Submittal Package

PERMINATOR - EVOH

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W. R. MEADOWS®

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PERMINATOR - EVOH

NO. 723-D

DATA SHEET

MasterFormat:
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MAY 2018
(Supersedes July 2017)

PERMINATOR® EVOH

Underslab Gas Vapor Barrier

DESCRIPTION

PERMINATOR EVOH is a seven-layer co-extruded barrier manufactured from state-of-the-art polyethylene and EVOH resins. Designed to provide superior resistance to gas and moisture transmission, PERMINATOR EVOH is a highly resilient underslab gas/vapor barrier designed to restrict naturally occurring gases, such as radon, methane, gasoline, solvents, oils, and hydrocarbons, from migrating through the ground and into the concrete slab.

USES

When properly installed, PERMINATOR EVOH resists gas and moisture migration into the building envelope to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building, including floors, walls, and crawl spaces. PERMINATOR EVOH protects flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold, and degradation.

FEATURES/BENEFITS

- Resistant to gasoline, oils, solvents, hydrocarbons, radon, and methane.
- Available in 150' (45.7 m) long rolls.
- Helps reduce the penetration of moisture and water vapor through the slab into the structure.
- Helps reduce fungus, mildew, and mold.
- Tough enough to withstand normal construction jobsite conditions and traffic … will not crack, puncture, snag, split, or tear easily.
- Seven-layer construction with EVOH gas barrier core.

PACKAGING

10' (3 m) x 150' (45.7 m) Rolls

SPECIFICATIONS

- Meets or exceeds all requirements of ASTM E 1745-11 Class A, B & C.

APPLICATION

Surface Preparation ... Level, tamp, or roll earth or granular material beneath the slab base as specified by supplied architectural drawings. Follow ASTM E-1643-10 (standard practice and procedure for installation of vapor retarder used in contact with earth or fill under concrete slabs). Reference American Concrete Institute (ACI) 302.1R-15 Section 6.1.4 – Base Material for sub-grade preparation prior to placement of PERMINATOR.

Horizontal Application ... Unroll 150' (45.7 m) PERMINATOR EVOH over the area where the slab is to be poured. Cut to size if necessary. PERMINATOR should completely cover the pour area. All joints/seams, both side and end, should be overlapped 12" (304.8 mm) and taped using 4" (101.6 mm) wide PERMINATOR EVOH TAPE. (Note: The PERMINATOR EVOH TAPE area of adhesion should be free from dust, dirt, and moisture to allow maximum adhesion of the pressure-sensitive tape.) To ensure placement of laps, PERMINATOR BUTYL TAPE should be used underneath the overlap area to hold membrane in place as PERMINATOR EVOH TAPE is applied.
The most efficient installation method includes placing PERMINATOR EVOH on top of the footing and against the vertical wall. This will sandwich PERMINATOR EVOH between the footing, vertical wall, and poured concrete floor. This will help protect the concrete slab from external moisture sources once the slab has been placed.
Before placing concrete slab, make sure all penetrations, block outs, and damaged areas are repaired/addressed. For detailed information on detailing penetrations, such as pipe clusters, please refer to INSTALLATION GUIDELINES: PERMINATOR EVOH PENETRATIONS available at www.wrmeadows.com.

Numerous municipal building codes do not allow the placement of vapor barriers over the footing, due to breaking of the bond between the wall and footing. Although this is not an optimal application method, W. R. MEADOWS approves this alternate method when required by building code.

CONTINUED ON THE REVERSE SIDE...

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TECHNICAL DATA

Properties	Test Method	Result
Appearance		White/Green
Thickness, Nominal		20 Mil (0.51 mm)
Weight		102 lb./MSF (498 g/m^2)
Classification	ASTM E 1745	Class A, B, and C
Tensile Strength	ASTM E 154, Section 9, (D-882)	58 lbf (10.2 Kn/m)
Impact Resistance	ASTM D 1709	2600 g
Permeance (New Material)	ASTM E 154, Section 7 ASTM E 96, Procedure B	0.0098 Perms grains/(ft²·hr·in·Hg) [0.0064 Perms g/(24hr·m²·mm Hg)]
Permeance (After Conditioning) (Same Measurement as Above Performance)	ASTM E 154 Section 8, E96 Section 11, E96 Section 12, E96 Section 13, E96	 0.0079 (0.0052) 0.0079 (0.0052) 0.0097 (0.0064) 0.0113 (0.0074)
WVTR	ASTM E 96 Procedure B	0.0040 grains/hr-ft² (0.0028 gm/hr-m²)
Benzene Permeance	Aqueous Phase Film Permeance	1.57E-10 m/s
Toluene Permeance	Aqueous Phase Film Permeance	2.18E-10 m/s
Ethylbenzene Permeance	Aqueous Phase Film Permeance	1.71E-10 m/s
M & P Xylenes Permeance	Aqueous Phase Film Permeance	1.62E-10 m/s
O Xylene Permeance	Aqueous Phase Film Permeance	1.53E-10 m/s
Perchloroethylene (PCE)	Aqueous Phase Film Permeance	1.5 x 10-⁹ m/s
Trichloroethylene (TCE)	Aqueous Phase Film Permeance	2.4 x 10-⁹ m/s
Radon Diffusion Coefficient	K124/02/95	< 1.1 x 10^{-13} m^2/s
Methane Permeance	ASTM D 1434	3.68E-¹² m/s Gas Transmission Rate (GTR): 0.32 mL/m²•day•atm
Maximum Static Use Temperature		180° F (82° C)
Minimum Static Use Temperature		-70° F (-57° C)

LEED INFORMATION

May help contribute to LEED credits:

- EAp2: Minimum Energy Performance
- EAc2: Optimize Energy Performance
- MRc9: Construction and Demolition Waste Management

For CAD details, most current data sheet, further LEED information, and SDS, visit www.wrmeadows.com.

LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

Disclaimer

The information contained herein is included for illustrative purposes only, and to the best of our knowledge, is accurate and reliable. W. R. MEADOWS, INC. cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As W. R. MEADOWS, INC. has no control over the use to which others may put its product, it is recommended that the products be tested to determine if suitable for specific application and/or our information is valid in a particular circumstance. Responsibility remains with the architect or engineer, contractor and owner for the design, application and proper installation of each product. Specifier and user shall determine the suitability of products for specific application and assume all responsibilities in connection therewith.

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product: PERMINATOR EVOH
Part Number: 5244100
Manufacturer: W. R. MEADOWS, INC.
Address: 300 Industrial Drive, Hampshire, Illinois 60140
Telephone: (847) 214-2100
In case of emergency, dial (800) 424-9300 (CHEMTREC)
Revision Date: 12/7/2023
Product Use: Underslab Gas Vapor Barrier

SECTION 2: HAZARDS IDENTIFICATION/EXPOSURE LIMITS

HMIS	
|Health|	|0|
|Flammability|	|0|
|Reactivity|	|0|
|Personal Protection|	| |

Product is classified as non-hazardous per OSHA 1910.1200. Perminator is defined by OSHA as an "article." A manufactured item that is formed to a specific shape or design during manufacture that does not release or result in exposure to a hazardous chemical under normal use conditions.

SECTION 3: HAZARDOUS COMPONENTS

Chemical Name:	CAS Number	% by Weight	SARA 313	Vapor Pressure (mm Hg@20°C)	LEL (@24°C)
None					

N/A: Not Applicable

Under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1966 (SARA) and 40 CFR Part 372, chemicals listed on the 313 List (40 CFR Part 373.65) are identified under the heading "SARA" 313."

