SECTION 07 26 00
VAPOR BARRIERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS
- A. 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.
- B. Section 03 30 00 Cast-in-Place Concrete
- C. FBC-Florida Standard for Radon-Resistant New Commercial Constrution

1.2 SECTION INCLUDES
- A. Sheet and sealant materials for controlling vapor diffusion through on grade concrete slabs.

1.3 REFERENCES
- A. ASHRAE Fundamentals Handbook: CHAPTER 25
- B. ASTM C920 – Standard Specification for Elastomeric Joint Sealant
- C. ASTM E96/E96M – Standard Test Methods for Water Vapor Transmission of Materials
- D. ASTM E1643-18a – Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contac 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. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specification
- G. FBC - Florida Building Code
- H. ACI 302.1R-15 – Guide for Concrete Floor & Slab Construction
- I. ACI 302.2R-06 – Guide for Concrete Slabs that Receive Moisture Sensitive Flooring Materials

1.4 PERFORMANCE REQUIREMENTS
- A. Water Vapor Transmission Rate: Maximum 1.1 grain/ft^2/24 hrs per ASTM E96/E96M
- B. Minimum ASTM E1745 Class B rating for slabs on grade

1.5 SUBMITTALS
- A. Submit under provisions of Section 01 33 00
- B. Product samples and literature
- C. Provide the manufacturer's installation instructions indicating preparation and installation requirements techniques per ASTM E 1643.

1.6 QUALITY ASSURANCE
- A. Summary of test results per paragraph 9.3 of ASTM E1745Perform Work in accordance with SWRI - Sealant and Caulking Guide Specification requirements for materials and installation.

1.7 SEQUENCING
- A. Sequence work under the provisions of Section 01 11 00.
- B. Do not install vapor retarder until items penetrating it are in place.

PART 2 PRODUCTS

2.1 SHEET MATERIALS
- A. Above Grade Sheet Retarder: Polyethylene film, 6-mil thick, a perm rating of 1.1.
- B. Below Grade Vapor Barrier (Slabs on grade) shall have the following properties
  1. Maintain permeance of less than 0.01 Perms (grains/ft squared x hr x inHG) as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
  2. Other performance criteria:

a. Strength: ASTM E1745 Class A
b. Thickness: 15 mils (minimum)

3. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1

C. Vapor Barrier Products:
1. Basis of design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC

2.2 ACCESSORIES

A. Seams:
1. Stego Tape by Stego Industries LLC

B. Sealing Penetrations of Vapor Barrier:
1. Stego Mastic by Stego Industries LLC
2. Stego Tape by Stego Industries LLC

C. Perimeter/edge seal:
1. Stego Crete Claw by Stego Industries
2. Stego Term Bar by Stego Industries
3. Stego Tape (double-sided sealant tape) by Stego Industries LLC

D. Penetration Prevention:
1. Beast Foot by Stego Industries LLC
2. Beast Form Stake by Stego Industries LLC

E. Vapor Barrier-Safe Screed System:
1. Beast Screed by Stego Industries LLC
2. Beast Hook by Stego Industries LLC

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify condition of substrate and adjacent materials under provisions of Section 01 31 00.

3.2 PREPARATION

A. Ensure that subsoil is approved by Geotechnical Engineer
1. Level and compact base material

3.3 INSTALLATION

A. Install vapor barrier in accordance with ASTM E1643

1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible

2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise at a point; (a) acceptable to the structural engineer or (b) where obstructed by impediments, such a dowels, waterstops, or any other site condition requiring early termination of the vapor barrier. At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.

a. Seal vapor barrier to the entire slab perimeter using Stego Crete Claw, per manufacturer's instructions.

OR

b. Seal vapor barrier to the entire perimeter wall or footing/grade beam with double-sided Stego Tape, or both Stego Term Bar and Stego Tape, per manufacturer's instructions. Ensure concrete is clean and dry prior to adhering the Stego Tape.

3. Overlap joints 6 inches and seal with Stego Tape

4. Apply Stego Tape/Stego Crete Claw to a clean dry vapor barrier

5. Seal all penetrations (including pipes) per manufacturer's instructions

6. For interior forming applications, avoid the use of non-permanent stakes driven through vapor barrier. Use Beast Form Stake and Beast Foot a s a vapor barrier-safe forming system. Ensure Beast Foot's peel-and-stick adhesive base is fully adhered to vapor barrier.

7. If non-permanent stakes must be driven through the vapor barrier, repair as recommended by manufacturer

8. Use reinforcing bar supports with base sections that eliminate or minimize the potential for puncture of the vapor barrier

9. Repair damaged areas with vapor barrier material of similar (or better) permeance, puncture, and tensile strength.

10. For vapor barrier-safe concrete screeding applications, install Beast Screed per manufacturer's instructions prior to placing concrete.

END OF SECTION