

**SECTION 03 30 50**

**UNDERSLAB VAPOR RETARDER**

**PART 1 – GENERAL**

1.1 PURPOSE

- A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

- A. Vapor retarder used under slab-on-grade speeds up the concrete curing time, which affects smaller projects more.
- B. Refer to floor finishes sections regarding moisture testing requirements.

1.3 SUMMARY

- A. Section Includes:
  - 1. Below slab vapor barrier, seam tape, pipe boots and mastic.
  - 2. Installation of vapor barrier

1.4 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM E 1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs; current edition.
  - 2. ASTM E 1643 - Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; current edition.

1.5 SUBMITTALS

- A. Product Data:
  - 1. Submit manufacturer's product data including manufacturer's installation instructions for placement, seaming and pipe boot installation in accordance with Division 01.
  - 2. Summary of test results, ASTM E 1745, paragraph 8.3.
  - 3. Manufacturer's installation instructions for placement, seaming and penetration repair.
- B. Samples:
  - 1. Submit 2 - 12"x12" samples of each vapor barrier material and 2-12" lengths of each tape specified in accordance with Division 01.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Storage and Protection:
  - 1. Deliver materials to job site in manufacturer's original, unopened packaging with manufacturer's name and product name clearly marked.
  - 2. Pallets of material shall be stored at job site on a level surface and protected from the weather. Membrane shall be left on pallets until unpackaged for installation. Do not stack pallets.

**PART 2 – PRODUCTS**

2.1 MATERIALS

- A. Vapor Barrier - WS-05: ASTM E-1745, Class A.
  - 1. Thickness: 0.5 mm.
  - 2. Permeance: Less than 0.03 perms [grains/(sq. ft. hr inHg)] per ASTM E96 - Method B.
  - 3. Tensile Strength: 68 lbs/in., ASTM E154.
  - 4. Elongation: 300%, ASTM D412.
  - 5. Puncture Resistance: 3,300 gms, ASTM D1709.

## GUIDE SPECIFICATIONS FOR DESIGN AND CONSTRUCTION DOCUMENTS

6. Peel Adhesion to Concrete: >4 lbs/in., ASTM D903.
7. Seam Tape: Grace Prepruf Tape.
8. Liquid Membrane: Grace Bituthene Liquid Membrane.
9. Basis of Design: Grace Florprufe 120.
10. Substitutions: Refer to Division 01.

### PART 3 – EXECUTION

#### 3.1 INSPECTION

##### A. Verification of Conditions

1. Verify that sub-grade has been leveled and compacted as required under another Section.
2. Remove any loose rocks or other foreign debris that would affect the membrane installation.
3. Do not begin installation of vapor barrier until sub-grade is acceptable.

#### 3.2 INSTALLATION

##### A. General:

1. Install in accordance with ASTM E-1643.
2. Install vapor barrier in longest lengths possible, with longest dimension parallel with the direction of the concrete pour.
3. Lap vapor barrier over footings and/or seal to foundation walls.
4. End or edge laps, minimum of six inches. Seal with 4 inch wide seam tape using lap line for alignment. Remove plastic release liner to ensure bond.
5. Seal all penetrations with manufacturer's liquid membrane detailing compound.
6. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged areas 6 inches and tape at all four sides of repair.

END OF SECTION