

# VAPOR-VENT LOW PROFILE SUB-SLAB VAPOR COLLECTION SYSTEM

## SECTION 02 56 16 – GAS CONTROL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including general and supplementary conditions, and Division 1 specification section, apply to this section.

#### 1.2 SECTION INCLUDES

- A. The installation of materials designed to provide a sub-slab vapor collection system to eliminate the buildup of contaminant vapors under a structure, this section includes the following:
  - 1. Surface preparation and substrate treatment
  - 2. **Vapor-Vent** low profile vent fittings
  - 3. Vent riser installation stub up

#### 1.3 RELATED SECTIONS

- A. Section 02 24 00: Environmental Assessment
- B. Section 02 32 00: Geotechnical Investigation
- C. Section 03 15 00: Concrete Accessories
- D. Section 03 30 00: Cast-in-Place Concrete
- E. Section 03 40 00: Precast Concrete
- F. Section 07 90 00: Joint Protection
- G. Section 31 30 00: Earthwork Methods

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide a venting material that collects contaminant vapors and directs them to discharge, or to collection points, as specified in the vapor mitigation drawings and complies with the physical requirements set forth by the manufacturer.

#### 1.5 SUBMITTALS

- A. Product Data: Submit manufacturer's printed technical data, and tested physical and performance properties.
- B. Shop Drawings: Project specific drawings showing related transitions from flat **Vapor-Vent** pipe to circular pipe.
- C. Samples: Submit a sample of each, if required:

1. **Vapor-Vent**

2. **Vapor-Vent End Out.**

- D. Applicator Certification: Submit written confirmation at the vapor collection installer is currently approved by the membrane manufacturer.

1.6 QUALITY ASSURANCE

- A. Applicator Qualifications: Mitigation system applicator shall be an EPRO Authorized Applicator who is trained and abides to EPRO standards and policies.
- B. Third Party Inspection: Independent inspection of the vapor intrusion barrier may be required based on project conditions and desired warranty coverage, or as required based on local building code/government agency jurisdiction. Inspection reports shall be submitted directly to the vapor intrusion barrier manufacturer and made available to other parties per the owner's direction.
- C. Pre-Construction Meeting: A meeting shall be held prior to application of the vapor intrusion barrier system to assure proper substrate preparation, confirm installation conditions, and any additional project specific requirements.
- D. Materials: Vapor collection system and vapor intrusion barrier materials and system shall be single sourced by a manufacturer specializing in vapor intrusion barriers.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to site labeled with manufacturer's name, product brand name, material type, and date of manufacture. Upon the arrival of materials to the jobsite, inspect materials to confirm material has not been damaged during transit.
- B. Storage: Proper storage of materials is the responsibility of the certified applicator. Consult product data sheets to confirm storage requirements. Protect stored materials from direct sunlight.
- C. Disposal: Remove and replace any material that cannot be properly applied in accordance with local regulations and specification section 01 74 19.

1.8 PROJECT CONDITIONS

- A. Substrate Review: Substrates shall be reviewed by the certified applicator, engineer of record, and accepted prior to application.

## PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: EPRO Services, Inc. (EPRO), P.O. Box 347; Derby, KS 67037; Tel: (800) 882-1896; Email: [Info@eproinc.com](mailto:Info@eproinc.com); Web: [www.eproinc.com](http://www.eproinc.com)
- B. Basis of Design: **Vapor-Vent**
- C. Approved Alternative: **e.vent**

## 2.2 VAPOR COLLECTION MATERIALS

1. **Vapor-Vent:** *Vapor-Vent* features a lightweight three-dimensional, highly flexible polypropylene core and a non-woven geotextile filter fabric. The filter fabric is bonded to the dimples of the polypropylene core to prevent clogging within the vent.

PROPERTIES	TEST METHOD	VALUE
<b>DIMPLED CORE</b>		
Core Material		Polypropylene
Color		Black
Compressive strength	ASTM D 1621	9,500 PSF (455 kN/m <sup>2</sup> )
Thickness	ASTM - 1777	1 in.
Flow rate	ASTM D 4716	30 gpm./ft. of width
<b>FILTER FABRIC</b>		
CBR puncture	ASTM D 6241	250 lbs.
Grab tensile strength	ASTM D 4632	100 lbs
AOS	ASTM D 4751	70 U.S. sieve
Permitivity	ASTM D 4491	2.0 sec -1
Flow rate	ASTM D 4491	140 gpm./ft <sup>2</sup>
UV resistance	ASTM D 4355	70% (500 hrs.)
Dimensions: 165' x 12" x 1"		
Weight: 65 pounds		

## 2.3 AUXILIARY MATERIALS

- A. General: All accessory products shall be provided by the specified vapor intrusion barrier manufacturer. Auxiliary products used in lieu of, or in addition to, the manufactures products must be approved in writing by the manufacturer prior to installation.
- B. Vapor-Vent Fittings: Transition low profile venting to **Vapor-Vent End Out** in order to properly transition to specified round pipe.
- C. Reinforcement Tape: **e.tape** should be used when securing **Vapor-Vent** to fittings and at transition joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Comply with project documents, manufacturer's product information, including product installation guidelines and pre-job punch list.

#### 3.1.2 IDENTIFY LOW PROFILE VENT LAYOUT

- A. Identify and mark the layout of the low-profile vent material according the vapor mitigation plans developed by the engineer of record.

### 3.2 LOW PROFILE VENT INSTALATION

- A. General: Install **Vapor-Vent** over substrate material where designated on drawings. The flat base of the inner core shall be placed up, facing the installer. Seams shall be overlapped in accordance with manufacturer's recommendations.

- B. Intersection: At areas where low profile vent intersects, cut and fold back fabric to expose the dimpled core. Arrange the strips so that the top strip interconnects into the bottom strip in an interlocking fashion. Unfold fabric to cover the core and use **e.tape** to seal the connection to prevent sand or gravel from entering the core.
- C. Footings and Grade Beams: When crossing low-profile over footings or grade beams, a solid pipe sleeve may be required to keep the vapor collection system continuous. The solid pipe sleeve will be placed on top of, or through, the desired transition area. Once the solid pipe sleeve is in place, attach a **Vapor-Vent End Out** fitting on either side of the solid pipe and seal the low profile vent to the **Vapor-Vent End Out**. Consult with engineer of record and structural engineer for appropriate use and placement of sold pipe sleeve.
- D. Vent Risers: Place vent risers per the vapor mitigation plans, or as directed by the engineer of record. Connect the low-profile vent to **Vapor-Vent End Out** and seal with **e.tape**. An additional reducer may be required to transition the 4" diameter end out fitting to the specified diameter vent riser.

### 3.2.1 PLACEMENT OF OVERBURDON

- A. If placing overburden over the vapor collection system take care to prevent damage to the venting material.
- B. Heavy equipment shall not be driven over the low-profile pipe.
- C. Do not penetrate the vapor collection system once it is installed.

End of Section