

**TerraVent™**  
**SOIL GAS COLLECTION SYSTEM**  
**Version 1.1**

SECTION 02 56 19 – 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 Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
  - 1. Substrate preparation.
  - 2. TerraVent™ installation.
  - 3. TerraVent accessories.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 2 Section “Earthwork”, “Pipe Materials”, “Sub-drainage systems”, “Gas Control System”, “Fluid-Applied gas barrier”.
  - 2. Division 3 Section “Cast-in-Place Concrete” for concrete placement, curing, and finishing.
  - 3. Division 5 Section “Expansion Joint Cover Assemblies”, for expansion-joint covers assemblies and installation.

1.3 PERFORMANCE REQUIREMENTS

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

1.4 SUBMITTALS

- A. Submit Product Data for each type of gas venting system specified, including manufacturer’s specifications.
- B. Sample – Submit representative samples of the following for approval:
  - 1. Gas venting, TerraVent.
  - 2. TerraVent accessories.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who is certified in writing and approved by vapor intrusion barrier manufacturer Land Science for the installation of the TerraShield and Nitra-Seal vapor intrusion barrier system.
- B. Manufacturer Qualification: Obtain gas venting, vapor intrusion barrier and system components from a single manufacturer Land Science.
- C. Pre-installation Conference: A pre-installation conference shall be held prior to installation of the venting system, vapor intrusion barrier and waterproofing system to assure proper site and installation conditions, to include contractor, applicator, architect/engineer and special inspector (if any).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site as specified by manufacturer labeled with manufacturer’s name, product brand name and type, date of manufacture, shelf life, and directions for handling.

- B. Store materials as specified by the manufacturer in a clean, dry, protected location and within the temperature range required by manufacturer. Protect stored materials from direct sunlight.
- C. Remove and replace material that is damaged.

**PART 2 – PRODUCTS**

**2.1 MANUFACTURER**

- A. Land Science, San Clemente, CA. (949) 481-8118
  - 1. TerraVent™

**2.2 GAS VENT MATERIALS**

- A. TerraVent – TerraVent is a low profile, trenchless, flexible, sub slab vapor collection system used in lieu or in conjunction with perforated piping. TerraVent is recommended for sites with methane gas and aggressive chlorinated volatile organic or petroleum vapors. Manufactured by Land Science.
- B. TerraVent physical properties

PROPERTIES	TEST METHOD	TerraVent
<b>Vent Core Properties</b>		
Compressive Strength	ASTM D-1621	9,500 psf.
Thickness		1 inch
Flow Rate (Hydraulic gradient = 0.1)	ASTM D-4716	30 gpm/ft width
<b>Vent Fabric Properties</b>		
Grab Tensile Strength	ASTM D-4632	100 lbs.
CBR Puncture	ASTM D-6241	250 lbs.
Flow	ASTM D-4491	140 gpm/ft <sup>2</sup>
AOS	ASTM D-4751	70 U.S Sieve
Permittivity	ASTM D-4491	2.0 sec-1
U.V Resistance	ASTM D-4355	70% @500 hrs.
<b>Packaging:</b>	Dimension: 12"x 165'	
	Weight: 68 lbs.	

**2.3 AUXILIARY MATERIALS**

- A. TerraVent End Out
- B. Reinforced Tape.

**PART 3 – EXECUTION**

**3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions under which gas vent system will be installed, with installer present, for compliance with requirements. Do not proceed with installation until unsatisfactory conditions have been corrected.

**3.2 SUBSTRATE PREPARATION**

- A. Verify substrate is prepared according to project requirements.

### 3.3 PREPARATION FOR STRIP COMPOSITE

- A. Mark the layout of strip geocomposite per layout design developed by engineer.

### 3.4 STRIP GEOCOMPOSITE INSTALLATION

- A. Install TerraVent over substrate material where designated on drawings with the flat base of the core placed up and shall be overlapped in accordance with manufacturer's recommendations.
- B. At areas where TerraVent strips intersect cut and fold back fabric to expose the dimpled core. Arrange the strips so that the top strip interconnects into the bottom strip. Unfold fabric to cover the core and use reinforcing tape, as approved by the manufacturer, to seal the connection to prevent sand or gravel from entering the core.
- C. When crossing TerraVent over footings or grade beams, **consult with the specifying environmental engineer and structural engineer for appropriate use and placement of solid pipe materials.** Place solid pipe over or through concrete surface and attach a TerraVent End Out at both ends of the pipe before connecting the TerraVent to the pipe reducer. Seal the TerraVent to the TerraVent End Out using fabric reinforcement tape. Refer to TerraVent detail provided by Land Science.
- D. Place vent risers per specifying engineer's project specifications. Connect TerraVent to TerraVent End Out and seal with fabric reinforced tape. Use TerraVent End Out with the specified diameter piping as shown on system drawings.

### 3.5 PLACEMENT OF OVERLYING AND ADJACENT MATERIALS

- A. All overlying and adjacent material shall be placed or installed using approved procedures and guidelines to prevent damage to the strip geocomposite.
- B. Equipment shall not be directly driven over and stakes or any other materials may not be driven through the strip geocomposite.