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Not expected to be an exposure route.
SKIN CONTACT: Not Expected to be an exposure route.
INHALATION: Not expected to be an exposure route.
INGESTION: Not expected to be an exposure source.
MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND CHRONIC: See Section Eleven for Symptoms/Effects.

SECTION 5: FIRE AND EXPLOSIVES HAZARDS

FLASHPOINT: Not applicable; product is a solid.
EXTINGUISHING MEDIA: Water fog, foam, dry chemical.
CHEMICAL/COMBUSTION HAZARDS: Carbon monoxide, carbon dioxide, and incomplete combustion products.
PRECAUTIONS/PERSONAL PROTECTIVE EQUIPMENT: Avoid smoke inhalation. Use appropriate respiratory protection.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Not applicable. Product is a solid.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES: None.
SAFE STORAGE: Prevent job-site damage.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

	OSHA				ACGIH			
Chemical Name:	PEL	PEL/CEILING	PEL/STEL	SKIN	TLV	TLV/CEILING	TLV/STEL	SKIN
1. Blown Polyethylene	N/E	N/E	N/E	No	N/E	N/E	N/E	N/E

N/E = Not Established

ENGINEERING CONTROLS: None required under normal use conditions.
PERSONAL PROTECTIVE EQUIPMENT: None required under normal use conditions.

SAFETY DATA SHEET

Date of Preparation: 12/7/23 **Page 2 of 2** **5244100**

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A	**VAPOR DENSITY:** N/A	**% VOLATILE BY VOLUME:** N/A
EVAPORATION RATE: N/A	**pH LEVEL:** N/A	**% VOLATILE BY WEIGHT:** N/A
WEIGHT PER GALLON: N/A	**PRODUCT APPEARANCE:** White/Gold Film	**VOC CONTENT:** N/A
ODOR: None	**ODOR THRESHOLD:** N/D	**MELTING/FREEZING POINT:** N/D
FLASH POINT: See Section 5	**FLAMMABILITY:** See Section 5	**UEL/LEL:** N/D
VAPOR PRESSURE: N/D	**RELATIVE DENSITY:** N/D	**SOLUBILITY:** N/D
PARTITION COEFFICENT: N/D	**AUTOIGNITION TEMPERATURE:** N/D	**DECOMPOSITION TEMPERATURE:** N/D
VISCOSITY: N/D	*N/A : Not Applicable*	*N/D: Not Determined*

SECTION 10: STABILITY/REACTIVITY

STABILITY: Stable.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS AND MATERIALS TO AVOID: None recognized.
HAZARDOUS DECOMPOSITION PRODUCTS: None recognized.

SECTION 11: TOXICOLOGICAL INFORMATION

EYE CONTACT: Not anticipated to be an exposure route.
SKIN CONTACT: Direct contact may cause slight skin irritation.
INHALATION: Not anticipated to be an exposure route.
INGESTION: Not anticipated to be an exposure route.
SIGNS AND SYMPTOMS: None recognized.
AGGRAVATED MEDICAL CONDITIONS: None recognized.
OTHER HEALTH EFFECTS: None recognized

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: N/E **DEGRADABILITY:** N/E **BIOACCUMULATIVE POTENTIAL:** N/E
SOIL MOBILITY: N/E **OTHER ADVERSE EFFECTS:** None Recognized *N/E: Not Established*

SECTION 13: WASTE DISPOSAL INFORMATION

WASTE DISPOSAL INFORMATION: Product is classified as a non-hazardous waste.

SECTION 14: TRANSPORTATION INFORMATION

HAZARDOUS/NON-HAZARDOUS MATERIAL: Not regulated by DOT.
UN NUMBER: None **HAZARD CLASS:** N/A **PACKING GROUP:** N/A
UN PROPER SHIPPING NAME: N/A
ENVIRONMENTAL HAZARDS: None recognized.
BULK TRANSPORTATION INFORMATION: None.
SPECIAL PRECAUTIONS: None. *N/A: Not Applicable*

SECTION 15: REGULATORY INFORMATION

OTHER REGULATORY CONSIDERATIONS: None recognized.

SECTION 16: OTHER INFORMATION

PREPARATION DATE: 12/7/2023
PREPARED BY: Dave Carey

The information contained herein is based on the data available to us and is believed to be correct. However, we make no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. We assume no responsibility for injury from the use of this product described herein.

GUIDE SPECIFICATION FOR PERMINATOR® EVOH UNDERSLAB GAS AND VAPOR BARRIER

SECTION 07 26 16

Below Grade Vapor Retarders

Revision Date: July 3, 2019

Specifier Notes: This guide specification is written according to the Construction Specifications Institute (CSI) MasterFormat. The section must be carefully reviewed and edited by the architect or engineer to meet the requirements of the project. Coordinate this section with other specification sections and the drawings.

Specifier Notes: PERMINATOR EVOH is a seven-layer co-extruded barrier manufactured from state-of-the-art polyethylene and EVOH resins. Designed to provide superior resistance to gas and moisture transmission, as well as water vapor, PERMINATOR EVOH is a highly resilient underslab gas/vapor barrier designed to restrict naturally occurring gases, such as radon, methane, gasoline, solvents, oils, and hydrocarbons, from migrating through the ground and into the concrete slab.

When properly installed, PERMINATOR EVOH resists gas and moisture migration into the building envelope to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building, including floors, walls, and crawl spaces. PERMINATOR EVOH protects flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold, and degradation.

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Application of an underslab soil gas barrier.

1.02 RELATED SECTIONS

Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.

A. Section 03 30 00 - Concrete.

B. Section 07 10 00 – Dampproofing and Waterproofing.

C. Section 09 64 00 - Wood Flooring.

D. Section 09 65 00 - Resilient Flooring.

1.03 REFERENCES

A. ASTM D1434: Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting.

B. ASTM D1709: Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method.

C. ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials.

D. ASTM E154: Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs.

E. ASTM E1643: Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

F. ASTM E1745: Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

G. ASTM F1249: Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.

H. K124/02/95: Determination of Radon Transmittance.

1.04 SUBMITTALS

A. Comply with Section 01 33 00 - Submittal Procedures.

B. Submit manufacturer's product data and application instructions.

1.05 QUALITY ASSURANCE

A. Use an experienced installer and adequate number of skilled personnel who are thoroughly trained and experienced in the application of the soil gas barrier.

B. Obtain gas barrier materials from a single manufacturer regularly engaged in manufacturing the product.

C. Provide products which comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

1.06 PRECONSTRUCTION MEETING

A. Pre-Construction Meeting: Convene one week prior to installation of underslab soil gas barrier. Attendees to be as follows: - Architect, Engineer, General Contractor, Gas Barrier Installer, and Gas Barrier Manufacturer to discuss the installation in detail.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Store materials in a clean, dry area in accordance with manufacturer's instructions.

C. Protect materials during handling and application to prevent damage or contamination.

D. Ensure membrane is stamped with manufacturer’s name, product name, and membrane thickness at intervals of no more than 85” (220 cm).

1.08 ENVIRONMENTAL REQUIREMENTS

A. Product not intended for uses subject to abuse or permanent exposure to the elements.

B. Do not apply on frozen ground.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. W. R. MEADOWS®, INC., PO Box 338, Hampshire, Illinois 60140-0338. (800) 342-5976. (847) 683-4500. Fax (847) 683-4544. Web Site www.wrmeadows.com.

