



VIPER® II

UNDER-SLAB VAPOR BARRIERS

20mil
class A
ASTM E 1745

15mil
class A
ASTM E 1745

10mil
class A
ASTM E 1745

10mil
class C
ASTM E 1745

8mil
class A
ASTM E 1745

6mil
class C
ASTM E 1745

VAPOR BARRIER BACKGROUND

Water vapor from sub-slab conditions will pass through the pores of an unprotected concrete slab through vapor diffusion. This vapor transmission creates a conflicted environment for the floor coating or adhesive. Because government regulations were established to reduce volatile organic compounds (VOCs) found in numerous architectural coatings, specifically floor coatings and adhesives, many solvent based flooring materials have been changed to water based. When exposed to water and alkalinity, these water based coatings and adhesives are prone to re-emulsification resulting in costly flooring failures. In addition to flooring failures, moisture migration also creates poor indoor air quality (IAQ), mold, mildew, fungi and damage to the slab and its components.

VAPOR BARRIER PURPOSE

The infiltration of water vapor and gas from the earth through concrete slabs is a costly building liability. Under-slab vapor barriers/retarders provide an inexpensive insurance policy to protect floors and other moisture sensitive equipment within the building's interior. The definition of a vapor barrier/retarder, according to ASTM E 1745, "is a material or construction that impedes the transmission of water vapor under specified conditions." By inhibiting moisture and soil gas migration, under-slab vapor barriers/retarders greatly reduce condensation, retard mold growth, provide healthy breathing conditions within a building, prevent flooring failures and aid in controlling structural degradation.

VAPOR BARRIER WHAT TO LOOK FOR

ASTM E 1745 (Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs) standardizes vapor barriers/retarders according to various performance properties. The three classes (A = highest, B = middle, C = lowest) are based on a membranes resistance to punctures, tears and water vapor. When choosing under-slab vapor barriers/retarders, it is important to look for products that are independently tested and exceed all ASTM E 1745 requirements. Furthermore, vapor barrier/retarder products should be made from virgin (non-recycled) resin to assure long term protection.

VAPOR BARRIER SOLUTION

VIPER II is the first line of defense against all damaging water vapor and soil gas threats existing below the concrete slab. VIPER II is a multi-layer, extruded, virgin polyolefin under-slab vapor barrier/retarder. The virgin resin used to manufacture VIPER II contributes to it's long term stability and prevents the material from breaking down when buried below the slab. VIPER II is engineered with superior resistance against punctures, tears and water vapor. The high puncture resistance and tensile strength greatly reduce potential damage when exposed to rigorous job site conditions. Furthermore, VIPER II products have very low water vapor permeance properties which are key to preventing water vapor migration.



ISI BUILDING PRODUCTS®

December 18, 2019

RE: Viper VaporCheck II Made in the USA

To Whom it May Concern,

This letter is to inform you that all Viper VaporCheck II products are manufactured in the United States of America.

Please feel free to contact me toll free at 866-698-6562 with any questions regarding the Viper VaporCheck II line of high performance under slab vapor barriers and retarders.

Sincerely,

Dario J Lamberti
General Manager
Engineered Films Div.

VAPOR RETARDERS

DIVISION

033000, 072600

**VIPER II**

10-MIL "CLASS C" VAPOR RETARDER

PRODUCT NAME

Viper® II 10-mil "Class C" Under-Slab Vapor Retarder

MANUFACTURER**ISI BUILDING PRODUCTS**

401 Truck Haven Road
East Peoria, IL 61611
866.698.6562 / www.isibp.com

PRODUCT DESCRIPTION**BASIC USE**

Viper II 10-mil is a unique high strength polyolefin-based under-slab vapor retarder specifically designed for preventing moisture migration through concrete slabs-on-grade. Viper II 10-mil reduces water vapor emission transfer and moisture migration from entering the building envelope on commercial, industrial and residential applications. Viper II 10-mil controls condensation, mold, mildew, degradation and prevents costly flooring failures and damage to moisture sensitive furnishings within a building's interior. Viper II 10-mil may be used to reduce radon and methane gas migration and is resistant to other adverse soil conditions.

