Standard Operating Procedure

Installation of the Vapor Pin® Insert

Vapor Pin® Insert – Updated 12/2/2025

Scope & Purpose

Scope

This standard operating procedure describes the installation of the Vapor Pin® Insert in a pre-construction/pre-pour or post construction situation (Figure 1).

Purpose

The purpose of this procedure is to assure good quality control in field operations and uniformity between field personnel, barrier and concrete installers in the use of the Vapor Pin® Insert. The Vapor Pin® Insert is used to facilitate the collection of soil gas samples and pressure measurements beneath engineered vapor intrusion barriers (e.g., Geo-Seal®), or vapor mitigation coatings (e.g., Retro-Coat™).

Equipment Needed

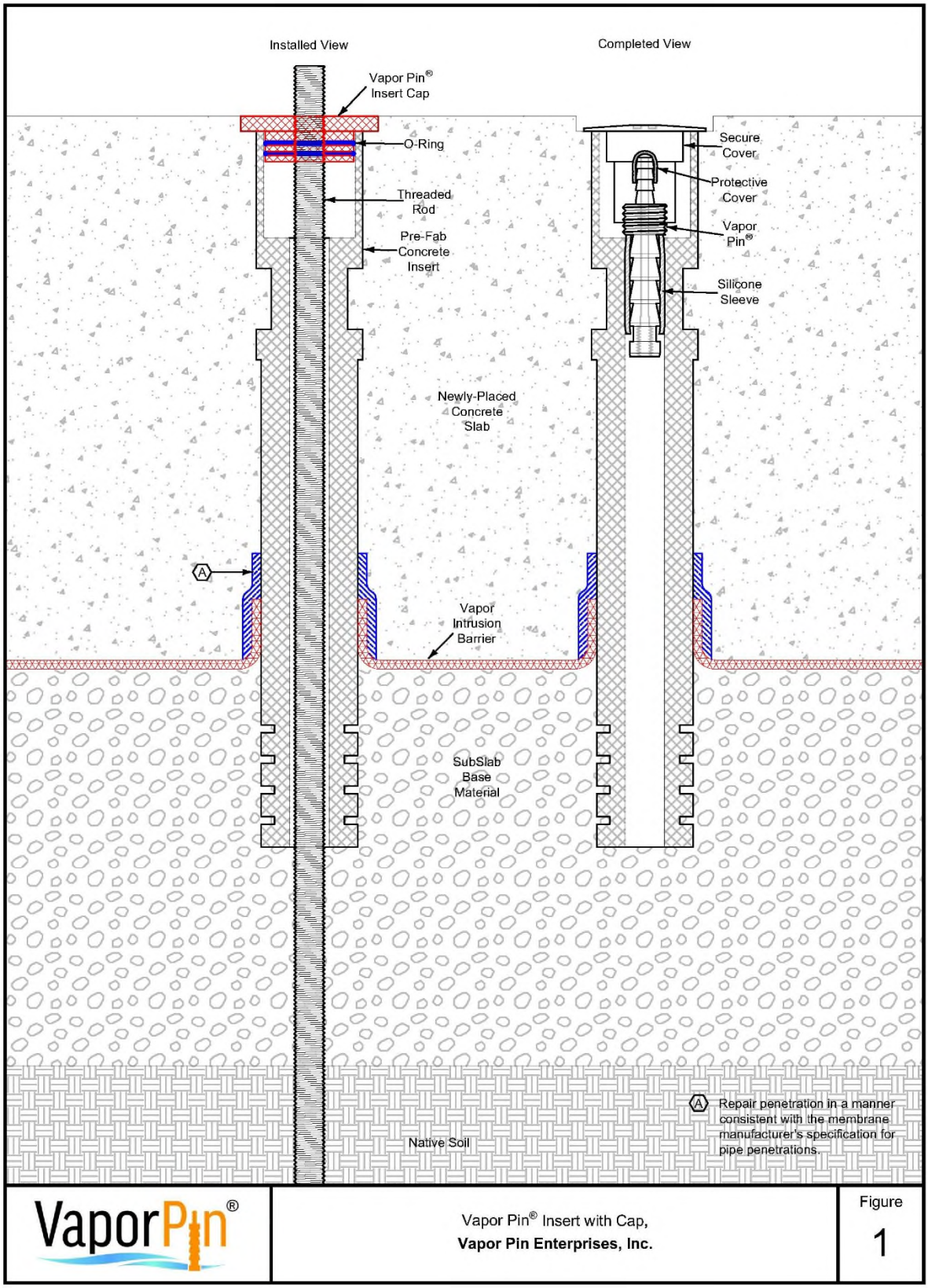
- Vapor Pin® Insert
- Vapor Pin® Insert Cap
- Hacksaw (option)
- Power drill and small diameter bits (optional)
- Threaded rod (½" – 13 Thread Size)
- Dead blow hammer

Installation Procedure (Pre-Construction/Pre-Pour)

1. Locate the desired position (horizontally and vertically) for the top of the Vapor Pin® Insert per the designed plan.
2. The base of the Vapor Pin® Insert must sit below the vapor barrier/liner (Figure 1). Trim the insert to fit. If additional length is required extend it by sliding it into a length of 1½-inch-diameter Schedule 40 PVC pipe, making sure the Vapor Pin® Insert sits below the vapor barrier/liner. The Vapor Pin® Insert and PVC pipe may be joined using PVC cement or a similar adhesive. Allow adequate curing time before sampling. Vent holes may be added at the bottom of the extension, beneath the liner, to promote airflow.
3. Assemble the Vapor Pin® Insert and Cap. Press the Vapor Pin® Insert Cap into the top of the insert. Position the assembly on the threaded rod so the top of the cap aligns with the design elevation of the finished floor. Ensure the insert is positioned perpendicular to the slab so that the Vapor Pin® Sampling Device Secure Cover seats uniformly with the floor surface as in the designed plan. Avoid bending the rod, as it may inhibit its removal after the concrete has cured. Also avoid damaging the threads on the threaded rod.
4. Provide stability during the concrete pour. If additional stability is desired, an optional wooden form may be installed at the base of the Vapor Pin® Insert. Set the wooden form halfway into the subsurface, then secure the Vapor Pin® Insert by driving screws through the wooden base and into the base of the Vapor Pin® Insert. The insert base should remain positioned below the barrier.
5. Marry the barrier to the Insert per the barrier manufacture's specification prior to pouring the concrete slab.
6. Monitor the Vapor Pin® Insert during concrete placement. Observe the Vapor Pin® Insert throughout the concrete pour to confirm it remains stable and maintains its intended orientation and elevation. Although adjustments cannot be made once the barrier has been sealed to the insert, continuous visual monitoring is essential to ensure the insert is not displaced or deflected during concrete placement and finishing.
7. After the concrete has set, remove the threaded rod and the Vapor Pin® Insert Cap and install any of your preferred Vapor Pin® Sampling Devices in the Vapor Pin® Insert.

Installation Procedure (Pre-Existing Slabs)

1. Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding.
2. Locate the desired position (horizontally and vertically) of the top of the Vapor Pin® Insert per the designed plan.
3. Pierce the barrier with a threaded rod of sufficient length to extend slightly above the elevation of the finished floor and into the subgrade a sufficient depth to provide support for the Vapor Pin® Insert. Make sure the rod is perpendicular to the designed floor surface. Avoid bending the rod, as it may inhibit its removal after the concrete has cured. Also avoid damaging the threads on the threaded rod.
4. The base of the Vapor Pin® Insert must sit below the vapor barrier/liner (Figure 1). Trim the insert to fit. If additional length is required extend it by sliding it into a length of 1½-inch-diameter Schedule 40 PVC pipe, making sure the Vapor Pin® Insert sits below the vapor barrier/liner. The Vapor Pin® Insert and PVC pipe may be joined using PVC cement or a similar adhesive. Allow adequate curing time before sampling. Vent holes may be added at the bottom of the extension, beneath the liner, to promote airflow.
5. Assemble the Vapor Pin® Insert and Cap by pressing the Vapor Pin® Insert Cap into the top of the Vapor Pin® Insert. Position the assembly on the threaded rod so that the top of the Vapor Pin® Insert Cap lies flush with the elevation of the finished floor. It is important that the position of the Vapor Pin® Insert be perpendicular to the slab so that the Vapor Pin® Sampling Device Secure Cover meets uniformly with the floor.
6. Marry the barrier to the Insert per the barrier manufacture's specification prior to pouring the concrete slab.
7. After the concrete has set, remove the threaded rod and the Vapor Pin® Insert Cap and install any of your preferred Vapor Pin® Sampling Devices in the Vapor Pin® Insert.


Installed View
Completed View
Vapor Pin®
Insert Cap
O-Ring
Threaded
Rod
Pre-Fab
Concrete
Insert
Secure
Cover
Protective
Cover
Vapor
Pin®
Silicone
Sleeve
Newly-Placed
Concrete
Slab
A
Vapor
Intrusion
Barrier
SubSlab
Base
Material
Native Soil
A Repair penetration in a manner consistent with the membrane manufacturer's specification for pipe penetrations.
VaporPin®
Vapor Pin® Insert with Cap,
Vapor Pin Enterprises, Inc.
Figure
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