SECTION 09 96 53

WATERPROOF COATINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Masonry Weatherproof Coating: Water based high-build elastomeric, 100% acrylic waterproof coating
   2. Protection of weeps and drainage vents during coating application.

B. Related Sections:
   1. Section 04 21 13 - Brick Masonry.

1.2 REFERENCES

A. American Society for Testing & Materials (ASTM):
   1. ASTM D968 - Abrasion Resistance of Organic Coatings by the Falling Abrasive Tester.
   2. ASTM D822 - Operating Light and Water Exposure Apparatus (Carbon Arc Type) for Testing Paint, Varnish, Lacquer, and Related Products.
   3. ASTM G26 - Operating Light-Exposure Apparatus (Carbon Arc Type) With and Without Water for Exposure of Nonmetallic Materials.

1.3 QUALITY ASSURANCE

A. Applicator Qualifications: Properly trained and approved by the weatherproofing system manufacturer and have authorization to offer specified warranty. Submit installer letter of certification, signed by Technical Representative of system manufacturer.

B. Field Sample:
   1. Apply masonry weatherproofing system to sample brick panel.
   2. Reflect proposed color, texture, and workmanship.
   3. Obtain acceptance of completed section from Architect before beginning work.

C. Pre-installation Conference:
   1. Contractor shall arrange meeting no less than seven days prior to starting work.
   2. Attendance:
      a. Construction Manager
      b. Coating Contractor
      c. Architect/Owner's Representative
      d. Coating Manufacturer Representative/Distributor.
   3. Agenda:
      a. Substrate condition.
      b. Sequence and method of application of coating system.

1.4 SUBMITTALS

A. Comply with Section 01 33 00.

1.5 PROJECT CONDITIONS

A. Environmental Requirements:
   1. Do not apply on frozen or frost-filled surfaces.
   2. Do not apply if temperature is below 40 degrees F. or expected to fall below 40 degrees F within 24 hours.
   3. Do not apply material if rain/ precipitation is expected within 24 hours of application.
   4. Do not apply material to sloped (less than 60 degrees) or horizontal surfaces.
   5. Protect material from freezing.
   6. Protect surfaces from rapid drying where windy, hot, and dry conditions exist.
   7. Avoid applying material during rapid and extreme changes in temperature to prevent thermal shock cracks during the curing process.

1.6 WARRANTY

A. Provide five year material and labor warranty to cover:
   1. Waterproofing above grade.
   2. Bonding.
   3. Weathering.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide coatings of the following manufacturers:
   1. Master Builder Solutions by BASF (formerly Thoro System Products)

B. Substitutions: Must be submitted to the Architect for review prior to bidding.

2.2 HIGH BUILD, WATER-BASED, ELASTOMERIC, 100% ACRYLIC WATERPROOF COATING

A. Master Builder Solutions, by BASF: (formerly Thoro Systems)
   1. Master Protect EL 750 Smooth (formerly Thorolastic)
      a. Density, ASTM D1475: 11.2 to 12.2 lbs per gal (1.34 to 1.46 kg/L).

      b. Solids Content, white, ASTM D5201:
         i. By Weight: 64.2 percent.
         ii. By Volume: 50 percent.
      c. Viscosity, ASTM D562: 127 to 135 KU.
      d. VOC Content, ASTM D3960: 0.32 to 0.42 lbs per gal (38 to 50 g/L), less water and exempt solvents.

B. Performance Requirements: MasterProtect EL 750 (formerly Thorolastic Smooth), applied at 16 mils DFT:
   1. Ultimate Elongation, ASTM D412: 344 percent.
   2. Elongation Recovery, ASTM D412:
      a. After 10 Minutes: 96.9 percent.
      b. After 24 Hours: 98.4 percent.
   3. Ultimate Tensile Strength, ASTM D412: 220 psi (1.5 MPa).
   4. Crack Bridging, PR EN 1062-7:
      a. At minus 77 degrees F (minus 60 degrees C): 12 mils (0.3 mm).
      b. At 32 degrees F (0 degrees C): 19.5 mils (0.5 mm).
      c. At 73 degrees F (23 degrees C): 27.5 mils (0.7 mm).
   5. Flexibility, ASTM D522, at minus 30 degrees F (minus 34 degrees C): 1/8 inch (3 mm) mandrel.
   6. Pull-Off Strength Adhesion, ASTM D4541: 210 psi (1.4 MPa).
   7. Wind-Driven Rain, Federal Specification TT-C-555B: Passes.
   8. Water-Vapor Permeance, ASTM D1653: 10 perms.
   9. Carbon-Dioxide Diffusion, PR EN 1062-6:
      a. R (equivalent air-layer thickness): 263 feet (80 m).
      b. Sc (equivalent concrete thickness): 8 inches (20 cm).
   10. Accelerated Weathering, ASTM G23, Type D, 5,000 hours: Passes.
   11. Visual Color Change, ASTM D1729, 5,000 hours: Passes.
   12. Chalking, ASTM D4214, 5,000 hours: Passes.
   13. Freeze/Thaw Resistance, ASTM C67, 60 cycles: Passes.
   14. Salt-Spray Resistance, ASTM B117, 300 hours: Passes.
   15. Dirt Pick-Up, ASTM D3719, after 6 months exposure: 94.33 percent.
   16. Mildew Resistance, ASTM D3273 and 3274: No growth.