COMPOSITION & MATERIALS

Viper II 10-mil is manufactured using the latest generation of prime virgin (non-recycled) polyolefin resin, constructed in a multi-layer plastic extrusion process and engineered with physical properties that maintain long-term performance. The multi-layer extrusion process creates an excellent balance of high puncture and tensile strength while maintaining very low water vapor permeance characteristics. This product maintains (long-term) high performance and will not biodegrade/decompose when exposed to various soil types and below slab conditions.

SIZE

Standard Size: 14' x 210' rolls

WEIGHT

Approximately 140 lbs per roll

BENEFITS

- Manufactured using multi-layer extrusion technology from virgin polyolefin resin
- Maintains long-term performance after exposure to adverse soil conditions
- Exceeds ASTM E 1745 "Class C" guidelines
- High puncture and tensile strength
- Greatly reduces moisture migration through slab-on-grade applications

TECHNICAL DATA**APPLICABLE STANDARDS****American Society for Testing & Materials (ASTM)**

ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls or as Ground Cover

ASTM D 1709 Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method

ASTM D 882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting

ASTM F 1249 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor

ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials

ASTM E 1643 Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs

ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials

NOTE: All Viper II 10-mil testing is done by accredited, third-party testing agencies following stringent industry guidelines and testing standards.

ENVIRONMENTAL CONSIDERATIONS

Viper II 10-mil can aid in controlling soil gas and poisons such as methane and radon.

PHYSICAL PROPERTIES

Viper II 10-mil exceeds all ASTM E 1745 "Class C" requirements for under-slab vapor retarders.

INSTALLATION**SUB-GRADE PREPARATION**

Level and tamp or roll granular base as specified by the architectural or structural drawings.

VAPOR RETARDER PLACEMENT

Unroll Viper 10-mil with the longest dimension parallel with the direction of the pour. Unfold to full width.

Extend Viper 10-mil over footings and seal to foundation wall, grade beam or slab at an elevation consistent with the top of the slab or terminate at impediments, such as water stops or dowels. Use Viper Double Bond Tape or a combination of Viper Double Bond Tape and Viper Vapor Tape at such terminations.

SEAMS AND PENETRATIONS

Seal around pipes, support columns, or any other penetrations, with Viper VaporPatch, VaporCheck Mastic, or at a minimum, a combination of Viper II 10-mil and Viper Vapor Tape. Doing so creates a monolithic membrane between the surface of the slab and moisture sources below.

Holes or openings through Viper II 10-mil should be effectively sealed with Viper Vapor Tape, Viper VaporPatch or VaporCheck Mastic to maintain the integrity of the vapor retarder. Overlap joints a minimum of six inches. Seal overlap together with Viper Vapor Tape and/or Viper Double Bond Tape.

PROTECTION

When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect Viper II 10-mil. Carelessness during installation can damage the most puncture-resistant vapor retarders.

Avoid driving stakes through Viper II 10-mil. If this cannot be avoided, each individual hole must be repaired.

If a cushion or blotter layer is required in the design between the vapor retarder and the slab, additional care should be taken, especially if sharp crushed rock is used. Washed rock will provide less chance of damage during placement.

These are general installation instructions. Instructions on architectural or structural drawings should be reviewed and followed. Detailed installation instructions can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

WARRANTY

Warranty information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

MAINTENANCE

Requires no maintenance once installed.

TECHNICAL SERVICES

Technical information and detailed test results can be obtained by calling the manufacturer at 866.698.6562.

