



**SOIL GAS COLLECTOR MAT**

**PROFESSIONAL DISCOUNT SUPPLY**

## **Installation Guide**

### **Radon Ready New Construction**

**Time-saving, low-cost solution  
Easy Installation  
Reduce Liability!**

**Used in all 50 states and  
Internationally**

**Compliant under multiple codes:  
AARST-ANSI, ASTM,  
IRC Appendix F,  
EPA, HUD, and more!**

**Simple, modern solutions for soil  
gases: radon, vapor, and VOCs**



**MADE IN THE USA**

**Photos, videos, & more @**

**[www.RadonMat.com](http://www.RadonMat.com)**

## SOIL GAS COLLECTOR MAT FOR RADON READY NEW CONSTRUCTION

According to the US EPA's model standards for radon control systems in new building construction, a means for collecting soil gas should be installed beneath the slab.

More and more mitigators and builders are using PDS' soil gas collector mat because its installation does not entail any special coordination with plumbers or other site contractors. Low profile mat saves time as it removes the need for trenching. Just lay radon mat down around the inside perimeter of the foundation, secure it with spikes or landscaping staples, and pour the concrete.

SGC mat is superior to other mat systems because of its thickness and it has a geotextile fabric cloth surrounding the entire mat material. This feature eliminates the need to lay a plastic barrier or sheet on top of the mat to protect the matrix. Using plastic sheeting can cause concrete cracking due to differential dewatering. The full fabric design greatly enhances both the installation as well as the quality of the concrete slab. When SGC mat is installed below the slab, you're providing an airspace that intercepts radon--and other soil gases and vapors--before it seeps into the building through the slab. SGC mat also works well as a soil gas collector beneath crawlspace barrier due to its low-profile.



### WHY & HOW IT WORKS

The matting is a one inch high by twelve inch wide matrix enveloped in a geotextile filter fabric. 90% of the geomatrix is airspace, which means soil gas has room to move to the collection point. This creates incredible pressure field extension for post construction system activation. The mat can support concrete without compressing, yet is extremely lightweight and easy to handle.

This system allows for radon to flow through the filter fabric and into the airspace. The airspace does not clog because the filter fabric retains the underlying gravel and soil. The natural airflow through the mat then channels the radon to the T riser to pipe connection. From there, hazardous gas can be vented safely through the roof of the building.

Another key element of a soil gas collection system is attaching the 4" riser to the mat, such that airflow is not restricted at this critical juncture. The soil gas T riser is unique as it has three ports, two redundant mat entries and one PVC connection to outside air. This unique fitting connects all three sides without special connections or fittings. Common duct tape and caulk does the trick.

# ADVANTAGES

NO TRENCHING  
NO BACKFILL  
NO VAPOR BARRIER\*

It's called **SOIL** gas mat for a reason,  
Place directly on soil or substrate.

Low-profile (1" thick) gas mat  
does not require trenching.



# INSTALLATION INSTRUCTIONS

1. Begin work on the sub grade (soil or gravel) after the final preparation and before the concrete is poured. Start with T-Riser(s) and work out to ensure smooth mat placement. Position the T-Riser(s) in appropriate location(s) and nail down with a 12" steel nail (T Nail) through precut center hole.
2. Slide mat into flat openings on either end of T-riser with a portion of the fabric around the outside. Tape the fabric to the outside of the T-Riser with duct tape and staple mat to the ground with landscape staples to ensure soil contact remains during pour stage.
3. Mat is typically laid out in a rectangular loop in the largest area with branches or legs into smaller areas (FREE plan design at [www.radonmat.com](http://www.radonmat.com)). There is no need to trench the mat. Roll out the SGC mat, smooth it onto the ground. To avoid wrinkles and buckling, work away from the risers, stapling to the ground as you go. The mat should be stapled every three to four feet, in addition to corners, tee junctions & ends.
5. Corners are constructed by peeling back the filter fabric, cutting two ends of the matrix at 45 degree angles and butting (or overlapping: no more than 1/2") the matrix together. Pull the filter fabric back and tape into place. Staple across the joint of the matrix and each leg of the corner. Use a minimum of four staples at each corner-- two across the joint and one on each leg.
6. The tees for branches and legs are constructed by slitting the fabric of the main loop at the location desired. Cut the fabric of the branch at the edges and expose two inches of the matrix. Cut off the exposed matrix and but the matrix of the branch (or overlap 1/2") to the matrix of the main loop. Pull the filter fabric of the branch back over the main loop and tape into place. Staple across joint of the matrix with two staples and one each on the branch and main loop. Use a minimum of four staples at each tee, two across the joint and one on each loop and branch.

