

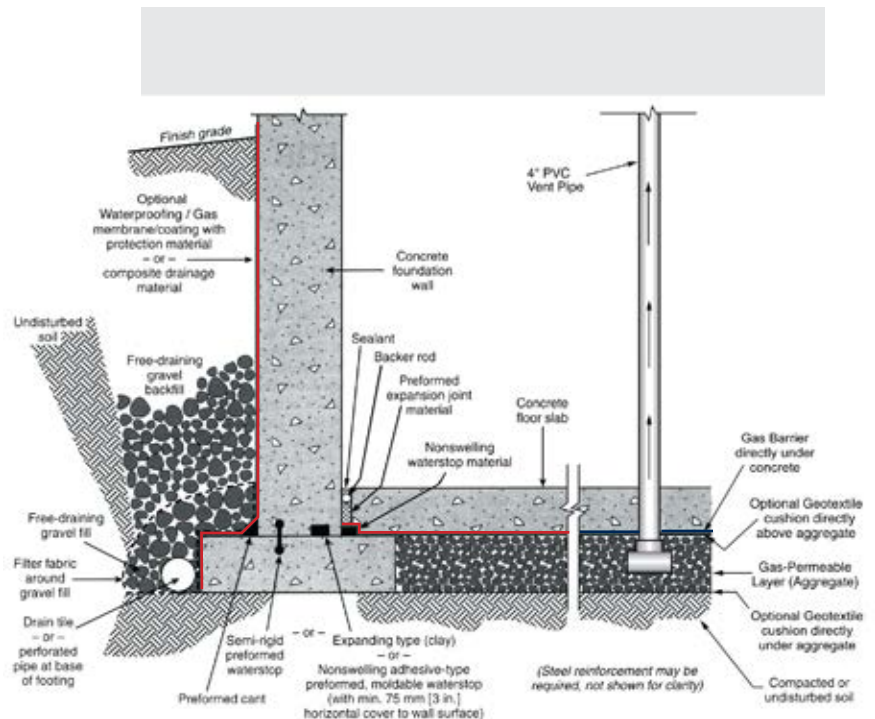
VAPORFLEX® PREMIUM INSTALLATION GUIDE

INSTALLATION GUIDELINES

With VaporSeal™ Tape

Read these instructions thoroughly before installation to ensure proper use of VaporFlex® Premium ASTM E 1465, ASTM E 2121, and ASTM E 1643 also provide valuable information regarding the installation of vapor/gas barriers. When installing this product, contractors shall conform to all applicable local, state, and federal regulations and laws pertaining to residential and commercial building construction. This document is meant to provide general guidelines for installation of VaporFlex Premium. It does not account for site specific requirements.

- When VaporFlex® Premium gas barrier is used as part of an active control system for radon or other gas, a ventilation system will be required.
- If designed as a passive system, it is recommended to install a ventilation system that could be converted to an active system if needed.



Elements of a moisture/gas-resistant floor system.
General illustration only. (Note: This example shows multiple options for waterstop placement)

VAPORFLEX® PREMIUM

Placement

Level and tamp or roll granular base as specified. A base for a gas reduction system may require a 4" to 6" gas-permeable layer of clean coarse aggregate as specified by your architectural or structural drawings after installation of the recommended gas collection system. In this situation, a cushion layer consisting of a non-woven geotextile fabric placed directly under VaporFlex® Premium will help protect the barrier from damage due to possible sharp coarse aggregate.