FILING SYSTEMS

Additional information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

PROPERTIES TEST PROCEDURE (INDEPENDENT TEST FACILITY)	TEST METHOD APPLICABLE STANDARDS	RESULTS IP UNITS
THICKNESS (NOMINAL)	N/A	10-mil
WEIGHT	N/A	140 lbs
CLASSIFICATION	ASTM E 1745	EXCEEDS CLASS C
PUNCTURE RESISTANCE	ASTM D 1709 METHOD B	> 1,000 grams
TENSILE STRENGTH	ASTM E 154 SEC. 9 (D882)	23 lbf/in (MD), 16 lbf/in (TD)
ELONGATION	ASTM D 882	815% (MD), 575% (TD)
OPERATING TEMPERATURE RANGE	N/A	-70° F to 180° F
WATER VAPOR PERMEANCE (NEW MATERIAL)	ASTM F 1249	0.0178 perms*
WATER VAPOR TRANSMISSION RATE (WVTR)	ASTM F 1249	0.0078 grains/(ft ² *hr)
WATER VAPOR PERMEANCE (AFTER WETTING, DRYING AND SOAKING)	ASTM E 154 SEC. 8 (ASTM F 1249)	<0.1 perms*
WATER VAPOR PERMEANCE (AFTER HEAT CONDITIONING)	ASTM E 154 SEC. 11 (ASTM F 1249)	<0.1 perms*
WATER VAPOR PERMEANCE (AFTER LOW TEMPERATURE CONDITIONING)	ASTM E 154 SEC. 12 (ASTM F 1249)	<0.1 perms*
WATER VAPOR PERMEANCE (AFTER SOIL ORGANISM EXPOSURE)	ASTM E 154 SEC. 13 (ASTM F 1249)	<0.1 perms*

*grains/(ft²*hr*inHg)

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VIPER[®]

VAPOR TAPE

WHITE POLYETHYLENE SEAM TAPE

VERSION 20.0

VAPOR RETARDERS

DIVISION
033000, 072600

PRODUCT NAME

Viper• Vapor Tape White Polyethylene Seam Tape

MANUFACTURER

ISI BUILDING PRODUCTS

401 Truck Haven Road
East Peoria, IL 61611
866.698.6562 / www.isibp.com

PRODUCT DESCRIPTION

BASIC USE

Viper Vapor Tape is a low-residue, aggressive adhesive seam tape designed for seaming, splicing, sealing, patching and hanging plastic-type vapor barrier materials. Viper Vapor Tape has a low water vapor permeance, which helps in maintaining superior moisture/vapor resistance at vapor barrier seams. Viper Vapor Tape bonds well to most surfaces over a wide temperature range.

COMPOSITION & MATERIALS

Viper Vapor Tape is a polyethylene film, single coated with a rubber pressure sensitive adhesive. Viper Vapor Tape releases easily off of the roll, which prevents stretching and curling during and after installation. Viper Vapor Tape is designed and manufactured with a serrated edge to facilitate easy roll tear off during installation.

SIZE

Standard Sizes: 2" x 180', 3" x 180', 4" x 180'

BENEFITS

- Aggressive adhesion
- Serrated edge for ease of installation
- Very low water vapor permeance
- Struggle free release from roll
- Suitable for all plastic-type vapor barriers
- Four inch wide rolls for more area of adhesion

TECHNICAL DATA

APPLICABLE STANDARDS

American Society for Testing & Materials (ASTM)

ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

ASTM E 1643 Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs

ASTM D 1000 Standard Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications

ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials

PSTC 101 International Standard for Peel Adhesion of Pressure Sensitive Tape

ENVIRONMENTAL CONSIDERATIONS

When sealing vapor barrier overlaps, Viper Vapor Tape can aid in controlling soil gas and poisons such as methane and radon.

INSTALLATION

SUB-GRADE PREPARATION

Level and tamp or roll granular base as specified by the architectural or structural drawings.

VAPOR BARRIER PLACEMENT

Unroll Viper Vapor Barrier with the longest dimension parallel with the direction of the pour. Unfold to full width.

Lap vapor barrier over the footings and seal to the vertical foundation walls with either Viper Vapor Tape, Viper Double Bond Tape, Viper VaporPatch or VaporCheck Mastic.

SURFACE PREPARATION

When installing Viper Vapor Tape, Viper Double Bond Tape, Viper Vapor Tape or VaporCheck Mastic, make sure the area of adhesion is free from dust, dirt and moisture to allow maximum adhesion.

