SECTION 072600 - VAPOR RETARDERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Underslab vapor retarders.

1.2 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Vapor retarder under concrete slabs on grade.

1.3 DEFINITIONS

A. Vapor Retarder: Airtight barrier made of material that is relatively water vapor impermeable, to degree specified, with seams and joints sealed to adjacent surfaces.

B. Vapor Retarder Class: A measure of a material or assembly's ability to limit the amount of moisture that passes through that material or assembly. Vapor retarder class is defined using Procedure A, Desiccant Method at 73 degrees F and 50 percent Relative Humidity (RH), in accordance with ASTM E96/E96M and ICC (IBC)-2018, as follows:
   1. Class I: 0.1 perm or less.
   2. Class II: Greater than 0.1 perm to 1.0 perm.
   3. Class III: Greater than 1.0 perm to 10 perms.
   4. Vapor Permeable: 5 perms or greater.

1.4 REFERENCE STANDARDS

A. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.

B. ASTM D1709 - Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method.

C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.

D. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

E. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

F. ASTM F1249 - Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.

G. ICC (IBC)-2018 - International Building Code.

1.5 SUBMITTALS

A. See Section 013300 - Submittal Procedures for submittal procedures.

B. Product Data: Provide data on material characteristics, performance criteria, and limitations.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years experience.

1.7 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.1 VAPOR RETARDERS

A. Sheet Vapor Retarder:
   1. Basis of design product:
      a. Stego Wrap 15-Mil Vapor Barrier; Stego Industries, LLC: www.stegoindustries.com.
      b. Substitutions: See Section 016000 - Product Requirements.
   2. Class A when tested in accordance with ASTM E1745.
   3. Thickness: Min. 15 mils.
   4. Tensile Strength: 70.6 lbf/in when tested in accordance with ASTM D882.
   5. Puncture Resistance: 2,266 grams when tested in accordance with ASTM D1709.
   6. Water Vapor Permeance: 0.0086 perms when tested in accordance with ASTM F1249.

B. Include manufacturer's recommended adhesive or pressure-sensitive tape.

2.2 ACCESSORIES

A. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

B. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.

C. Pipe boots shall be constructed from the same vapor barrier material, tape and/or mastic per manufacturer’s instructions.

PART 3 EXECUTION

3.1 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

C. Earth or granular fill under slabs shall be level and tamped or rolled prior to installation of slab vapor barrier.

3.2 INSTALLATION

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.
   1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
   2. Face laps away from exposed direction of concrete pour.
   3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
   4. Lap joints 6 inches and seal with manufacturer's recommended tape.
   5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
   6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
   7. Protect vapor retarder during placement of reinforcement and concrete.
      a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

3.3 FIELD QUALITY CONTROL

A. Take digital photographs of each portion of installation prior to covering up vapor retarders.

3.4 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

B. Protect vapor retarders from damage until concealed by permanent construction. Foot traffic should be reduced to minimum to avoid punctures to the vapor barrier.

3.5 REPAIR

A. All punctures should be repaired with authorized tape and mastic according to manufacturer's instructions prior to placing the concrete.

END OF SECTION 072600