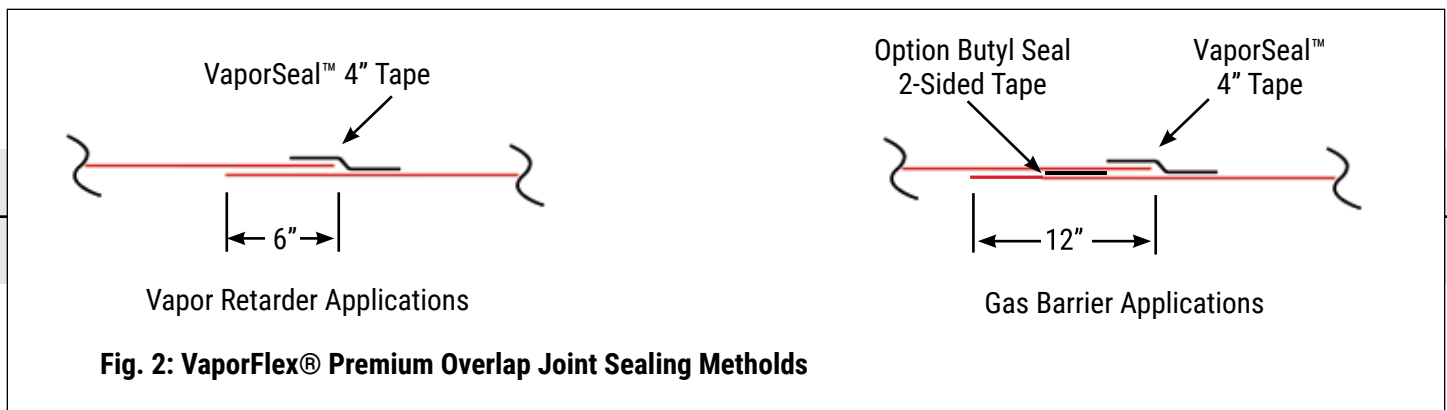
1.2. Unroll VaporFlex® Premium running the longest dimension parallel with the direction of the pour and pull open all folds to full width. (Fig. 1)

1.3. Lap VaporFlex® Premium over the footings and seal with Butyl Seal tape at the footing-wall connection. Prime concrete surfaces, when necessary, and assure they are dry and clean prior to applying Butyl Seal Tape. Apply even

and firm pressure with a rubber roller. Overlap joints a minimum of 6" and seal overlap with 4" VaporSeal™ Tape. When used as a gas barrier, overlap joints a minimum of 12" and seal in-between overlap with an optional 2-sided Butyl Seal Tape. Then seal with 4" VaporSeal™ Tape centered on the overlap seam. (Fig. 2)



Fig. 1: VaporFlex® Premium Overlapping Roll-out Method.



PIPE BOOT INSTALLATION

Single Penetration

1.4. Seal around all plumbing, conduit, support columns, or other penetrations that come through the VaporFlex® Premium membrane.

1.4a. **Method 1:** Pipes four inches or smaller can be sealed with VaporBoot Plus preformed pipe boots. VaporBoot Plus

preformed pipe boots are formed in steps for 1", 2", 3", and 4" PVC pipe or IPS size and are sold in units of 12 per box (Fig. 3 & 5). Pipe boots may also be fabricated from excess VaporFlex® Premium membrane (Fig. 4 & 6) and sealed with VaporBoot Tape or VaporSeal™ Tape (sold separately).

1.4b. **Method 2:** To fabricate pipe boots from VaporFlex® Premium excess material (see Fig. 4 & 6 for A-F):

A) Cut a square large enough to overlap 12" in all directions.

B) Mark where to cut opening on the center of the square and cut four to eight slices about 3/8" less than the diameter of the pipe.

C) Force the square over the pipe leaving the tightly stretched cut area around the bottom of the pipe with approximately a 1/2" of the boot material running vertically up the pipe. (No more than a 1/2" of stretched boot material is recommended)

D) Once the boot is positioned, seal the perimeter to the membrane by applying 2-sided Butyl Seal Tape in between the two layers. Secure the boot down firmly over the membrane taking care not to have any large folds or creases.

E) Use VaporBoot Tape or VaporSeal™ Tape to secure the boot to the pipe.

VaporBoot Tape (Option): Fold tape in half lengthwise, remove half of the release liner, and wrap around the pipe allowing 1" extra for overlap sealing. Peel off the second half of the release liner and work the tape outward gradually forming a complete seal.

VaporSeal™ Tape (Option): Tape completely around the pipe overlapping the VaporFlex® Premium square to create a tight seal against the pipe.

F) Complete the process by taping over the boot perimeter edge with VaporSeal™ Tape to create a monolithic membrane between the surface of the slab and gas/moisture sources below and at the slab perimeter. (Fig. 4 & 6)

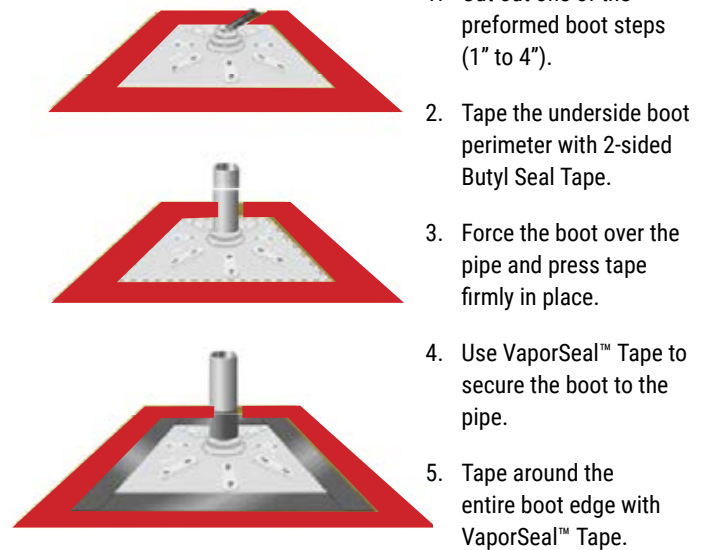


Figure 3: Method 1

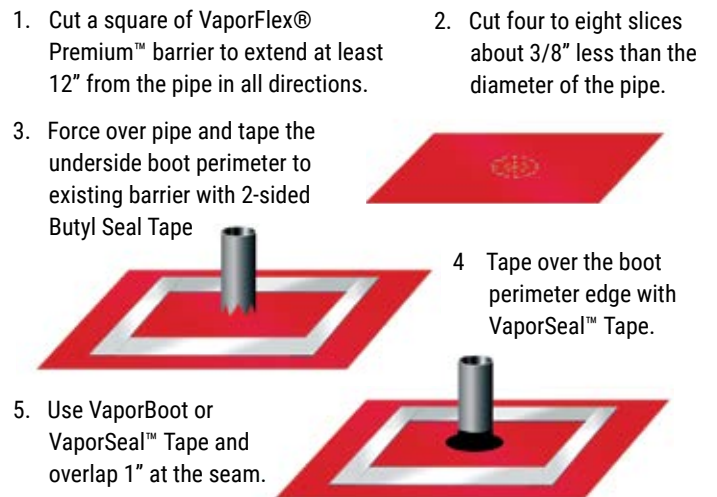


Figure 4: Method 2

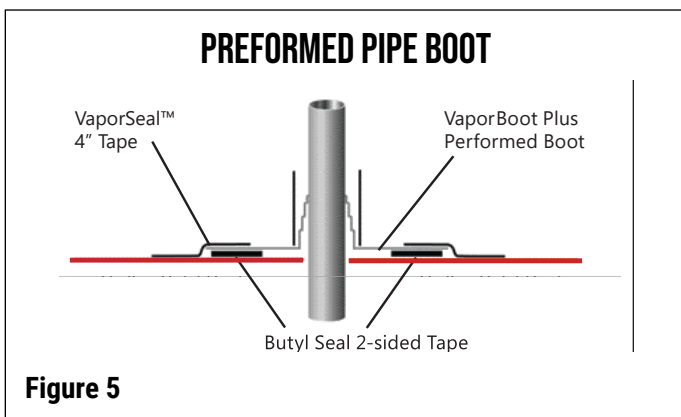


Figure 5

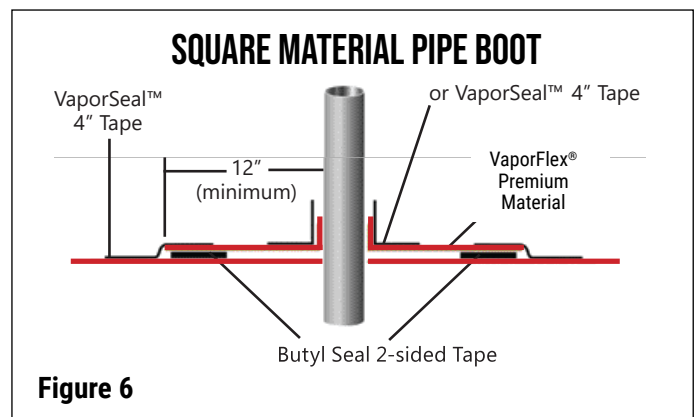


Figure 6

PIPE BOOT INSTALLATION

Multiple Penetration

Option 1

1.5. Sealing side-by-side multiple penetrations:

- A) Cut a patch large enough to overlap 12" in all directions (Fig. 7) of penetrations.
- B) Mark where to cut openings and cut four to eight slices about 3/8" less than the diameter of the penetration for each.
- C) Force patch material over penetration to achieve a tight fit and form a lip.
- D) Once the patch is positioned, seal the perimeter to the membrane by applying 2-sided Butyl Seal Tape in-between the two layers. (Fig. 8)
- E) After applying Butyl Seal Tape between the patch and membrane, tape around each of the penetrations and the patch with VaporSeal™ 4" tape. (Fig. 9) For additional protection apply POUR-N-SEAL™ or an acceptable polyurethane elastomeric sealant around the penetrations. (Fig. 10)

