2000-S) |

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and adjoining construction, and conditions under which Work is to be installed. Do not proceed with Work 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), 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, joints and voids.
- C. Rinse surfaces to be waterproofed with clean water to saturated surface dry (SSD) condition, with no standing water on horizontal surfaces.

#### 3.3 INSTALLATION

- A. Mix waterproofing material in proportions recommended by manufacturer.
- B. Apply waterproofing material in quantities as per manufacturer's specifications and recommendations.
1. Seal expansion joints with elastomeric joint sealing tape, as supplied by waterproofing manufacturer.
  2. Apply 1<sup>st</sup> coat at 1/16-inch (60 mils [1.5 mm]) thickness.
  3. Apply 2<sup>nd</sup> coat at 1/32-inch (32 mils [0.9 mm]) thickness as soon as the 1<sup>st</sup> coat has sufficiently hardened or wait until next day.
  4. Apply, using stainless steel trowel, tampico brush, or appropriate compressed-air spray equipment.

#### 3.4 CURING

- A. Follow manufacturer's general instructions for curing and hardening of waterproofing material.

#### 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)