SEAMS AND PENETRATIONS

Seal around pipes, support columns or any other penetration with Viper VaporPatch, VaporCheck Mastic or at minimum a combination of the Viper Vapor Barrier and Viper Vapor Tape. Doing so creates a monolithic membrane isolating the surface of the slab from moisture sources below.

Holes or openings through Viper Vapor Barrier should be effectively sealed with Viper Vapor Tape, Viper VaporPatch or VaporCheck Mastic to maintain the integrity of the vapor barrier. Overlap joints a minimum of six inches. Seal overlap together with Viper Vapor Tape and/or Viper Double Bond Tape.

VIPER VAPORPATCH INSTALLATION

1. Viper VaporPatch is available in 12" x 50' rolls. Cut patch to desired length using "dashed" guideline (printed between each pipe diameter template).

2. Cut an "X" through Viper VaporPatch to fit the diameter of the pipe (Grid ranges from one to eight inches).

3. Slide Viper VaporPatch tightly over pipe penetration.

4. Peel off the release paper (exposing the all-weather adhesive) and firmly apply to the vapor barrier and pipe.

5. Seal off any exposed area with VaporCheck Mastic or Viper Vapor Tape.

These are general installation instructions. Instructions on architectural or structural drawings should be reviewed and followed. Detailed installation instructions can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

WARRANTY

Warranty information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

MAINTENANCE

Requires no maintenance once installed.

TECHNICAL SERVICES

Technical information and detailed test results can be obtained by calling the manufacturer at 866.698.6562.

FILING SYSTEMS

Additional information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

PROPERTIES TEST PROCEDURE (INDEPENDENT TEST FACILITY)	TEST METHOD APPLICABLE STANDARDS	RESULTS IP UNITS
ROLL SIZES	N/A	2" x 180'; 3" x 180'; 4" x 180'
TOTAL THICKNESS (NOT INCLUDING LINER)	N/A	7.5-mil
ADHESIVE THICKNESS (RUBBER)	N/A	3.0-mil
PEEL ADHESION: INITIAL TO S.S. (20 MIN @ RT)	PSTC 101 MOD.	60 oz/in
BACKING ADHESION: INITIAL TO BACKING (20 MIN @ RT)	PSTC 101 MOD.	35 oz/in
TENSILE STRENGTH	ASTM D 1000	24 lbs/in
ELONGATION	ASTM D 1000	70%
WATER VAPOR PERMEANCE	ASTM E 96	<0.001 perms
OPERATING TEMPERATURE RANGE	N/A	32° F to 160° F

Note: Recommended application temperature to achieve best results is 40°F (4°C) or above.

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VIPER[®]

DOUBLE BOND TAPE

HIGH TACK DOUBLE-SIDED BUTYL TAPE

VAPOR RETARDERS

DIVISION
033000, 072600

PRODUCT NAME

Viper• Double Bond Tape
High Tack Double-Sided Butyl Tape

MANUFACTURER

ISI BUILDING PRODUCTS
401 Truck Haven Road
East Peoria, IL 61611
866.698.6562 / www.isibp.com

PRODUCT DESCRIPTION

BASIC USE

Viper Double Bond Tape is a double-sided tape incorporating an exceptionally high tack, high peel, butyl adhesive system. Viper Double Bond Tape has a high adhesive mass that creates excellent gap filling and water-resistant properties. Viper Double Bond Tape is designed for sealing applications requiring an adhesive surface on both sides. Viper Double Bond Tape can be used as a self-sealing gasket, replacing messy caulks. It is ideal for sealing vapor barrier seams and adhering vapor barriers to vertical foundation walls and piers. Viper Double Bond Tape adheres aggressively to rough or porous surfaces.

COMPOSITION & MATERIALS

Viper Double Bond Tape is composed of a 23-mil butyl. When integrated into the vapor barrier system and used properly, Viper Double Bond Tape will defend against water penetrating the building envelope, which can lead to costly mold and mildew growth. The proprietary butyl adhesive allows for superior adhesion to OSB, plywood, aluminum, vinyl and concrete.