Option 2

1.6. POUR-N-SEAL™ method of sealing side-by-side multiple penetrations:

- A) Install the vapor barrier as closely as possible to

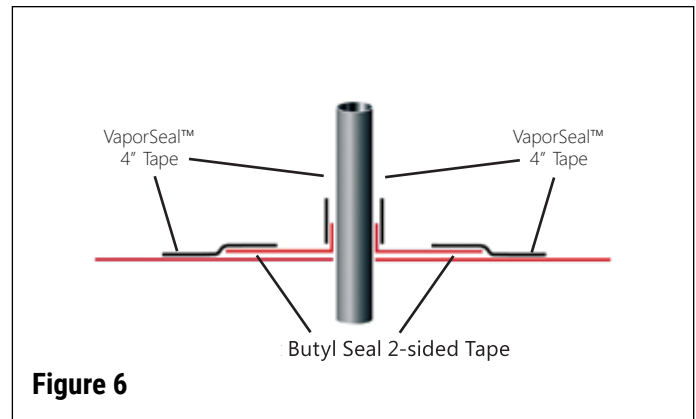


Figure 6

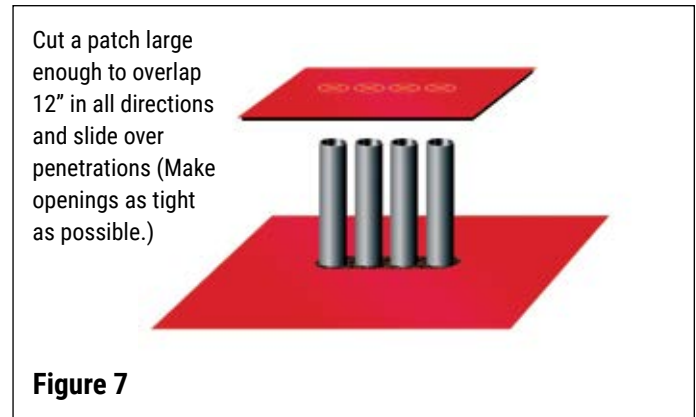


Figure 7

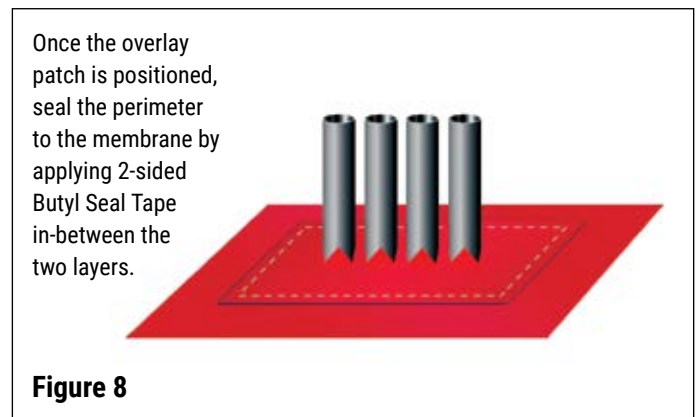


Figure 8

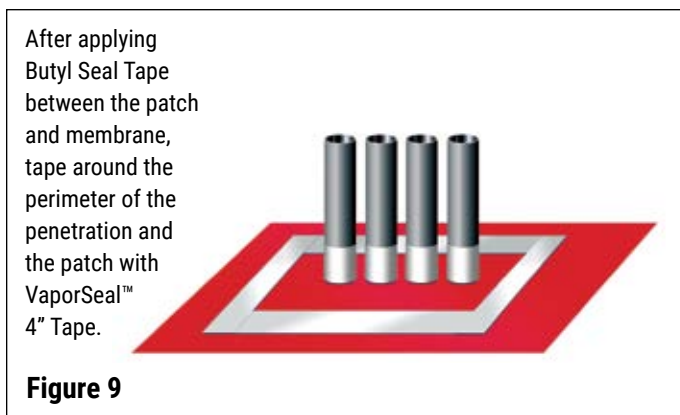


Figure 9

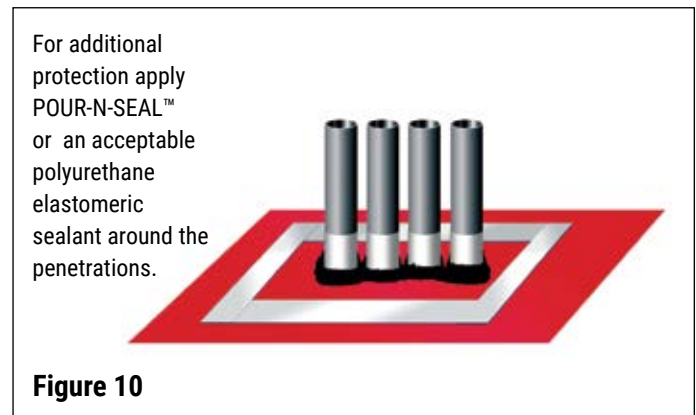


Figure 10

pipe penetrations to minimize the amount of POUR-N-SEAL™ necessary to seal around all penetrations.

B) Once the barrier is in place, remove soil or other particles with a dry cloth or a fine broom to allow for improved adhesion to the POUR-N-SEAL™ liquid.

C) Create a dam around the penetration area approximately 2" away from the pipe or other vertical penetrations by removing the release liner from the back of a 1" weather stripping foam and adhere it to the vapor barrier. Form a complete circle to contain the POUR-N-SEAL™ materials (Fig. 11).

D) Once mixed, pour contents around the pipe penetrations. If needed, a brush or a flat wooden stick can be used to direct the sealant completely around penetrations creating a complete seal (Fig. 12-13).

E) DO NOT leave excess POUR-N-SEAL™ in the container for longer than the time it takes to pour the sealant.

VAPORFLEX® PREMIUM

Repair instructions

1.7. Proper installation requires all holes and openings to be repaired prior to placing concrete. When patching small holes, simply cut a 12" long piece of 12" wide VaporSeal™ tape. Remove the release liner and center it over the opening. Apply pressure to create a seal (Fig. 14-15).

