SECTION 071416 - COLD FLUID-APPLIED WATER-PROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes : (for below grade water-proofing protection on masonry walls; applied from bottom of CMU at footing, up to first masonry joint above grade)

1. Polyurethane waterproofing.
2. Latex-rubber waterproofing.

B. Related Requirements:

1. Section 072726 "Fluid-Applied Membrane Air-Barrier" for Air Barriers on face of CMU masory walls, behind insulation .

1.3 PRE-INSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1. Review waterproofing requirements including, but not limited to, the following:

a. Surface preparation specified in other Sections.
b. Minimum curing period.
c. Forecasted weather conditions.
d. Special details and sheet flashings.
e. Repairs.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and tested physical and performance properties of water-proofing.
2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.

B. Shop Drawings:

1. Show locations and extent of water-proofing.

2. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
3. Include setting drawings showing layout, sizes, sections, profiles, and joint details.

C. Samples: For each exposed product and for each color and texture specified, including the following products:

1. Flashing sheet, 8 by 8 inches (200 by 200 mm).
2. Membrane-reinforcing fabric, 8 by 8 inches (200 by 200 mm).

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Apply water-proofing within the range of ambient and substrate temperatures recommended in writing by water-proofing manufacturer.

1. Do not apply water-proofing to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F (3 deg C) above dew point.
2. Do not apply water-proofing in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.

B. Maintain adequate ventilation during application and curing of water-proofing materials.

1.8 WARRANTY

A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace water-proofing that fails in materials or workmanship within specified warranty period.

1. Warranty Period: ten10 years from date of Substantial Completion.

B. Installer's Special Warranty: Specified form, on warranty form at end of this Section, signed by Installer, covering Work of this Section, for warranty period of two 2 years.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Source Limitations for Water-proofing System: Obtain water-proofing materials, protection course, from single source from single manufacturer.

2.2 TWO-COMPONENT POLYURETHANE WATER-PROOFING

A. Two-Component, Unmodified Polyurethane Water-proofing: ASTM C 836/C 836M.

1. Products: Subject to compliance with requirements, provide the following or a product listed below:

a. Carlisle Coatings & Waterproofing Inc; CCW 703 Liquiseal.
b. Gaco Western LLC; GacoFlex LM-60.
c. Tremco Incorporated; CPG's TREMproof 250GC

2.3 LATEX-RUBBER WATERPROOFING

A. Two-Component, Unreinforced, Latex-Rubber Waterproofing: ASTM C 836/C 836M; coal-tar free.

1. Products: Subject to compliance with requirements, provide one of the following or a product listed above:

a. Grace Construction Products; W.R. Grace & Co. -- Conn; Procor.
b. Henry Company; CM100.

2. Hydrostatic-Head Resistance: 65 feet (20 m) minimum; ASTM D 5385.

2.4 SINGLE COMPONENT, POLYMER-MODFIED, COLD-APPLIED, LIQUID WATERPROOFING MEMBRANE

A. Performance Based Spec: Waterproofing membrane shall have the following properties as determined by laboratory testing:
1. Color: Black
2. Solids: 70%
3. Total Cure Time: 16-24 hours
4. Shore "00" Hardness, ASTM C836: Passes
5. Adhesion to Concrete, ASTM C836: Exceeds
6. Low Temperature Flex and Crack Bridging, ASTM C836: Passes
7. Stability, ASTM C836: Exceeds
8. Elongation, ASTM D412: 1500%
9. Water Absorption, ASTM D1970: 0.7%
10. Water Vapor Transmission, ASTM E96 (Method B): 0.03 perms

B. Proprietary Based Spec:

1. MEL-ROL LM Waterproofing System by W. R. MEADOWS.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials recommended in writing by water-proofing manufacturer for intended use and compatible with one another and with water-proofing.

1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.

B. Primer: Manufacturer's standard primer, sealer, or surface conditioner; factory-formulated acrylic latex, polyurethane, or epoxy.

C. Sheet Flashing: 50-mil- (1.3-mm-) minimum, non-staining, uncured sheet neoprene.

1. Adhesive: Manufacturer's recommended contact adhesive.

D. Membrane-Reinforcing Fabric: Manufacturer's recommended fiberglass mesh or polyester fabric, manufacturer's standard weight .