SIZE

Standard Size: 2" x 90'
8 rolls/case

WEIGHT

Approximately 4.35 lbs per roll, 35 lbs per case

BENEFITS

- Installed down to 0°F, thermally stable up to 300°F
- Meets ICC Acceptance Criteria 148 for weatherproofing
- Build GREEN: eligible for LEED compliance credits
- Self-seals around nails and fastener penetrations, both before and after thermal cycling
- Resistant to UV exposure for up to 6 months
- No bleed or staining: compatible with most common building sealants
- Long life cycle: will not dry or harden within 10 years, allowing for a watertight and energy efficient seal
- Excellent adhesion to unprimed concrete

TECHNICAL DATA

APPLICABLE STANDARDS

American Society for Testing & Materials (ASTM)

ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

ASTM E 1643 Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs

ASTM D 3654 Standard Test Method for Shear Adhesion of Pressure-Sensitive Tapes

ASTM D 3330 Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape

INSTALLATION

SURFACE PREPARATION

The surface to which Viper Double Bond Tape is to be adhered to should be clean, dry, smooth and free of contaminants. Use a wire brush and primer as necessary to ensure such a surface. For best results, apply Viper Double Bond Tape at ambient temperature above 41° F (5° C). When applying to concrete or masonry in temperatures below recommendations, heat surface prior to application for maximum adhesion.

SEAMS AND PENETRATIONS

Seal around pipes, support columns or any other penetration with Viper VaporPatch, VaporCheck Mastic or at minimum a combination of the Viper Vapor Barrier and Viper Vapor Tape. Doing so creates a monolithic membrane isolating the surface of the slab from moisture sources below.

Holes or openings through Viper Vapor Barrier should be effectively sealed with Viper Vapor Tape, Viper VaporPatch or VaporCheck Mastic to maintain the integrity of the vapor barrier. Overlap joints a minimum of six inches. Seal overlap together with Viper Vapor Tape and/or Viper Double Bond Tape.

APPLICATION TO SUBSTRATE

Carefully align and unroll Viper Double Bond Tape to substrate. Do not remove release paper until vapor barrier is ready to be installed. This prevents dirt, dust, debris and other foreign objects from interfering with adhesive.

APPLICATION TO TAPE

The release film should not be removed until the moment you are ready to adhere to Viper Double Bond Tape. Never leave Viper Double Bond Tape uncovered once the release film has been removed. This prevents dirt, dust, debris and other foreign objects from interfering

with adhesive. Do not leave Viper Double Bond Tape uncovered for more than eight hours.

When mechanical fasteners are required for permanent holds, such as termination bars, it is suitable to fasten through the Viper Double Bond Tape. The Viper Double Bond Tape will self-seal around the fasteners creating a gasket between the substrate and material being fastened.

SPECIAL INSTRUCTIONS

If Viper Double Bond Tape is to be left exposed for an extended period, be sure to cover with UV resistant material as Viper Double Bond Tape is not designed for prolonged exposure to direct sunlight. Store Viper Double Bond Tape in the carton and remove only as needed. Store carton of Viper Double Bond Tape on end in a dry place at temperatures not exceeding 100° F (38° C).

These are general installation instructions. Instructions on architectural or structural drawings should be reviewed and followed. Detailed installation instructions can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

WARRANTY

Warranty information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

MAINTENANCE

Requires no maintenance once installed.

TECHNICAL SERVICES

Technical information and detailed test results can be obtained by calling the manufacturer at 866.698.6562.

FILING SYSTEMS

Additional information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

PROPERTIES TEST PROCEDURE (INDEPENDENT TEST FACILITY)	TEST METHOD APPLICABLE STANDARDS	RESULTS IP UNITS
ROLL SIZE	N/A	2" x 90'
NAIL SEALABILITY	AAMA 711-07 MODIFIED D-1970	PASS
90° PEEL ADHESION PLYWOOD OSB FACER	AAMA 711-07 SEC. 5.3	7.2 lb/in 5.5 lb/in 6.5 lb/in
MOLD GROWTH	ASTM G-21	NO GROWTH
SERVICE TEMPERATURE	N/A	-40° F to 300° F

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**VAPOR RETARDERS**DIVISION
033000, 072600**PRODUCT NAME**