1.8. When installing VaporFlex® Premium around pipe penetrations, vertical columns, electrical ducts, and other obstructions, you will find it necessary to cut it to the nearest outside edge. This cut can be easily sealed with 12" wide VaporSeal™ tape by simply centering it over the cut, 6" on either side. Once the tape is placed correctly, apply pressure to assure a complete seal (Fig. 16).

Reminder Note: All holes or penetrations through the membrane will need to be patched with 12" VaporSeal™ Tape.



Figure 11



Figure 12



Figure 13



Figure 14



Figure 15

VAPORFLEX® PREMIUM Protection

2.1. When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect VaporFlex® Premium. Carelessness during installation can damage the most puncture-resistant membrane. Sheets of plywood cushioned with geotextile fabric temporarily placed on VaporFlex® Premium provide for additional protection in high-traffic areas including concrete buggies.

2.2. Use only brick-type or chair-type reinforcing bar supports to protect VaporFlex® Premium from puncture.

2.3. Avoid driving stakes through VaporFlex® Premium. If this cannot be avoided, each individual hole must be repaired per section 1.7.

2.4. To avoid penetrating VaporFlex® Premium when installing screed supports, utilize non-penetrating support, such as the Mako® Screed Support System (Fig. 17). Avoid driving stakes through VaporFlex® Premium. If this cannot be avoided, each individual hole must be repaired per figures 14-15.

2.5. If a cushion or blotter layer is required in the design between VaporFlex® Premium and the slab, additional care should be given if sharp crushed rock is used. Washed rock will provide less chance of damage during placement. Care must be taken to protect the blotter layer from precipitation before concrete is placed.

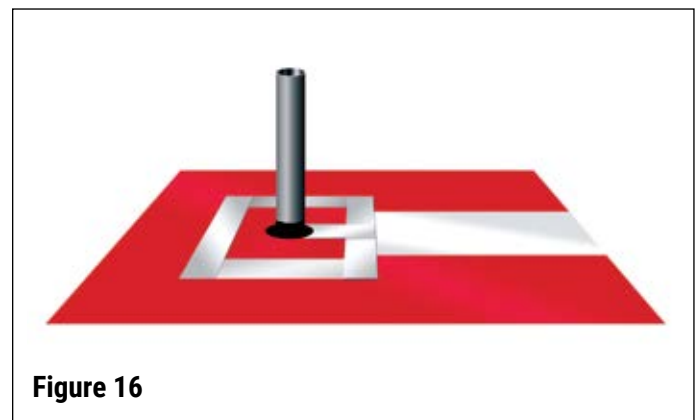


Figure 16



Figure 17