SECTION 07 26 16 – under-slab-on-grade vapour retarder

1. General
   1. SUMMARY
      1. Section includes vapour retarder and installation accessories for installation under concrete slabs on grade.
      2. Related Requirements:
         1. Section 03 30 00 – Cast-in-Place Concrete.
         2. Section 31 20 00 – Earth Moving for preparation of subgrade below vapour retarder.
   2. PREINSTALLATION MEETINGS
      1. Preinstallation Conference: Conduct conference at Project site two weeks before start of installation of reinforced vapour retarders.
         1. Review vapour-retarder installation, protection, and coordination with other work.
   3. ACTION SUBMITTALS
      1. Product Data: For each type of product indicated including installation instructions.
   4. INFORMATIONAL SUBMITTALS
      1. Material Certificate signed by manufacturer.
      2. Summary of test results per paragraph 9.3 of ASTM E 1745.
      3. Manufacturer's installation instructions for placement, seaming and penetration repair instructions.
   5. QUALITY ASSURANCE
      1. Provide vapour retarder and accessories from a single source and single manufacturer. Provide accessories manufactured or approved by vapour retarder manufacturer for application indicated.
      2. All mandatory ASTM E 1745 testing must be performed on a single production roll per ASTM E 1745 Section 8.1.
      3. Coordination: Schedule work such that membrane will not be left exposed to weather for longer than that recommended by the manufacturer.
   6. DELIVERY, STORAGE AND HANDLING
      1. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's instructions. Protect from damage from weather, excessive temperature, and construction operations. Remove and dispose of damaged material in accordance with applicable regulations.
2. Products
   1. PERFORMANCE REQUIREMENTS
      1. Vapour retarder shall have all of the following qualities:
         1. Maintain permeance of less than 0.01 Perms [grains/(ft2 · hr · inHg)] as tested in accordance with mandatory conditioning tests per ASTM E 1745 Section 7.1 (7.1.1-7.1.5).
         2. Other Performance Criteria:
            1. Strength: ASTM E 1745 Class A.
            2. Thickness: 15 mils minimum.
   2. VAPOUR RETARDERS

Retain sheet vapour retarder from below if a non-bituminous water vapour retarder is required.

Retain option and insert perm rating in first paragraph below if requiring a stricter perm rating than the 0.3 perms permitted by ASTM E 1745. Verify lower perm rating with manufacturers.

* + 1. Sheet Vapour Retarder: ASTM E 1745, Class A[, except with maximum perm rating of <Insert rating>]. Include manufacturer's recommended adhesive or pressure-sensitive tape.
       1. Products: Subject to compliance with requirements, provide one of the following:
          1. Carlisle Coatings & Waterproofing, Inc.; Blackline 400.
          2. Grace Construction Products, W. R. Grace & Co.; Florprufe 120.
          3. Stego Industries, LLC; Stego Wrap 15 mil Class A.
          4. Meadows, W. R., Inc.; Perminator 15 mil.

Retain first paragraph below if bituminous vapour retarder is required.

* + 1. Bituminous Vapour Retarder: 110-mil- (2.8-mm-) thick, semiflexible, 7-ply sheet membrane consisting of reinforced core and carrier sheet with fortified asphalt layers, protective weather-coating, and removable plastic release liner. Furnish manufacturer's accessories including bonding asphalt, pointing mastics, and self-adhering joint tape.

This is the preferred membrane beneath wood flooring installations.

* + - 1. Products: Subject to compliance with requirements, provide the following:
         1. Meadows, W. R., Inc.; Pre-moulded Membrane Vapour Seal.
      2. Water-Vapour Permeance: 0.00 grains/h x sq. ft. x inches Hg (0.00 ng/Pa x s x sq. m); ASTM E 154.
      3. Tensile Strength: 140 lbf/inch (24.5 kN/m); ASTM E 154.
      4. Puncture Resistance: 90 lbf (400N); ASTM E 154.
  1. ACCESSORIES
     1. Vapour Retarding Seam Tape:
        1. Water Vapour Transmission Rate: 0.3 perms or lower per ASTM E 96.
     2. Vapour Proofing Mastic:
        1. Water Vapour Transmission Rate: 0.3 perms or lower per ASTM E 96.

Verify that selected manufacturer has pipe boots.

* + 1. Pipe Boots: [Provide manufacturer's factory fabricated pipe boots, or construct ]. Construct pipe boots from vapour barrier material, pressure sensitive tape and/or mastic per manufacturer's instructions.

1. Execution
   1. PREPARATION
      1. Examine areas to receive vapour retarders. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.
      2. Ensure that subsoil is smooth, level and compacted with no sharp edges.
         1. Level and compact base material.
      3. Ensure that there is no moisture entrapment by vapour retarder due to rainfall or ground water intrusion.
   2. INSTALLATION
      1. Install vapour retarder in accordance ASTM E 1643 and manufacturer's written instructions.
         1. Install vapour retarders continuously at locations under slab. Ensure there are no discontinuities in vapour retarder at seams or penetrations.
         2. Unroll vapour retarder 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.
         3. Extend vapour retarder over footings and grade beams to a distance acceptable to the structural engineer or stop at impediments such as dowels and water-stops.
         4. Seal vapour retarder to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments such as water-stops or dowels.
         5. Overlap joints 6 inches (150 mm) and seal with manufacturer's tape.
         6. Apply tape to a clean and dry vapour barrier.
         7. Seal all penetrations with manufactured or field-fabricated boots and with tape according to manufacturer's guidelines. Unsealed penetrations are not allowed.
         8. Immediately repair damaged areas by cutting patches of vapour retarder, overlapping damaged area 6 inches, and taping all sides with tape.
      2. Bituminous Vapour Retarders: Place, protect, and repair bituminous vapour retarder according to manufacturer's written instructions.
   3. PROTECTION
      1. Protect vapour retarders from damage during installation of reinforcing steel and utilities and during placement of concrete slab.

END OF SECTION