Viper• VaporPatch Self-Adhering Pipe Boot/Patch

MANUFACTURER**ISI BUILDING PRODUCTS**
401 Truck Haven Road
East Peoria, IL 61611
866.698.6562 / www.isibp.com**PRODUCT DESCRIPTION****BASIC USE**

Viper VaporPatch is an all-weather adhesive vapor barrier pipe boot/patch specifically designed for pipe penetrations and patch work. For ease of installation, Viper VaporPatch contains a pipe diameter template every twelve inches for use when cutting to fit various pipe diameters. Viper VaporPatch also works extremely well for seaming, sealing, patching and hanging all plastic-type vapor barrier materials. Viper VaporPatch retains its superior tack in cold, hot, humid and even damp conditions in temperatures ranging from -20°F (-29°C) to 180°F (82°C). The bond strength of Viper VaporPatch increases after adhesion.

COMPOSITION & MATERIALS

Viper VaporPatch patent pending technology combines properties of Viper• VaporCheck• 10-mil and all-weather acrylic adhesives. Viper VaporCheck 10-mil is a high performance under-slab vapor barrier designed to retard moisture migration through concrete slabs-on-grade.

SIZEStandard Size: 11.5" x 50' rolls
Yields: (50) 11.5" x 12" boots**WEIGHT**

Approximately 5 lbs per roll

TECHNICAL DATA**APPLICABLE STANDARDS****American Society for Testing & Materials (ASTM)****ASTM E 1745** Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs**ASTM E 154** Standard Test Methods for Water Vapor Retarders used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover**ASTM D 1709** Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method**ASTM D 5602** Standard Test Methods for Static Puncture Resistance of Roofing/Under-Slab Membrane Specimens**ASTM E 96** Standard Test Methods for Water Vapor Transmission of Materials**ASTM D 882** Standard Test Method for Tensile Properties of Thin Plastic Sheeting**ASTM D 751** Standard Test Method for Coated Fabrics**ASTM E 1643** Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs**ACI 302.2R-06** Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials**ENVIRONMENTAL CONSIDERATIONS**

When sealing around penetrations through the vapor barrier, Viper VaporPatch can aid in controlling soil gas and poisons such as methane and radon.

INSTALLATION**SUB-GRADE PREPARATION**

Level and tamp or roll granular base as specified by the architectural or structural drawings.

VAPOR BARRIER PLACEMENT

Unroll Viper Vapor Barrier with the longest dimension parallel with the direction of the pour. Unfold to full width.

Lap vapor barrier over the footings and seal to the vertical foundation walls with either Viper VaporPatch, Viper Double Bond Tape, Viper Vapor Tape or VaporCheck Mastic.

SURFACE PREPARATION

When installing Viper VaporPatch, Viper Double Bond Tape, Viper Vapor Tape or VaporCheck Mastic, make sure the area of adhesion is free from dust, dirt and moisture to allow maximum adhesion.

SEAMS AND PENETRATIONS

Seal around pipes, support columns or any other penetration with Viper VaporPatch, VaporCheck Mastic or at minimum a combination of the Viper Vapor Barrier and Viper Vapor Tape. Doing so creates a monolithic membrane that isolates the surface of the slab from moisture sources below.

Holes or openings through Viper Vapor Barrier should be effectively sealed with Viper Vapor Tape, Viper VaporPatch or VaporCheck Mastic to maintain the integrity of the vapor barrier. Overlap joints a minimum of six inches. Seal overlap together with Viper Vapor Tape and/or Viper Double Bond Tape.

VIPER VAPORPATCH INSTALLATION

1. Cut patch to desired length using “dashed” guideline (printed between each pipe diameter template).
2. Cut an “X” through Viper VaporPatch to fit the diameter of the pipe (Grid ranges from one to eight inches).
3. Slide Viper VaporPatch tightly over pipe penetration.
4. Peel off the release paper (exposing the all-weather adhesive) and firmly apply to the vapor barrier and pipe.
5. Seal off any exposed area with VaporCheck Mastic or Viper Vapor Tape

These are general installation instructions. Instructions on architectural or structural drawings should be reviewed and followed. Detailed installation instructions can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

WARRANTY

Warranty information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

MAINTENANCE

Requires no maintenance once installed.