2.02 MATERIALS

A. Soil Gas Barrier
1. Performance-Based Specification: Gas barrier membrane shall be a seven layer co-extruded barrier manufactured from polyethylene and ethylene vinyl alcohol (EVOH) resins, meeting the shall meet the following minimum performance requirements:
a. Maximum Water Vapor Permeance (ASTM E154 Sections 7, 8, 11, 12, 13, by ASTM E96, Method B or ASTM F1249)
i. As received: 0.0098 perms.
ii. After Wetting and Drying: 0.0079 perms.
iii. Resistance to Plastic Flow and Temperature: 0.0079 perms.
iv. Effect Low Temperature and Flexibility: 0.0097 perms.
v. Resistance to Deterioration from Organisms and Substances in Contacting Soil: 0.0113 perms.
b. Puncture Resistance, ASTM D1709: 2,600 grams.
c. Tensile Strength, ASTM E154, Section 9: 58 Lb. Force/Inch.
d. Radon Diffusion Coefficient, k124/02/95: $<1.1 \times 10^{-13}$ m^2/s.
e. Methane Permeance, ASTM D1434: 3.68×10^{-12} GTR.
f. Aqueous Phase Film Permeance
i. Benzene Permeance: 1.57×10^{-10} m/s.
ii. Toluene Permeance: 2.18×10^{-10} m/s.
iii. Ethylbenzene Permeance: 1.71×10^{-10} m/s.
iv. M & P Xylenes Permeance: 1.62×10^{-10} m/s.
v. O Xylene Permeance: 1.53×10^{-10} m/s.

2. Proprietary-Based Specification:
a. PERMINATOR EVOH by W. R. MEADOWS.

2.03 ACCESSORIES

Specifier Notes: When PERMINATOR EVOH is to be used strictly as a water vapor barrier, only the PERMINATOR EVOH Tape is required to be used. In situations where the PERMINATOR EVOH is to be used as a soil gas barrier, PERMINATOR EVOH BUTYL TAPE is installed within a 12” (304.8 mm) overlap and then the seam is then taped with PERMINATOR EVOH Tape. Select accessories based on project requirements.

A. Seam Tape
1. High Density Polyethylene Tape with pressure sensitive adhesive. Minimum width 4” (100 mm).
a. PERMINATOR EVOH TAPE by W. R. MEADOWS.

B. Double Sided Seam Tape
1. Double sided butyl tape for overlap sealing in gas barrier installations. Minimum width 2” (50 mm).
a. PERMINATOR EVOH BUTYL TAPE by W. R. MEADOWS.

C. Pipe Collars
1. Construct pipe collars from gas barrier material and pressure sensitive tape per manufacturer’s instructions.

PART 3 EXECUTION

3.01 SURFACE PREPARATION

Specifier Notes: A base for a gas-reduction system may require a 4” - 6” (101. 6 – 152.4 mm) gas permeable layer of clean coarse aggregate as specified by architectural or structural consultant after installation of the recommended gas collection system. In this situation, a cushion layer consisting of a non-woven geotextile

fabric placed directly under PERMINATOR EVOH will help protect the barrier from damage due to possible sharp coarse aggregate. Surface preparation needs to be reviewed based on the specific project requirements.

A. Prepare surfaces in accordance with project requirements.

Specifier Notes: It may also be advisable to reference American Concrete Institute (ACI) 302.1R-15: Chapter 6, Section 6.1.4 – Base Material, for sub-grade preparation prior to placement of PERMINATOR EVOH. As this is a guide, reference to this document shall not be made in contract documents and any items in this document that the Architect/Engineer wants to be part of the contract documents, the items need to be reinstated in mandatory language for incorporation by the Architect/Engineer.

B. Level, tamp, or roll earth or granular material beneath the slab base.

3.02 EXAMINATION

A. Examine surfaces to receive membrane. Notify architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.03 INSTALLATION

Specifier Notes: If PERMINATOR EVOH is being used as strictly a vapor barrier, then delete Section B below. If the requirement is for PERMINATOR EVOH to be used as a soil gas barrier for contaminated site installation, then delete Section A. It is also advisable to review the PERMINATOR EVOH Installation Guidelines for additional installation information that may be specific for the project requirements.

A. Vapor Barrier

1. Install the vapor barrier membrane in accordance with manufacturer's instructions and ASTM E1643.

2. Unroll vapor retarder with the longest dimension parallel with the direction of the pour.

3. Lap vapor barrier over footings and seal to foundation walls with 4" (100 mm) seam tape.

4. Overlap joints 6" (152 mm) and seal with 4" (100 mm) seam tape and roll press into place.

5. Seal all penetrations (including pipes) with manufacturer's written installation procedures.

6. No penetration of the vapor retarder is allowed except for reinforcing steel and permanent utilities.

7. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6" (150 mm) and taping all four sides with tape.

B. Soil Gas Barrier

1. Install the gas barrier membrane in accordance with manufacturer's instructions and ASTM E1643.

2. Unroll gas barrier membrane with the longest dimension parallel with the direction of the pour.

3. Lap gas barrier over the footing and seal to foundation walls with 2” (50 mm) double sided butyl tape and roll press into place with rubber roller.

4. Apply gas barrier seam tape to the terminated edge of the gas barrier membrane and onto the concrete foundation.

5. Roll press into place.

4. Joint Overlap
   a. Apply double sided butyl tape 6” (150 mm) from the termination of the gas barrier membrane and press into place.
   b. Overlap the next layer of gas barrier membrane 12” (300 mm) and roll press into place.
   c. Apply gas barrier seam tape centered over the joint and roll press into place.

5. Repair of Damaged Areas
   a. Cut out damaged area of gas barrier membrane allowing for an overlap of 12” (300 mm) in all directions.
   b. Apply double sided butyl tape 6” (150 mm) from the cut edges of the gas barrier membrane in all directions and press into place.
   c. Place the new piece of gas barrier membrane overlapping the existing areas a minimum of 12” (300 mm) and roll press into place.
   d. Apply 4” (100 mm) gas barrier seam tape centered over the joint in all directions and roll press into place.

END OF SECTION

INSTALLATION GUIDELINES
PERMINATOR® EVOH

PERMINATOR EVOH is a seven-layer co-extruded barrier manufactured from state-of-the-art polyethylene and EVOH resins. Designed to provide superior resistance to gas and moisture transmission, PERMINATOR EVOH is a highly resilient underslab gas/vapor barrier designed to restrict naturally occurring gases, such as radon, methane, gasoline, solvents, oils, and hydrocarbons, from migrating through the ground and into the concrete slab. PERMINATOR EVOH in furnished in rolls which are 10′ (3 m) wide and 150′ (45.7 m) long.

This document has been created as an addendum to the PERMINATOR EVOH technical data sheet to provide the recommended procedure to use when installing PERMINATOR EVOH in applications featuring penetrations.

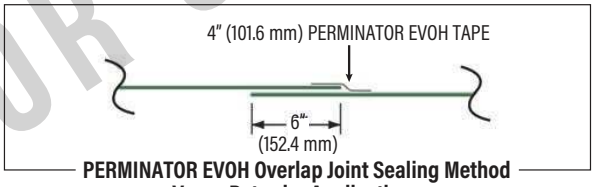
PLACEMENT

Level and tamp or roll granular base as specified. A base for a gas-reduction system may require a 4" - 6" (101. 6 – 152.4 mm) gas permeable layer of clean coarse aggregate as specified by 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 PERMINATOR EVOH will help protect the barrier from damage due to possible sharp coarse aggregate.

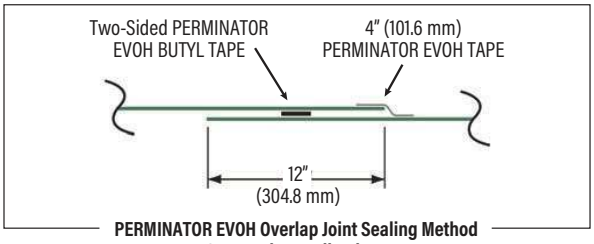
Unroll PERMINATOR EVOH running the longest dimension parallel with the direction of the pour and pull open all folds to full width.

Extend PERMINATOR EVOH across the top of the footing and turn up against vertical wall. This will sandwich PERMINATOR EVOH between the footing, wall, and poured concrete floor. Terminate PERMINATOR EVOH at full slab thickness and seal to wall with PERMINATOR EVOH BUTYL TAPE. Prime concrete surfaces, when necessary, and assure they are dry and clean prior to applying two-sided PERMINATOR EVOH BUTYL TAPE. Apply even and firm pressure with a rubber roller. Overlap joints a minimum of 6" (101.6 mm) and seal overlap with 4" (101.6 mm) PERMINATOR EVOH TAPE. When used as a gas barrier, overlap joints a minimum of 12" (304.8 mm) and seal in between overlap with two-sided PERMINATOR EVOH BUTYL TAPE. Then seal with 4" (101.6 mm) PERMINATOR EVOH TAPE centered on the overlap seam.

PERMINATOR EVOH Overlapping Roll-out Method



PERMINATOR EVOH Overlap Joint Sealing Method
Vapor Retarder Applications



PERMINATOR EVOH Overlap Joint Sealing Method
Gas Barrier Applications

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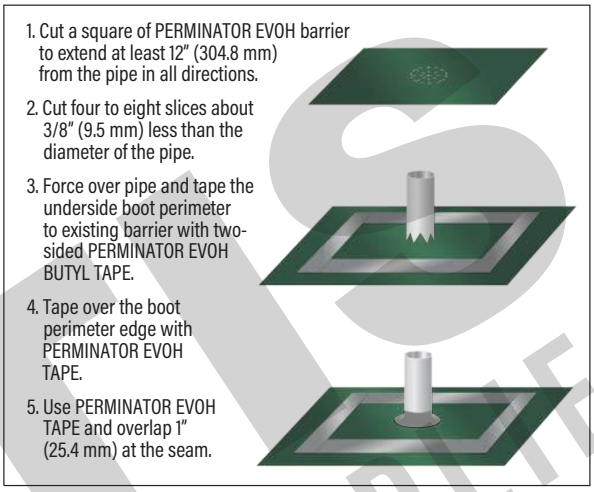
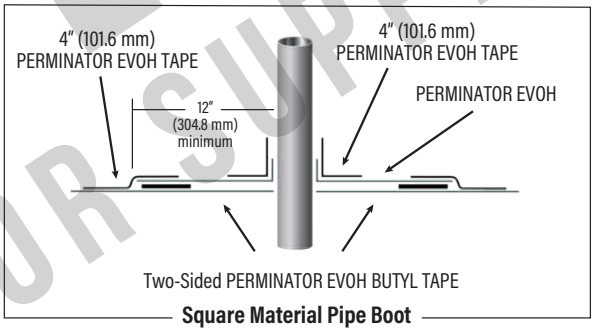
03/13/23

INSTALLATION GUIDELINES
PERMINATOR® EVOH

SINGLE PENETRATION PIPE BOOT INSTALLATION

Seal around all plumbing, conduit, support columns, or other penetrations that protrude through the PERMINATOR EVOH membrane. Fabricate pipe boots from PERMINATOR EVOH excess material. Cut a square large enough to overlap 12" (304.8 mm) in all directions. Mark where to cut opening on the center of the square and cut four to eight slices about 3/8" (9.5 mm) less than the diameter of the pipe. Force the square over the pipe leaving the tightly stretched cut area around the bottom of the pipe with approximately a 1/2" (12.7 mm) of the boot material running vertically up the pipe. No more than a 1/2" (12.7 mm) of stretched boot material is recommended. Once boot is positioned, seal the perimeter to the membrane by applying two-sided PERMINATOR EVOH BUTYL TAPE in between the two layers. Secure boot down firmly over the membrane taking care not to have any large folds or creases. Use PERMINATOR EVOH TAPE to secure the boot to the pipe. Tape completely around pipe, overlapping the PERMINATOR EVOH square, to create a tight seal against the pipe. Complete the process by taping over the boot perimeter edge with PERMINATOR EVOH TAPE to create a monolithic membrane between the surface of the slab and gas/moisture sources below and at the slab perimeter.





Square Material Pipe Boot

MULTIPLE PENETRATION PIPE BOOT INSTALLATION - OPTION 1

Cut a patch large enough to overlap 12" (304.8 mm) in all directions of penetrations. Mark where to cut openings and cut four to eight slices about 3/8" (9.5 mm) less than the diameter of the penetration for each. Force patch material over penetration to achieve a tight fit and form a lip. Once patch is positioned, seal the perimeter to the membrane by

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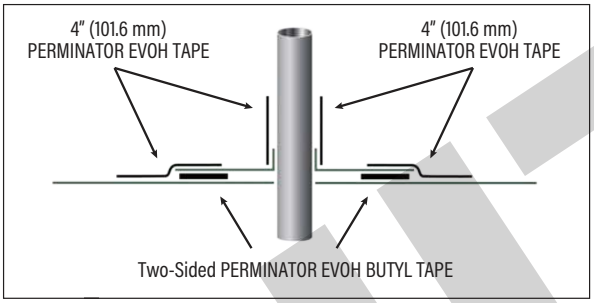
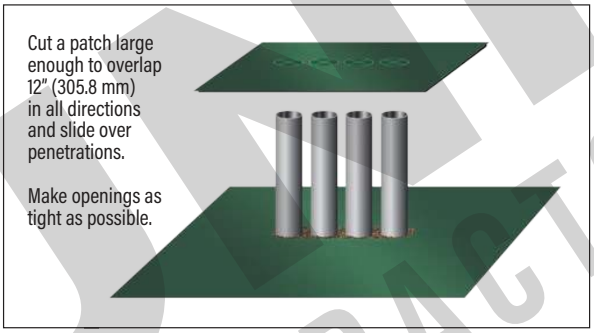
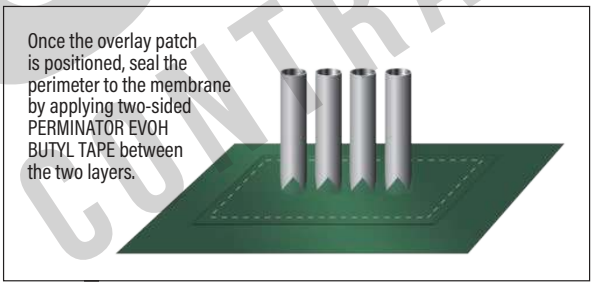
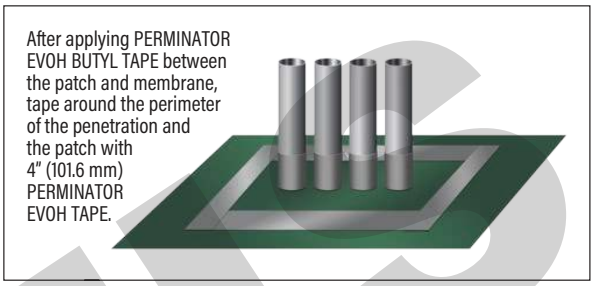
INSTALLATION GUIDELINES
PERMINATOR® EVOH

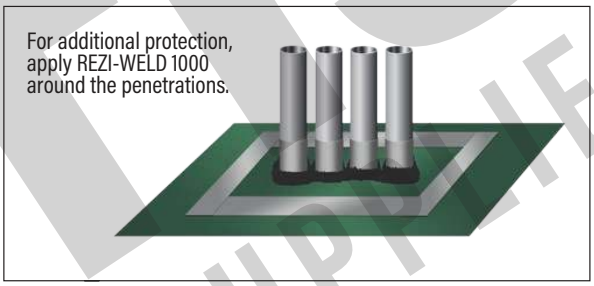
applying two-sided PERMINATOR EVOH BUTYL TAPE in between the two layers. After applying two-sided PERMINATOR EVOH BUTYL TAPE between the patch and membrane, tape around each of the penetrations and the patch with 4" (101.6 mm) PERMINATOR EVOH TAPE. For additional protection apply, REZI-WELD™ 1000 from W. R. MEADOWS around the penetrations.











MULTIPLE PENETRATION PIPE BOOT INSTALLATION - OPTION 2

Install PERMINATOR EVOH as closely as possible to pipe penetrations to minimize the amount of REZI-WELD 1000 necessary to seal around all penetrations. Once PERMINATOR EVOH is in place, remove soil or other particles with a dry cloth or a fine broom to allow for improved adhesion to the REZI-WELD 1000 material. Create a dam around the penetration area approximately 2" (50.8 mm) away from the pipe or other vertical penetrations by removing the release liner from the back of a 1" (25.4 mm) weather stripping foam and adhere to PERMINATOR EVOH. Form a complete circle to contain the REZI-WELD 1000 material. Once mixed, pour REZI-WELD 1000 around the pipe penetrations. If needed, a brush or a flat wooden stick can be used to direct REZI-WELD 1000 completely around penetrations creating a complete seal.

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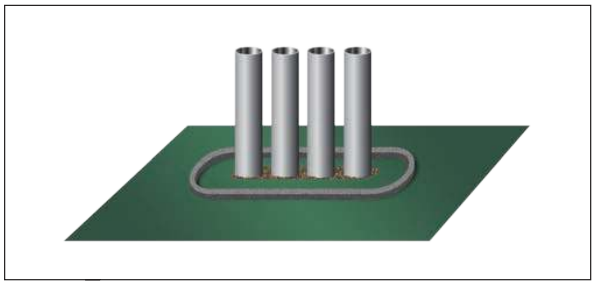
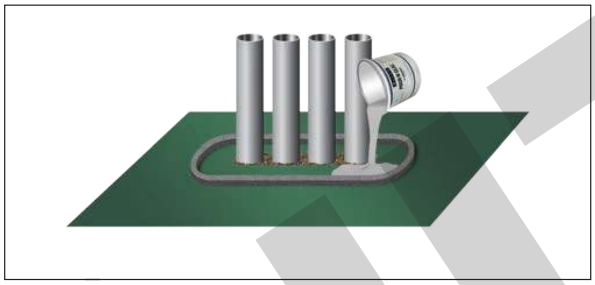
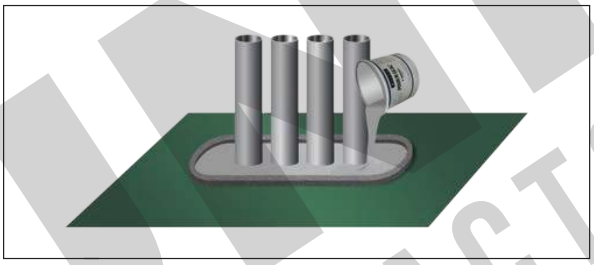
PERMINATOR® EVOH



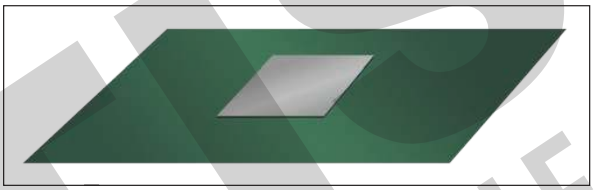




PERMINATOR EVOH REPAIR INSTRUCTIONS

LARGE PATCHES

Proper installation requires all holes and openings are repaired prior to placing concrete. When patching small holes, simply use PERMINATOR EVOH TAPE.



PERMINATOR EVOH REPAIR INSTRUCTIONS

PIPE PENETRATIONS

When installing PERMINATOR EVOH around pipe penetrations, vertical columns, electrical ducts, and other obstructions, cut the material to the nearest outside edge. This cut can be sealed with PERMINATOR EVOH TAPE by simply centering it over the cut. Once the tape is placed correctly, apply pressure to assure a complete seal. All holes or penetrations through the membrane will need to be patched with PERMINATOR EVOH TAPE.

PERMINATOR EVOH PROTECTION

When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect PERMINATOR EVOH. Carelessness during installation can damage the most puncture–resistant membrane. Sheets of plywood cushioned with geotextile fabric temporarily placed on PERMINATOR EVOH provide for additional protection in high traffic areas including concrete buggies. Use only brick-type or chair-type reinforcing

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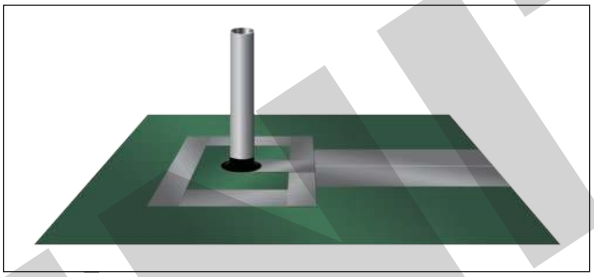
INSTALLATION GUIDELINES
PERMINATOR® EVOH

bar supports to protect PERMINATOR EVOH from puncture. Avoid driving stakes through PERMINATOR EVOH. If this cannot be avoided, each individual hole must be repaired. To avoid penetrating PERMINATOR EVOH when installing screed supports, utilize non-penetrating support. If a cushion or blotter layer is required in the design between PERMINATOR EVOH 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 blotter layer from precipitation before concrete is placed.



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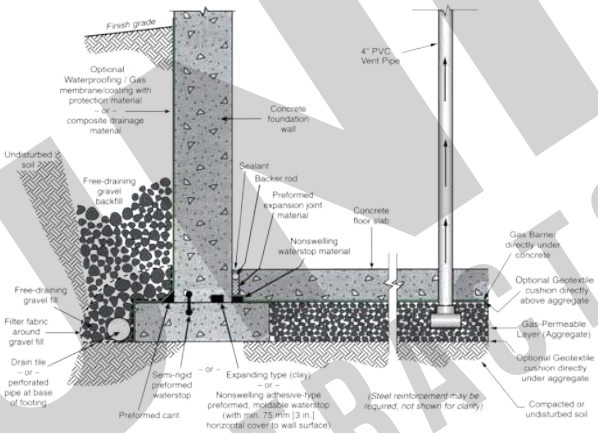
INSTALLATION GUIDELINES
PERMINATOR® EVOH PENETRATIONS

PERMINATOR EVOH is a seven-layer co-extruded barrier manufactured from state-of-the-art polyethylene and EVOH resins. Designed to provide superior resistance to gas and moisture transmission, PERMINATOR EVOH is a highly resilient underslab gas/vapor barrier designed to restrict naturally occurring gases, such as radon, methane, gasoline, solvents, oils, and hydrocarbons, from migrating through the ground and into the concrete slab. PERMINATOR EVOH is furnished in rolls which are 10′ (3 m) wide and 150′ (45.7 m) long.

This document has been created as an addendum to the PERMINATOR EVOH technical data sheet to provide the recommended procedure to use when installing PERMINATOR EVOH in applications featuring penetrations.



Elements of a moisture/gas-resistant floor system. General illustrations only.
(Note: the example show multiple options for waterstop placement.)

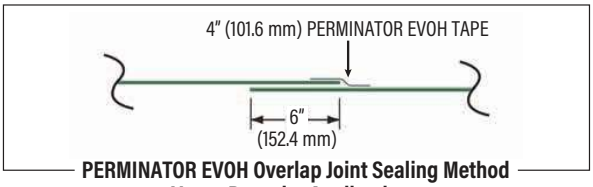
PLACEMENT

Level and tamp or roll granular base as specified. A base for a gas-reduction system may require a 4" - 6" (101. 6 – 152.4 mm) gas permeable layer of clean coarse aggregate as specified by 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 PERMINATOR EVOH will help protect the barrier from damage due to possible sharp coarse aggregate.

Unroll PERMINATOR EVOH running the longest dimension parallel with the direction of the pour and pull open all folds to full width.

Lap PERMINATOR EVOH over the footings and seal with PERMINATOR EVOH BUTYL TAPE at the footing-wall connection. Prime concrete surfaces, when necessary, and assure they are dry and clean prior to applying two-sided PERMINATOR EVOH BUTYL TAPE. Apply even and firm pressure with a rubber roller. Overlap joints a minimum of 6" (101.6 mm) and seal overlap with 4" (101.6 mm) PERMINATOR EVOH TAPE. When used as a gas barrier, overlap joints a minimum of 12" (304.8 mm) and seal in between overlap with two-sided PERMINATOR EVOH BUTYL TAPE. Then seal with 4" (101.6 mm) PERMINATOR EVOH TAPE centered on the overlap seam.

PERMINATOR EVOH Overlapping Roll-out Method



PERMINATOR EVOH Overlap Joint Sealing Method
Vapor Retarder Applications

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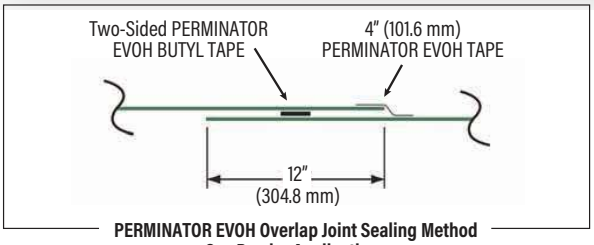
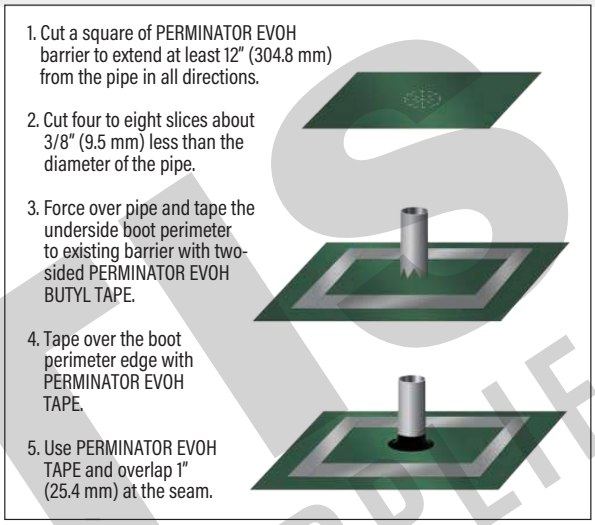
INSTALLATION GUIDELINES
PERMINATOR® EVOH PENETRATIONS

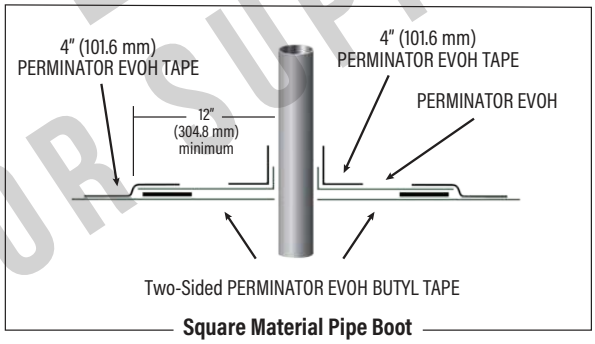


PERMINATOR EVOH Overlap Joint Sealing Method Gas Barrier Applications

SINGLE PENETRATION PIPE BOOT INSTALLATION

Seal around all plumbing, conduit, support columns, or other penetrations that protrude through the PERMINATOR EVOH membrane. Fabricate pipe boots from PERMINATOR EVOH excess material. Cut a square large enough to overlap 12" (304.8 mm) in all directions. Mark where to cut opening on the center of the square and cut four to eight slices about 3/8" (9.5 mm) less than the diameter of the pipe. Force the square over the pipe leaving the tightly stretched cut area around the bottom of the pipe with approximately a 1/2" (12.7 mm) of the boot material running vertically up the pipe. No more than a 1/2" (12.7 mm) of stretched boot material is recommended. Once boot is positioned, seal the perimeter to the membrane by applying two-sided PERMINATOR EVOH BUTYL TAPE in between the two layers. Secure boot down firmly over the membrane taking care not to have any large folds or creases. Use PERMINATOR EVOH TAPE to secure the boot to the pipe. Tape completely around pipe, overlapping the PERMINATOR EVOH square, to create a tight seal against the pipe. Complete the process by taping over the boot perimeter edge with PERMINATOR EVOH TAPE to create a monolithic membrane between the surface of the slab and gas/moisture sources below and at the slab perimeter.





Square Material Pipe Boot

MULTIPLE PENETRATION PIPE BOOT INSTALLATION - OPTION 1

Cut a patch large enough to overlap 12" (304.8 mm) in all directions of penetrations. Mark where to cut openings and cut four to eight slices about 3/8" (9.5 mm) less than the diameter of the penetration for each. Force patch material over penetration to achieve a tight fit and form a lip. Once patch is positioned, seal the perimeter to the membrane by

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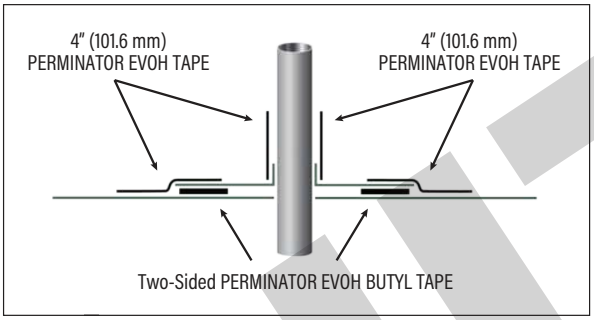
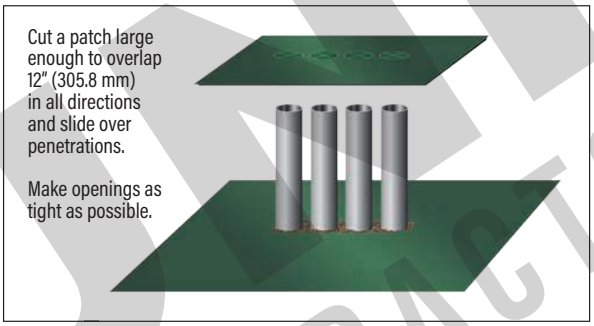
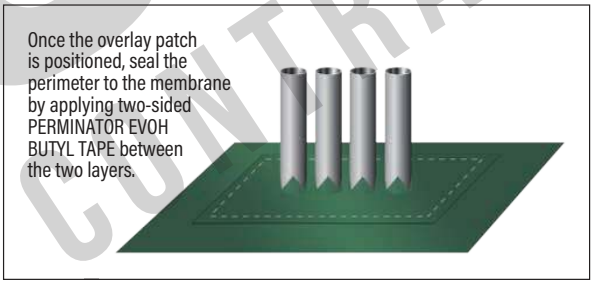
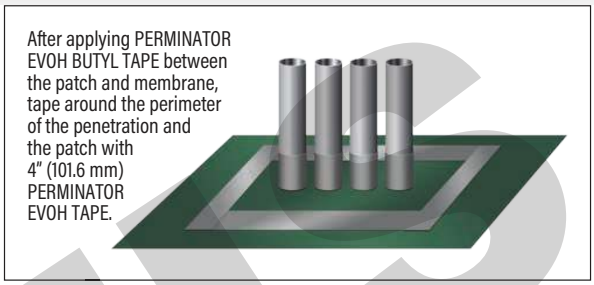
INSTALLATION GUIDELINES
PERMINATOR® EVOH PENETRATIONS

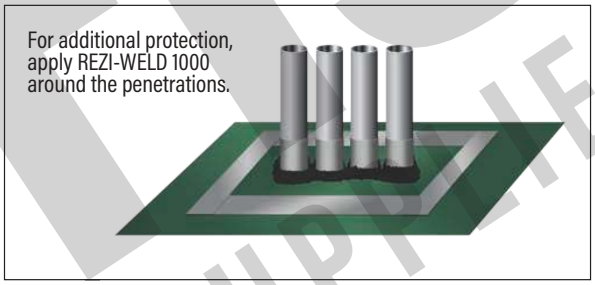
applying two-sided PERMINATOR EVOH BUTYL TAPE in between the two layers. After applying two-sided PERMINATOR EVOH BUTYL TAPE between the patch and membrane, tape around each of the penetrations and the patch with 4" (101.6 mm) PERMINATOR EVOH TAPE. For additional protection apply, REZI-WELD™ 1000 from W. R. MEADOWS around the penetrations.











MULTIPLE PENETRATION PIPE BOOT INSTALLATION - OPTION 2

Install PERMINATOR EVOH as closely as possible to pipe penetrations to minimize the amount of REZI-WELD 1000 necessary to seal around all penetrations. Once PERMINATOR EVOH is in place, remove soil or other particles with a dry cloth or a fine broom to allow for improved adhesion to the REZI-WELD 1000 material. Create a dam around the penetration area approximately 2" (50.8 mm) away from the pipe or other vertical penetrations by removing the release liner from the back of a 1" (25.4 mm) weather stripping foam and adhere to PERMINATOR EVOH. Form a complete circle to contain the REZI-WELD 1000 material. Once mixed, pour REZI-WELD 1000 around the pipe penetrations. If needed, a brush or a flat wooden stick can be used to direct REZI-WELD 1000 completely around penetrations creating a complete seal.

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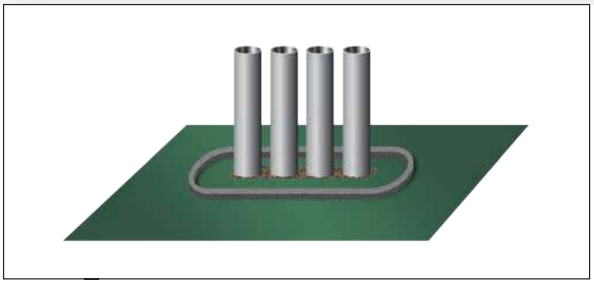
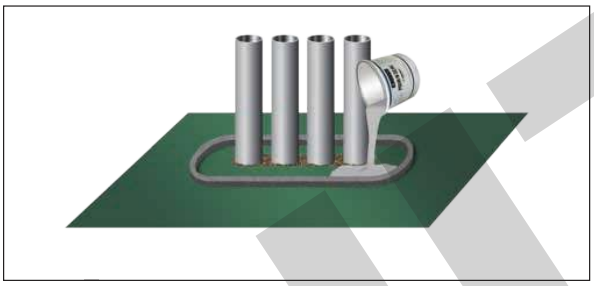
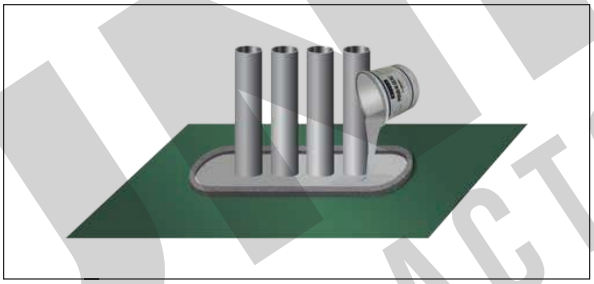
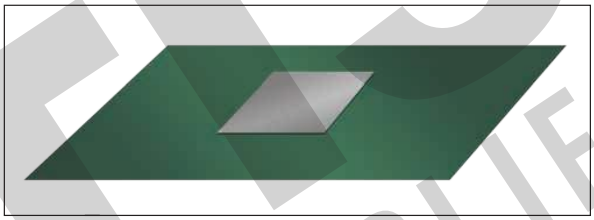
INSTALLATION GUIDELINES
PERMINATOR® EVOH PENETRATIONS









PERMINATOR EVOH REPAIR INSTRUCTIONS

LARGE PATCHES

Proper installation requires all holes and openings are repaired prior to placing concrete. When patching small holes, simply use PERMINATOR EVOH TAPE.

PERMINATOR EVOH REPAIR INSTRUCTIONS

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When installing PERMINATOR EVOH around pipe penetrations, vertical columns, electrical ducts, and other obstructions, cut the material to the nearest outside edge. This cut can be sealed with PERMINATOR EVOH TAPE by simply centering it over the cut. Once the tape is placed correctly, apply pressure to assure a complete seal. All holes or penetrations through the membrane will need to be patched with PERMINATOR EVOH TAPE.

PERMINATOR EVOH PROTECTION

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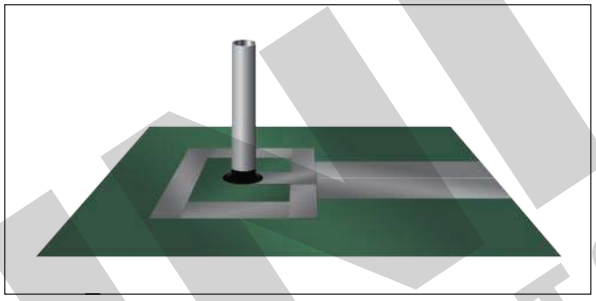
INSTALLATION GUIDELINES
PERMINATOR® EVOH PENETRATIONS

placed on PERMINATOR EVOH provide for additional protection in high traffic areas including concrete buggies. Use only brick-type or chair-type reinforcing bar supports to protect PERMINATOR EVOH from puncture. Avoid driving stakes through PERMINATOR EVOH. If this cannot be avoided, each individual hole must be repaired. To avoid penetrating PERMINATOR EVOH when installing screed supports, utilize non-penetrating support. If a cushion or blotter layer is required in the design between PERMINATOR EVOH 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 blotter layer from precipitation before concrete is placed.



