**SECTION 07 26 00**

**VAPOR RETARDERS**

**PART 1 GENERAL**

1. RELATED DOCUMENTS
   1. The provisions of the general Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section.
2. SECTION INCLUDES
   1. Sheet and sealant materials for controlling vapor diffusion through on grade concrete slabs.
3. REFERENCES
   1. ASHRAE Fundamentals Handbook: CHAPTER 25
   2. ASTM C920 – Standard Specification for Elastomeric Joint Sealant
   3. ASTM E96/E96M – Standard Test Methods for Water Vapor Transmission of Materials
   4. 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
   5. ASTM E1745 – Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs
   6. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specification
   7. FBC - Florida Building Code
   8. ACI 302.1R – Guide for Concrete Floor & Slab Construction
   9. ACI 302.2R – Guide for Concrete Slabs that Receive Moisture Sensitive Flooring Materials
4. PERFORMANCE REQUIREMENTS
   1. Water Vapor Transmission Rate: Maximum 1.1 grain/ft2/24 hrs per ASTM E96/E96M
   2. Minimum ASTM E1745 Class B rating for slabs on grade
5. SUBMITTALS
   1. Submit under provisions of Section 01 33 00
   2. Product Data: Provide data indicating material characteristics, performance criteria, and limitations.
   3. Provide the manufacturer’s installation instructions indicating preparation and installation requirements techniques per ASTM E 1643.
6. QUALITY ASSURANCE
   1. Perform Work in accordance with SWRI - Sealant and Caulking Guide Specification requirements for materials and installation.
7. SEQUENCING
   1. Sequence work under the provisions of Section 01 11 00.
   2. Sequence the work to permit installation of materials in conjunction with other retardant materials, seals, and air barrier assemblies.
   3. Do not install vapor retarder until items penetrating it are in place.

**PART 2 PRODUCTS**

1. SHEET MATERIALS
   1. Above Grade Sheet Retarder: Polyethylene film, 6-mil thick, a perm rating of 1.1.
   2. Below Grade Sheet Retarder (Slabs on grade) shall have the following properties
      1. Permeance Rating: Per ASTM E96/E96M or ASTM F1249

Shall meet permeance requirement for both new material and after ASTM E 1745 mandatory condition test (ASTM E 96 Sections 8, 11, 12, & 13)

* + - 1. New material Less than 0.1 perms (gr/ft2/hr/in-HG)
      2. After conditioning: Less than 0.1 perms (gr/ft2/hr/in-HG)
    1. Water Vapor Retarder: ASTM E 1745 meeting or exceeding Class A
    2. Minimum thickness: 10-mils per ACI 302.2R
    3. Polyethylene film reinforced with glass fiber square mesh, 15-mil thick, and perm rating of 0.5.

1. SEALANTS
   1. Butyl Sealant: ASTM C920, butyl rubber base, single component, solvent release, non-skinning, black color
   2. Polysulfide Sealant: ASTM C920, single component, chemical curing, capable of continuous water immersion, non-sagging type; black color.
   3. Polyurethane Sealant: ASTM C920, single component, chemical curing, non-sagging, and black color
   4. Primer: Recommended by sealant manufacturer to suit application.
   5. Cleaner: Non-corrosive type; recommended by sealant manufacturer; compatible with adjacent materials.
2. ADHESIVES
   1. Adhesive: Compatible with sheet barrier and substrate, permanently non-curing
3. ACCESSORIES
   1. Thinner and Cleaner for Sheet: As recommended by sheet material manufacturer.
   2. Tape shall be as required by the manufacturer of the vapor retarder with a maximum water vapor transmission rate of 0.3 perms (ASTM E96/E96M).
   3. Optional construction pipe booth from vapor barrier material applied per manufacturer’s requirements.

**PART 3 EXECUTION**

1. EXAMINATION
   1. Verify condition of substrate and adjacent materials under provisions of Section 01 31 00.
2. PREPARATION
   1. Remove loose or foreign matter that might impair adhesion.
   2. Clean and prime substrate surfaces to receive adhesive and sealants in accordance with manufacturer's instructions.
3. INSTALLATION
   1. Install materials in accordance with manufacturer's instructions.
   2. Concrete slabs on grade shall have a vapor barrier located between the slab and the earth.
   3. Lap all joints a minimum of 6” and tape joints.
   4. Seal all penetrations (including pipes) per manufacturer’s requirements.
   5. Repair any damaged areas by cutting patches of vapor retarder material, overlapping damaged area at least 6” into undamaged material and taping all sides.

END OF SECTION