TECHNICAL SERVICES

Technical information and detailed test results can be obtained by calling the manufacturer at 866.698.6562.

FILING SYSTEMS

Additional information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

PROPERTIES TEST PROCEDURE (INDEPENDENT TEST FACILITY)	TEST METHOD APPLICABLE STANDARDS	RESULTS IP UNITS
SUBSTRATE THICKNESS	N/A	10-mil
ADHESIVE THICKNESS	N/A	3-mil
PEEL ADHESION	N/A	55 oz/in
SHEAR ADHESION	N/A	>24 hrs @ 22 PSI
CLASSIFICATION	ASTM E 1745	EXCEEDS CLASS A, B, C
PUNCTURE RESISTANCE	ASTM D 1709	15,839 grams (MAXIMUM WEIGHT SUSTAINED)
TENSILE STRENGTH (NEW MATERIAL)	ASTM 154 SEC. 9	136 lbf/in (MD), 134 lbf/in (TD)
TENSILE STRENGTH (AFTER SOAKING)	ASTM 154 SEC. 9	140 lbf/in (MD), 133 lbf/in (TD)
OPERATING TEMPERATURE RANGE	N/A	-20° F to 180° F
WATER VAPOR PERMEANCE	ASTM E 96 / 154 SEC. 7	0.0016 perms
WATER VAPOR TRANSMISSION RATE	ASTM E 96 / 154 SEC. 7	0.00058 grains/(ft ² *hr)

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VIPER[®]

VAPORCHECK MASTIC

WATERPROOFING MASTIC

VERSION 20.0

VAPOR RETARDERS

DIVISION
033000, 072600

PRODUCT NAME

VaporCheck• Mastic Waterproofing Mastic

MANUFACTURER

ISI BUILDING PRODUCTS

401 Truck Haven Road
East Peoria, IL 61611
866.698.6562 / www.isibp.com

PRODUCT DESCRIPTION

BASIC USE

VaporCheck Mastic is a single component, trowel grade, polymer modified, water based emulsion designed as a waterproofing and vapor barrier. VaporCheck Mastic cures to form a tough, seamless, elastomeric membrane, which exhibits excellent resistance to moisture and vapor transmissions. VaporCheck Mastic has been specifically formulated to act as a waterproofing and vapor barrier for use in conjunction with Viper under-slab vapor barriers. VaporCheck Mastic is applied by trowel or putty knife to and around penetrations through Viper under-slab vapor barriers. It may also be applied to exterior vertical or horizontal surfaces of cast-in-place concrete, concrete masonry units, wood, metal, foam, OSB and ICFs. VaporCheck Mastic is suitable for both new and retrofit construction.

COMPOSITION & MATERIALS

VaporCheck Mastic is a latex modified asphalt clay emulsion with polymers and colloids to formulate a waterproof coating. VaporCheck Mastic is 100% free of asbestos, VOCs and HAPs.

COMPOSITION:

Asphalt CAS 8052-42-4
Water CAS 7732-18-5
Polymers CAS Mixture
Clay CAS 14808-60-7
Pigment Disperser CAS Mixture

SIZE

Standard Size: 5-gallon (18.9 L) pails
28 oz. (.83 L) caulking tubes

TECHNICAL DATA

APPLICABLE STANDARDS

American Society for Testing & Materials (ASTM)

ASTM C 1306 Standard Test Method for Hydrostatic Pressure Resistance of a Liquid-Applied Waterproofing Membrane Under Concrete Slabs

ASTM D 4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

ASTM C 836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course

ASTM D 2939 Standard Test Methods for Emulsified Bitumens Used as Protective Coatings

ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials

ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension

ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

ICC AC-29 Acceptance Criteria for Cold, Liquid Applied, Below-Grade, Exterior Dampproofing and Waterproofing materials

ENVIRONMENTAL CONSIDERATIONS

VaporCheck Mastic is 100% free of VOCs, HAPs and asbestos.