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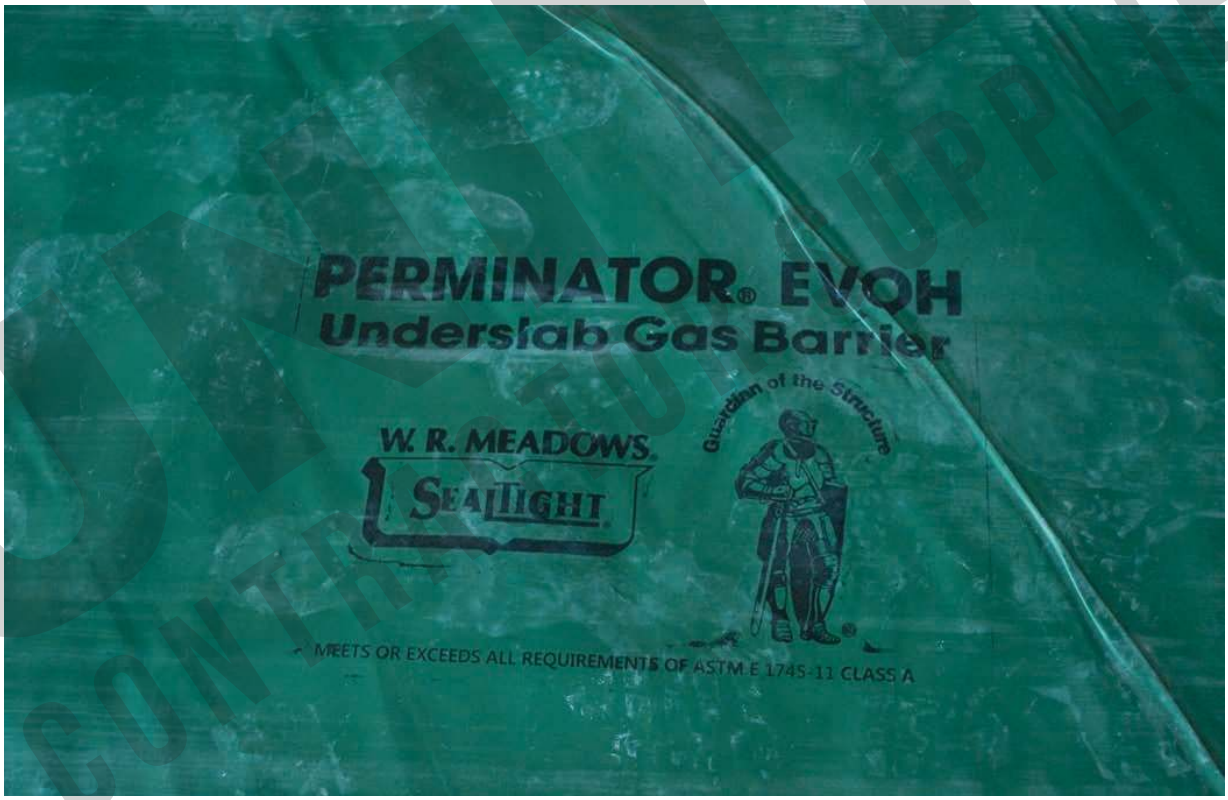
TECHNICAL BULLETIN
SEAM HEAT WELD FOR PERMINATOR® EVOH

Overlap edges 6" (152.4 mm) in preparation for thermal seaming. This overlap area must be cleaned of all dust, dirt, water and foreign debris no more than 30 minutes prior to the heat-seaming operation. Acceptable field-welding methods are thermal fusion and extrusion. The thermal energy for fusion welding can be provided by a single or dual hot wedge welder, hot air or a combination. Extrusion welding rod should be made from the same resin class as the bonding surface of the gas barrier being extruded to. Trial welds, at least 4' (1.2 m) long, shall be made on scraps of the same material being installed.

Three non-destructive test methods are available to verify field welds, including: center air channel pressure testing for double-track fusion seams, vacuum box testing for single-track fusion seams and extrusion seams or patches, and air lance testing for single-track fusion seams.



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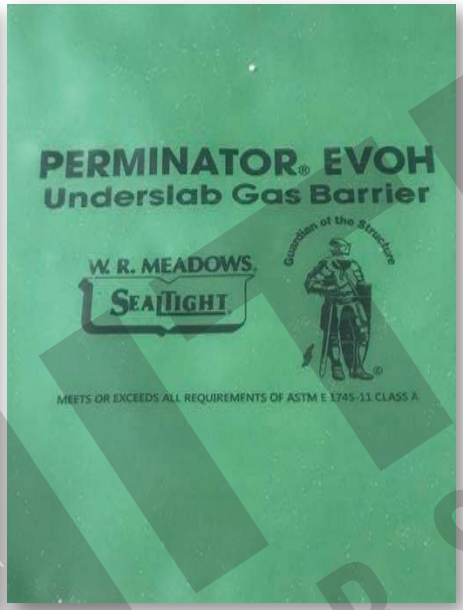

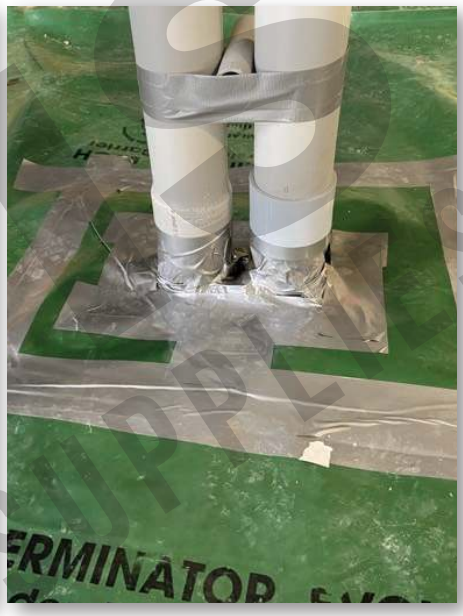

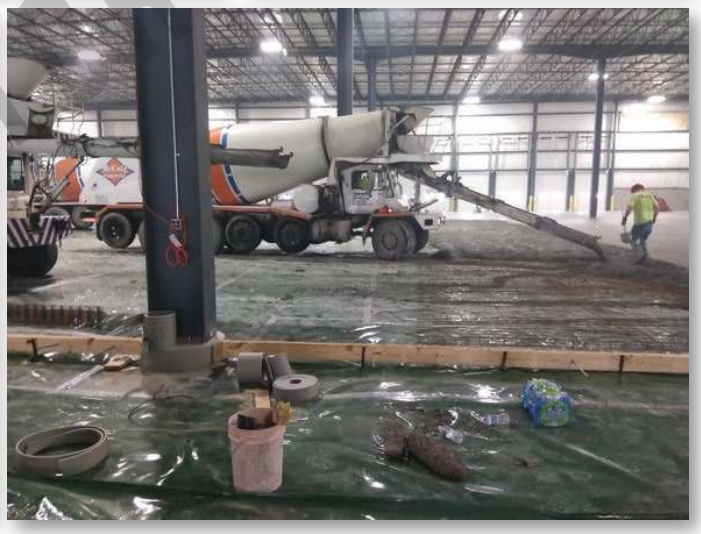

Project:	FCA Hoover	Products:	PERMINATOR® EVOH
Location:	Warren, Michigan, USA		PERMINATOR EVOH TAPE
Engineer:	IBI Group		PERMINATOR BUTYL TAPE
General Contractor:	Roncelli		SEALMASTIC™ TYPE II
Subcontractor:	Arisco Contracting Group, Inc.	Scope:	500,000 square feet
Salesperson:	Jason Everhart		

W. R. MEADOWS, INC.

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800-825-5976
FAX: 847-683-4544

September 3, 2025

W. R. MEADOWS certifies the following information for PERMINATOR® EVOH 20 Mil Underslab Gas Vapor Barrier:

LEED v4.0/4.1 MRc3: BPDO – Sourcing of Raw Materials

Manufacturing Location:	>100 miles
Raw Material Extraction Point:	Not Available
Recycled Content:	0%

LEED v4.0/4.1 EQc2: Low Emitting Materials

VOC Emissions:	This product is classified as part of the building's exterior and is not subject to CDPH VOC emissions from indoor sources test requirements.
VOC Content:	This is not a wet-applied product, and therefore, this testing does not apply.

If field sampling and/or field or laboratory testing are required, W. R. MEADOWS cannot be held responsible for any cost incurred if this product is used prior to receipt of that approval.

Should you have any questions or require additional information, please feel free to contact Technical Services or your local W. R. MEADOWS Representative.

Sincerely,

Kimberly Ann Lombardozzi

Kimberly Ann Lombardozzi, LEED AP ID+C, WELL AP, fitwel Ambassador
Sustainability Manager
W. R. MEADOWS, INC.