SECTION 07265

VAPOR RETARDERS, VAPOR BARRIERS, AND AIR BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Vapor retarders under slabs-on-grade.
   2. Vapor barriers under slabs-on-grade.
   3. Alkalinity and moisture emission test.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: 12 inch (300 mm) square units for each type of vapor retarder, vapor barrier, or air barrier indicated.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.
   1. Moisture emission tests.
   2. Surface alkalinity tests.

D. Submit floor plan with test locations identified for moisture emission tests.

E. LEED Submittals:
   1. Credit MR 2.1 and 2.2: Comply with Division 1 Section "Construction Waste Management."
   2. Credit MR 5.1: Product Data indicating location of material manufacturer for regionally manufactured materials.
      a. Include statement indicating cost and distance from manufacturer to Project for each regionally manufactured material.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers and Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following products listed in Part 2 of this Section.

2.2 VAPOR RETARDERS FOR UNDER SLABS

A. Vapor Retarder for VCT and other moisture vapor sensitive flooring applications having the following qualities:

1.	Minimum Permeance:	ASTM E-96, not greater than 0.04 perms.
2.	Tensile Strength:	ASTM E154 or D638, Class B – over 30 lbs/in.
3.	Puncture Resistance:	ASTM E-154, Class C – over 475 grams.
4.	Water Vapor Barrier:	ASTM E-1745, meets or exceeds Class C.
5.	Thickness of Barrier (Plastic)	ACI 302.1R-96, not less than 10 mils.

B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   1. Stego Wrap, 10 mil thick vapor retarder by Stego Industries LLC, (877) 464-7834.
   2. Griffolyn Type-65 by Reef Industries.
   3. Vapor Block 10 by Raven Industries.
   4. MoistStop Ultra A by Fortifiber.

C. Vapor-Retarder/Barrier Tape (for slabs): Stego Warp red polyethylene tape or tape as recommended by the manufacturer.

D. Vaporlock edge tape, preformed 2" wide two-sided adhesive.

2.3 VAPOR BARRIERS FOR UNDER RADIANT SLABS

A. Provide Slab-Shield™ S4000 by Environmentally Safe Products, Inc. (800-289-5693) or approved substitute. Rolled sheet material consisting of foam insulation laminated on each side of a reflective aluminum foil material.

B. Properties:
   1. Thickness: 1/2 inch.
   2. R-Value: R-2.9.
   3. Perm Rate: .008.

C. Vapor-Retarder/Barrier Tape: Polyethylene tape or tape as recommended by the manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions applicable to products and application indicated.

B. Extend retarders or barriers in thickness indicated to envelop entire area to be covered. Cut and fit tightly around obstructions. Remove projections that interfere with placement.

3.2 INSTALLATION OF UNDER-SLAB VAPOR RETARDERS AND BARRIERS

A. Moisture vapor barrier system shall be installed at all interior floor slabs and as otherwise indicated in the drawings in strict accordance with the manufacturer's printed instructions and as follows:

1. Snap chalk line along inside perimeter of foundation walls at top of slab elevation.
2. Without wetting, clean a 3" wide band on the surface of the concrete below the chalk line at approximately mid-slab height. Remove dirt, residual form release, or other bond inhibiting surface contaminates. Grind smooth any surface projections within the band.
3. While removing the contact paper on the backside, firmly press 2" wide Vaporlock perimeter strip onto wall, parallel to the chalk line on the cleaned band at mid-slab elevation.
4. Remove contact paper on the face side.
5. Apply a 12" wide strip of vapor barrier covering only the bottom 1" of contact surface on the perimeter strip. Cut, fit, and seal corner details with vapor barrier seaming tape.
6. Align top edge of Iso-Strip isolation joint material to chalk line, and press material onto remaining 1" of exposed perimeter strip adhesive.
7. Roll out vapor barrier material, overlapping edge rolls and all seams by 3". Tape all seams with vapor barrier seaming tape.
8. All tears, punctures, etc. to be repaired and taped as required to maintain the watertight integrity of the vapor barrier system.

3.3 FIELD QUALITY CONTROL

A. Moisture Emission Testing: Conduct moisture emission testing of concrete slabs-on-grade and elevated slabs to receive floor coverings or coatings by the calcium chloride test method. Perform tests in accordance with ASTM F-1869. Conduct testing using an independent agency with a minimum of five years experience in moisture emission testing or as pre-approved by the manufacturer of the flooring material.
   1. Conduct a minimum of three tests for the first 1,000 sq. ft. and one additional test for each additional 3,000 sq. ft.
   2. Ambient test environment shall conform to ASTM-1869 and be reflective of the building’s normal operational environment.
   3. Conduct tests on bare concrete, free of surface contaminants, adhesives, curing compounds or sealers.
   4. Locate test locations a minimum of five feet from exterior walls or interior walls that penetrate the floor. Do not conduct tests over random cracks or within five feet of control or construction joints.

B. Surface Alkalinity Testing: Conduct alkalinity testing of the concrete surface at all moisture emission test locations in accordance with ASTM F710 5.3.1.
   1. Preparation of Substrate: Prepare concrete substrates in conformance with ASTM F710.

C. Submit all test results to the Architect, flooring installer and manufacturer of the flooring material(s) before installation of the flooring materials.

D. Moisture and Alkali Mitigation: Substrates not found to be in conformance with the flooring manufacturers warranty requirements must be brought into compliance, as recommended by the manufacturer of the flooring material, before proceeding with the installation of the flooring.

3.4 PROTECTION

A. Protect installed vapor retarders/barriers and air barriers from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where

vapor retarders/barriers or air barriers are subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION