

Vapor Pin®

Standard Operating Procedure

Installation of the Mini Vapor Pin® Sampling Device

Scope & Purpose

Scope

This standard operating procedure describes the installation and use of the Mini Vapor Pin® Sampling Device for use in sub-slab soil-gas sampling.

Purpose

The purpose of this procedure is to assure good quality control in field operations and uniformity between field personnel in the use of the Mini Vapor Pin® Sampling Device.

Equipment Needed

- Assembled Mini Vapor Pin® (FIGURE 1)
 - FLX-VP™ barb fitting with O-ring
 - Mini Vapor Pin® Base
- Vapor Pin® Cap
- Installation/Extraction Tool
- Rotary Hammer Drill
 - 5/8-Inch (16mm) diameter hammer bit
 - 1½-Inch (38mm) diameter hammer bit for flush mount applications
- ¾-Inch (19mm) diameter bottle brush
- Wet/Dry Vacuum with HEPA filter (optional)
- Dead blow hammer
- VOC-free hole patching material (hydraulic cement) and a putty knife or trowel
 - This is for repairing the hole following the extraction of the Mini Vapor Pin® Sampling Device
- Stick-up Drilling Guide (highly recommended)

Figure 1. Assembled Mini Vapor Pin®



Installation Procedure

1. Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding.
2. Set up wet/dry vacuum to collect drill cuttings.
3. Drill a 5/8-inch (16mm) diameter hole through the slab and approximately 1-inch (25mm) into the underlying soil to form a void. The hole must be 5/8-inch (16mm) in diameter to ensure a seal.
 - The drilled hole must be perpendicular to the slab for the mandatory Secure Cover to seat correctly. It is strongly recommended that the Mini Vapor Pin® Drilling guide be used for this purpose (Figure 2).
4. Remove the drill bit, brush the hole with the bottle brush and remove the loose cuttings with the vacuum.
 - Ensure the diameter of the hole will accommodate the Mini Vapor Pin® Sampling Device by inserting the top of the Mini Vapor Pin® Sampling Device into the hole. (Figure 3). If the Mini Vapor Pin® Sampling device is tight, ream the hole with the bit and re-try.
5. Assemble your Mini Vapor Pin® Sampling Device and Vapor Pin® Sleeve (Figure 1).
6. Place the lower end of the assembled Mini Vapor Pin® Sampling Device into the drilled hole (Figure 4). Place the small hole located in the handle of the Installation/Extraction Tool over the barb fitting and tap the Mini Vapor Pin® Sampling Device into place using a dead blow hammer (Figure 5) until the top of the Mini Vapor Pin® Sampling Device is flush with the slab (Figure 6).
 - Make sure the Installation/Extraction Tool is aligned parallel to the Mini Vapor Pin® Sampling Device to avoid damaging the barb fitting. During installation, the silicon sleeve will slide onto the Mini Vapor Pin® Sampling Device.

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Installation of the

7. Remove the barb fitting and screw the Mini Pin™ Sampling Device Secure Cover onto the Mini Pin™ (Figure 7). Allow 20 minutes or more (consult applicable guidance for your situation) for the sub-slab soil-gas conditions to re-equilibrate prior to sampling.

Figure 2.



Figure 3.



Figure 4.



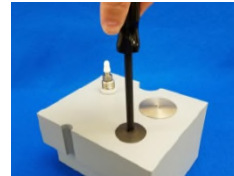
Figure 5.



Figure 6.



Figure 7.



Sampling

1. Remove the secure Cover, re-install the barb fitting and connect the Nylaflow® sample tubing to the barb and begin sampling.
2. Create a connection by using a short piece of Tygon™ tubing to join the Vapor Pin® Sampling Device with the Nylaflow tubing. Put the Nylaflow tubing as close to the Vapor Pin® Sampling Device as possible to minimize contact between soil gas and Tygon™ tubing. You do not **have** to use Nylaflow tubing, any stiff tubing will suffice (Figure 8).
 - If you wish to directly connect to a Swagelok fitting, T0-17 tube, or quick connect, use those accessories instead of the barb fitting (Figure 9).
3. Conduct leak tests in accordance with applicable guidance. If the method of leak testing is not specified, an alternative can be the use of a water dam and vacuum pump, as described in the SOP for Leak Testing via Mechanical Means (Figure 10).

Figure 8.

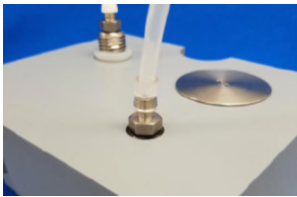


Figure 9.

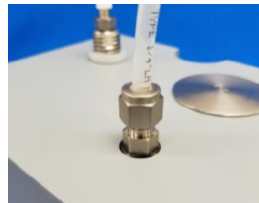


Figure 10.



Post Sample for Mini Pin™

1. When you are finished with your sampling, replace the barb fitting or accessory with the Mini Vapor Pin® Sampling Device Secure Cover until the next event (Figure 11).

Figure 11.