7. All openings in the fabric at joints, tee's, and ends of branches should be taped to keep out concrete.

8. Stub up a few feet of 4" schedule 40 PVC\* from all T risers before pour (or cover T riser with duct tape). Seal with polyurethane caulk and screws. This ensures no concrete aggregate enters the riser during slab pour. Be sure to label "CAUTION RADON REDUCTION SYSTEM" on all pipe. \*(6" PVC may be substituted--for large multifamily projects. Simply cut T riser 4" insert away to reveal 6" insert).

9. When the building is ready for the vent pipe to be installed above the slab, fit to pre-stubbed PVC with PVC straight connect. If PVC was not preset, cut duct tape from riser and insert 4" PVC pipe now. Seal with polyurethane caulk and secure with screws. Always label "CAUTION RADON REDUCTION SYSTEM" to avoid confusion on site and for the building occupants.

note: The openings in the riser are laid out at 180 degrees to accomodate straight runs of mat. However, if the riser is to be placed in a corner, which is not uncommon, the front of the T can be cut and the SGC mat inserted into the new opening. The side of the T that is unused should be sealed with tape. This creates a 90 degree T which will allow corner placement for the riser. Mat should always enter the T riser from at least two directions and exhaust to pipe vertically.



## MAKING CORNERS AND SPLICES

The mat should be routed around the inside perimeter of the foundation. This will require occasional corner junctions. Furthermore, splices will have to be made to join two lengths of mat together. Corners and splices are very easy to make, and do not require any special fittings. Cut back the filter fabric to reveal the core material. In the case of a splice, merely overlap the core by at least one corrugation, replace the cloth, and tape it. Use two landscape staples to hold the splice in place. In the case of a corner, peel back geotextile fabric and slice the core of the two adjoining legs at 45 degree angles which mirror each other; overlap the edges by one corrugation; return grey geotextile fabric, tape and staple the corner together.



## CONNECTING THE MAT TO THE T RISER



A convenient T-riser with dual entry allows for either end of the loop of mat to be secured to the riser. Slide the mat into each end of the riser and tape the edge to prevent wet concrete from entering. Cap the riser to ensure no concrete enters. T Riser caps can be purchased in lieu of duct tape. A pres-tub of PVC pipe can also serve the same purpose. See steps 8-9 of the previous

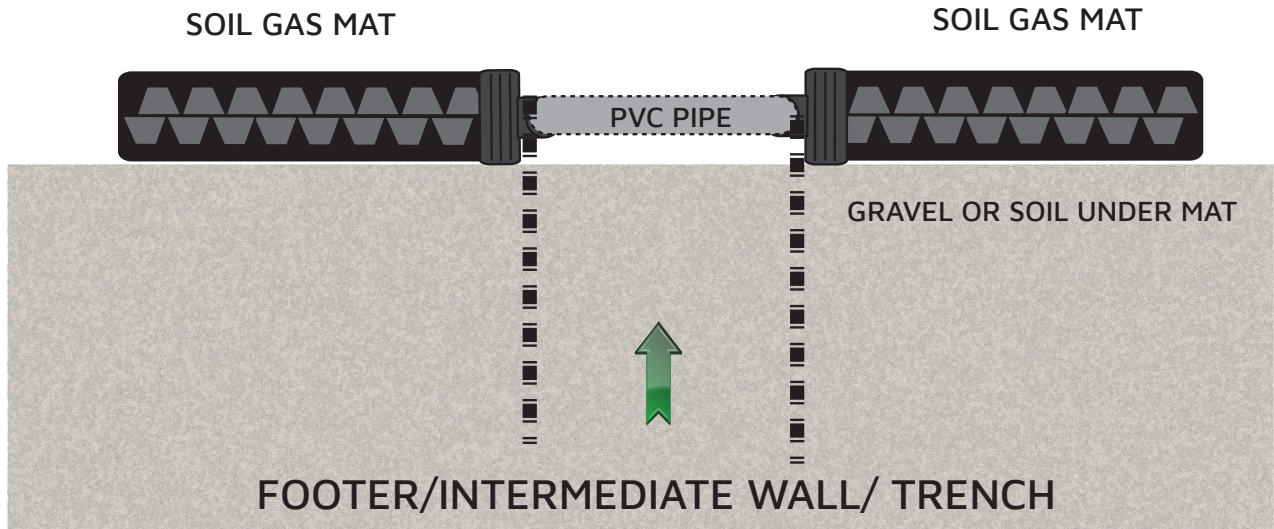


# TRENCH & FOOTER CROSSINGS

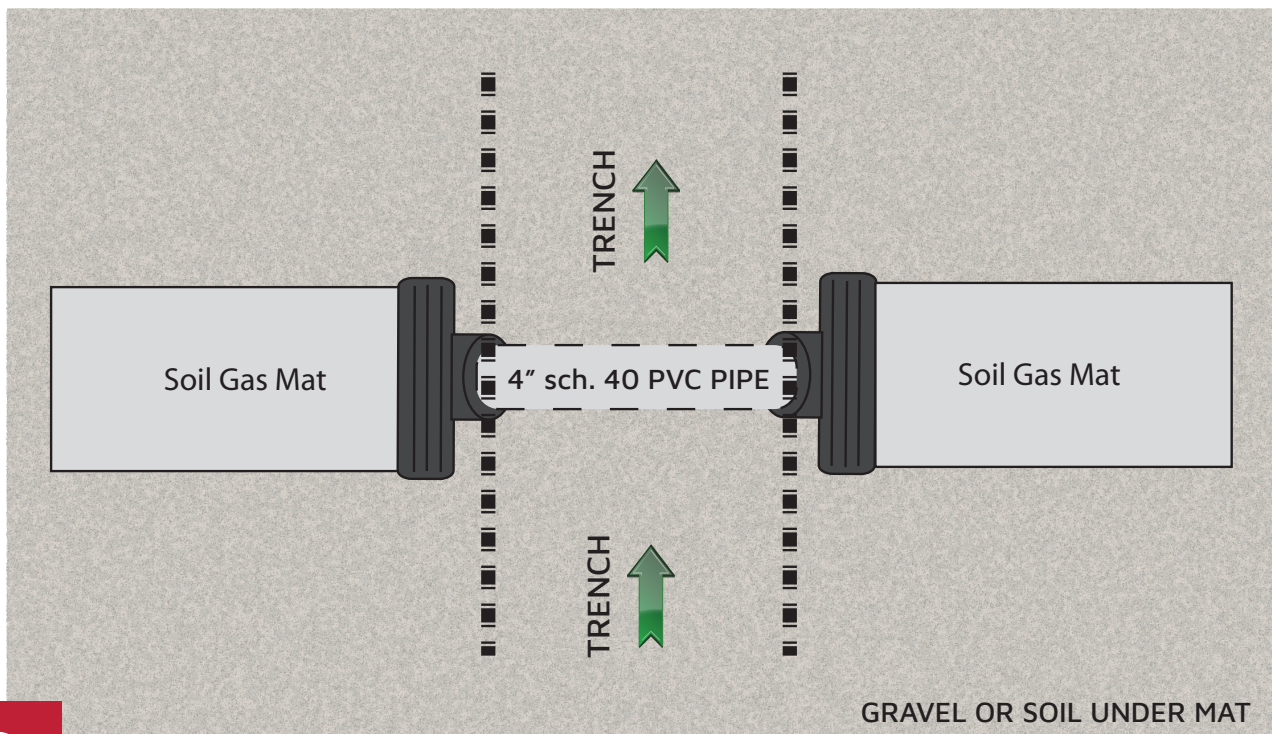
## FLAT OUTLET

SGC to PVC transition

**SIDE VIEW** GOING THRU FOOTER/ INTERMEDIATE WALL



**TOP VIEW** GOING OVER FOOTER/WALL/TRENCH

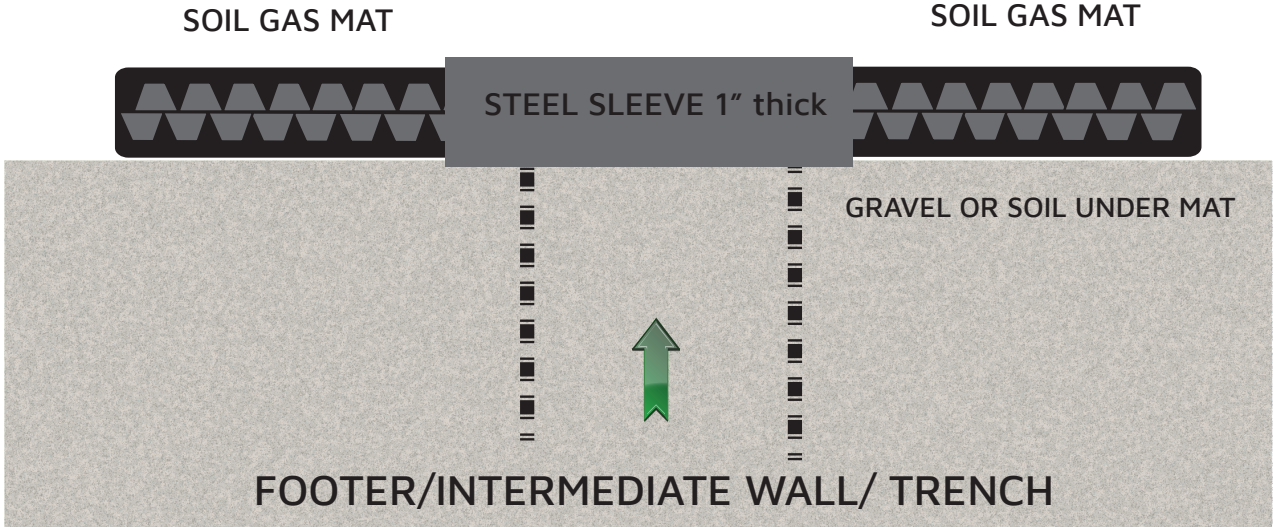




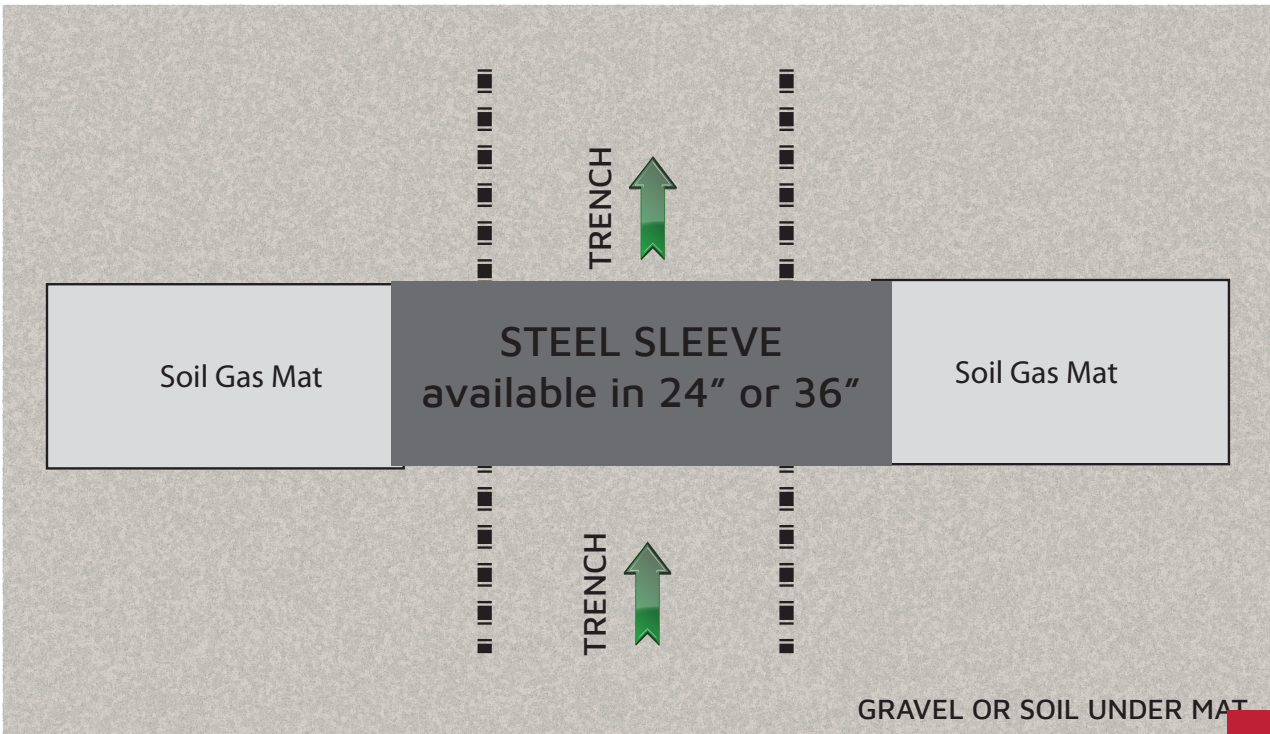
# STEEL SLEEVE

24" (36") x 1" x 12"

## SIDE VIEW GOING THRU FOOTER/ INTERMEDIATE WALL



## TOP VIEW GOING OVER FOOTER/WALL/TRENCH



IDEAL SHORT TRENCHES

## POURING CONCRETE

The filter fabric that comes sewn around the soil gas collector prevents the wet concrete from entering the mat and reducing its air collection capacity. The only precaution that needs to be taken is that the fabric is duct taped closed at seams of splices and corner to sufficiently keep the uncured concrete from entering.

The mat also needs to be secured to the soil with landscape staples to prevent the concrete from lifting off the soil while it is being applied. Re-enforcing bars and wire can be laid on top of the mat.

Note: the mat is strong enough (4,300 psf) to withstand concrete workers and their wheel barrows.



## radon risk

# radon-induced lung cancer claims the lives of over **22,000** Americans each year

- FACT:** Radon is found in all 50 US states. The US EPA action level is 4.0 pci/L or higher
- FACT:** Homes without basements are still at risk
- FACT:** Radon is the leading cause of lung cancer among “never smokers”
- FACT:** Radon is a natural part of the Uranium 238 breakdown chain
- FACT:** Breathing 6.2 pci/L is the equivalent radiation dosage of a chest x-ray every other day for your lungs
- FACT:** Radon is colorless, odorless and invisible to the naked eye
- FACT:** Radon testing is cheap and you can do it yourself

get the facts @

[www.RadonReality.com](http://www.RadonReality.com)

## about us

### Professional Discount Supply | Radon

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a phone call away.



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