E. Joint Reinforcing Strip: Manufacturer's recommended fiberglass mesh or polyester fabric.

F. Joint Sealant: Multicomponent polyurethane sealant, compatible with water-proofing; as specified in Section 079200 "Joint Sealants"; and as recommended by manufacturer for substrate and joint conditions.

1. Backer Rod: Closed-cell polyethylene foam.

2.6 PROTECTION COURSE

A. Protection Course: ASTM D 6506, semi-rigid sheets of fiberglass or mineral-reinforced-asphaltic core, pressure laminated between two asphalt-saturated fibrous liners and as follows:

1. Products: Subject to compliance with requirements, provide one of the following :

a. Henry Company; Asphalt Protection Board.
b. Soprema, Inc; Sopraboard.
c. W. R. Meadows, Inc; Protection Course.

2. Thickness: 1/4 inch (6 mm), nominal.
3. Adhesive: Rubber-based solvent type recommended in writing by water-proofing manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that concrete has cured and aged for minimum time period recommended in writing by waterproofing manufacturer.
2. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for water-proofing application.

B. Mask off adjoining surfaces not receiving water-proofing to prevent spillage and over-spray affecting other construction.

C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, acid residues, and other penetrating contaminants or film-forming coatings from concrete.

D. Remove fins, ridges, and other projections, and fill honey-comb, aggregate pockets, holes, and other voids.

3.3 PREPARATION AT TERMINATIONS, PENETRATIONS, AND CORNERS

A. Prepare surfaces at terminations and penetrations through waterproofing and at expansion joints, sleeves, and corners according to waterproofing manufacturer's written instructions and to recommendations in ASTM C 898/C 898M and ASTM C 1471.

B. Apply water-proofing in two separate applications, and embed a joint reinforcing strip in the first preparation coat when recommended by water-proofing manufacturer.

3.4 JOINT AND CRACK TREATMENT

A. Prepare, treat, rout, and fill joints and cracks in substrate according to water-proofing manufacturer's written instructions and to recommendations in ASTM C 898/C 898M and ASTM C 1471. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D 4258.

1. Comply with ASTM C 1193 for joint-sealant installation.
2. Apply bond breaker on sealant surface, beneath preparation strip.

3. Prime substrate along each side of joint and apply a single thickness of preparation strip at least 6 inches (150 mm) wide along each side of joint. Apply water-proofing in two separate applications and embed a joint reinforcing strip in the first preparation coat.

B. Install sheet flashing and bond to deck and wall substrates where required according to water-proofing manufacturer's written instructions.

1. Extend sheet flashings for 4 inches (100 mm) onto perpendicular surfaces and items penetrating substrate.

3.5 WATER-PROOFING APPLICATION

A. Apply water-proofing according to manufacturer's written instructions and to recommendations in ASTM C 898/C 898M and ASTM C 1471.

B. Apply primer over prepared substrate unless otherwise instructed in writing by water-proofing manufacturer.

C. Unreinforced Water-proofing Applications: Mix materials and apply water-proofing by spray, roller, notched squeegee, trowel, or other application method suitable to slope of substrate.

1. Apply one or more coats of water-proofing to obtain a seamless membrane free of entrapped gases and pinholes, with a dry film thickness of 60 mils (1.5 mm).
2. Apply water-proofing to prepared wall terminations and vertical surfaces.
3. Verify manufacturer's recommended wet film thickness of water-proofing every 100 sq. ft. (9.3 sq. m).

D. Cure water-proofing, taking care to prevent contamination and damage during application and curing.

E. Install protection course with butted joints over water-proofing before starting subsequent construction operations.

1. For vertical applications, set protection course in nominally cured membrane, which will act as an adhesive. If membrane cures before application of protection course, use adhesive.

3.6 PROTECTION

A. Do not permit foot or vehicular traffic on unprotected membrane.

B. Protect water-proofing from damage and wear during remainder of construction period.

C. Correct deficiencies in or remove water-proofing that does not comply with requirements; repair substrates, reapply water-proofing, and repair sheet flashings.

D. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

END OF SECTION 071416

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