Standard Operating Procedure

Using the

Versa Pin® Sampling Device

Scope & Purpose

Scope

This standard operating procedure describes the installation of the Versa 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 Versa Pin® sampling device. Please read the entire SOP before proceeding.

Equipment Needed

- Versa Pin® Sampling Device
- Versa Pin® Sleeve
- Vapor Pin® Cap
- Installation/Extraction Tool
- Spanner
- Stainless Steel Secure Cover
- Versa Hammer (Optional/Recommended)
- 1 ⅝-Inch (41.275mm) diameter bottle brush
- Wet/Dry Vacuum with HEPA filter (optional)
- Dead Blow Hammer
- Rotary Hammer Drill
    - 1½-Inch (38mm) diameter hammer bit
- Thin wire, if passive sampling (Generally supplied by the passive sampler vendor)
- 9/16-Inch Socket wrench

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. To install the Versa Pin® sampling device, drill a 1½-inch (38mm) diameter hole all the way to the void space/sampling space. The hole must be 1½-inch (38mm) in diameter to ensure a seal, and deep enough to accommodate suspended sampling or logging devices. **The Versa Pin® sampling device performs best in slabs that are 6" or more in thickness. The Versa Pin® sampling device can be used in thinner slabs, but not as a flush mount application.**
4. Remove the drill bit, brush the hole with the bottle brush and remove the loose cuttings with the vacuum.
5. Assemble the Versa Pin® sampling device (Figure 1).
6. Place the lower end of the Versa Pin® into the drilled hole. Place the small hole located in the handle of the Installation/Extraction Tool, over the Versa Pin® to protect the barb fitting and tap the Versa Pin® sampling device into place using a dead blow hammer (Figure 2). Make sure the Installation/Extraction Tool is aligned parallel to the Versa Pin® sampling device to avoid damaging the barb.
    - **For easier installation, we highly recommend renting/purchasing the Versa Hammer. The Versa Hammer fits within a rotary hammer drill and drives the Varsa Pin® sampling device into the hole when the drill is in hammer mode.**
7. Place the Vapor Pin® Cap on the Versa Pin® sampling device to prevent vapor loss prior to sampling (Figure 3).
8. To deploy a passive sampler or logging device, use a 9/16-inch socket wrench to remove the top portion of the Versa Pin® sampling device and access the Versa Hook (Figure 4). Attach your preferred passive sampler or logging device to the Versa Hook, tighten the hook and place the sampler or logging device into the throat of the installed Versa Pin® body.
9. If the Vera Pin® sampling device will be used for active sampling (e.g., into an evacuated canister), 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 1.



Figure 2.



Figure 3.

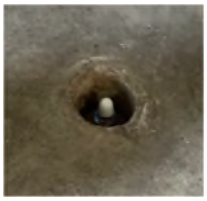


Figure 4.



Active Sampling

1. Remove the Vapor Pin® Cap and connect your sample tubing to the barb fitting of the Versa Pin® sampling device.
2. Create a connection by using a short piece of Tygon™ tubing to join the Versa Pin® sampling device with the rigid tubing used for sampling [(e.g., Nylaflow or Teflon) (Figure 5)]. Push the end of the rigid tubing as close to the Versa Pin® barbed fitting as possible to minimize contact between soil gas and the softer Tygon™ tubing.
3. Prior to sampling, conduct a leak test in accordance with applicable guidance. If a tracer leak test (e.g., helium leak testing) is not specified, refer to the SOP Leak Testing the Vapor Pin® Sampling Device, via Mechanical Means (Figure 6). For flush-mount installations, distilled water can be poured directly into the 1½ inch (38mm) hole.

Figure 5.



Figure 6.