C. Approximate Coverage Rate: 50 to 100 sq ft per gal (4.6 to 9.3 m2/L).

D. Wet Film Thickness (WFT):
   1. Smooth: 16 to 32 mils (406 to 813 microns).

E. Dry Film Thickness (DFT):
   1. Smooth: 8 to 16 mils (203 to 406 microns).

F. Colors:
   1. To match existing coating color.

G. Texture:
   1. To match existing coating.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Examination:
   1. Examine substrate to which finely textured coating is to be applied. Do not proceed if unsatisfactory conditions exist which hamper proper application.
   2. Beginning of application means acceptance of substrate condition.

B. Preparation:
   1. Surfaces to receive system shall be free of defects such as honeycombs, form marks, tie holes, concrete dropping, laitance, dirt, dust, grease, form release treatments, efflorescence, curing compounds, paint and any other foreign material.
   2. Ensure that substrate is sound, clean, dry, and free of dust, dirt, oils, grease, laitance, efflorescence, mildew, fungus, biological residues, and other contaminants that could prevent proper adhesion.
   3. Clean surface to achieve texture similar to medium-grit sandpaper.

C. Repair holes and spalled and damaged concrete with repair materials approved by coating manufacturer.

D. Remove protruding concrete accessories and smooth out irregularities.

E. When chemical cleaners are used, neutralize compounds and fully rinse surface with clean water. Allow surface to dry before proceeding.

F. Remove blisters or delaminated areas and sand edges to smooth rough areas and provide transition to existing paint areas.

G. Beginning of application means acceptance of substrate.

H. Concrete Surfaces:
   1. Cure concrete a minimum of 28 days before application.
   2. Remove laitance, bond-inhibiting contaminants, form-release agents, and sealers.
   3. Remove form tie wires and repair holes, small voids, and spalls using appropriate repair product approved by coating manufacturer.
   4. Abrasive-blast slick, dense concrete surfaces or use primer approved by coating manufacturer. Test surface for proper adhesion.

I. Brick Surfaces:
   1. Ensure bricks are laid true and fully cured to full load-bearing capacity.
   2. Remove mortar splatter and excess mortar.
   3. Repoint or fill voids with appropriate patching product approved by coating manufacturer.
   4. Ensure mortar joints are sound and free of voids and cracks.
   5. Apply base coat approved by coating manufacturer to new bricks

J. Crack Preparation and Pretreatment:
   1. Treat cracks larger than 1/32 inch (0.8 mm) and up to 1/16 inch (1.6 mm) with brush-grade acrylic crack filler approved by coating manufacturer.
   2. Treat cracks larger than 1/16 by 1/16 inch (1.6 by 1.6 mm) but less than 1/4 by 1/4 inch (6 by 6 mm) with knife-grade acrylic crack filler approved by coating manufacturer.
   3. Treat moving cracks larger than 1/4 by 1/4 inch (6 by 6 mm) with internally plasticized polyurethane sealant approved by coating manufacturer.
   4. Apply test application of crack repair materials in inconspicuous location to ensure compatibility and aesthetic approval.

3.2 MASONRY WEEP VENT AND DRAINAGE VENT PROTECTION

A. Weep vents and drainage vents are not to be coated. Protect as required during coating process.

3.3 MIXING

A. Mix coating in accordance with manufacturer's instructions to ensure uniform color and aggregate disbursement and to minimize air entrapment.

B. In multi-pail applications, mix contents of each new pail into partially used pail to ensure color consistency and smooth transitions from pail to pail.

3.4 APPLICATION

A. General:
   1. Apply coating in accordance with manufacturer's instructions.
   2. Apply coating as a 2-coat system.
   3. Maintain proper uniform wet-film thickness during application to ensure performance characteristics desired.
   4. Apply coating to achieve pinhole-free, consistent film build on coated surfaces.
      a. Apply material by brush, roller, plaster type sprayer, or low pressure sprayer.
      b. Back roll brushed or sprayed material; cross roll roller-applied material.
      c. Finish material so that brush and roller strokes are on one direction

3.5 FIELD QUALITY CONTROL

A. Unless noted otherwise, all exterior brick masonry and concrete surfaces shall receive complete and thorough coverage of specified masonry weatherproofing. Color to match existing and verified by Architect.

B. Maintain schedule of application of system in field office for Owner/Architect's review.

C. Protect applied coating from damage during construction.

3.6 EXTRA STOCK

A. Provide minimum one gallon of each color of coating color used on project. Each container to be properly labeled, identifying color.

END OF SECTION