PHYSICAL PROPERTIES

VaporCheck Mastic is a latex modified asphalt clay emulsion with polymers and colloids to formulate a waterproof coating. The gel consistency of this material allows for a heavy coating to be applied to steep or vertical surfaces with no sagging or running. VaporCheck Mastic forms an impervious moisture barrier unaffected by normal alkali or acids found in soils.

INSTALLATION

SUBSTRATE PREPARATION

The surface to which VaporCheck Mastic is applied must be structurally sound, clean, dry and free of dust, mud, loose mortar, sand, soil, frost or other loose materials. Dry or dusty surfaces should be hosed or mopped clean with water. VaporCheck Mastic is recommended to be applied to dampened surfaces for better adhesion.

APPLICATION TEMPERATURE

VaporCheck Mastic should NOT be applied if rain is eminent or during cold weather below 50°F (10°C). VaporCheck Mastic cures in about twenty-four hours depending on the temperature and humidity.

APPLICATION PROCEDURE

VaporCheck Mastic needs to be stirred prior to use.

For pipe and rebar penetrations, cut and install Viper Vapor Barrier tightly to penetration. Apply VaporCheck Mastic around penetration and over any exposed sub-surface.

For larger openings around penetrations, first install self-adhering Viper VaporPatch. Then seal remaining exposed areas with VaporCheck Mastic. Doing so provides a structurally sound, clean and dry area of adhesion to ensure a complete seal around the penetration.

VaporCheck Mastic has a thick consistency and should be applied by trowel or putty knife around all penetrations in one or two coats. It is recommended that VaporCheck Mastic be applied to an application thickness of 60-mils wet, which will yield 40-mils dry. These yields equate to an application rate of twenty-five square feet per gallon. The coating will be dry to the touch within ten minutes, but should be allowed to cure for four to twenty-four hours after installation.

DO NOT backfill or cover twenty-four hours after installation. DO NOT allow more than ten days to elapse before covering. NOTE: VaporCheck Mastic is self-priming and does not require the use of a primer. It has been tested compatible with all ABAA certified transition membranes and can be applied below and/or above these membranes.

SURFACE TEMPERATURE AND CHEMICAL RESISTANCE

VaporCheck Mastic is resistant to chemical attack and is very resistant to acids and salts. It should not be applied on surfaces that exceed 210°F.

CLEAN UP AND DISPOSAL

VaporCheck Mastic can be cleaned while wet with soap and water. If the VaporCheck Mastic has cured; it can be removed with mineral spirits.

DO NOT re-use container. DO NOT contaminate water, food or feed by storage or disposal. The open dumping of the container is prohibited. Consult Federal, State or Local disposal authorities for approved alternate procedures.

These are general installation instructions. Instructions on architectural or structural drawings should be reviewed and followed. Detailed installation instructions can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

WARRANTY

Warranty information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

MAINTENANCE

Requires no maintenance once installed.

TECHNICAL SERVICES

Technical information and detailed test results can be obtained by calling the manufacturer at 866.698.6562.

FILING SYSTEMS

Additional information can be obtained by calling the manufacturer at 866.698.6562 or visiting www.isibp.com.

PROPERTIES TEST PROCEDURE (INDEPENDENT TEST FACILITY)	TEST METHOD APPLICABLE STANDARDS	RESULTS IP UNITS
DENSITY		8.1 lbs/gallon (0.92 g/cm ²)
PH		> 9.5
VISCOSITY		1500 - 2000 cP
HYDROSTATIC PRESSURE OVER CRACKS	ASTM C 1306	Rapid Test: Passes at 3.7 PSI (25.8 kPa) Long Term Test: Passes @ 2.5 psi (17.24kPa)
DRY CONTENT	ASTM C 1250	> 64%
LOW TEMP FLEXIBILITY & CRACK BRIDGING	ASTM C 836 SEC. 6.7	No Cracking or Loss of Adhesion @ -14.8°F (-26°C)
HEAT FLOW TEST		Liquifies @ 385°F (196°C), Softens @ 150°F (65°C)
ADHESION STRENGTH TO POURED CEMENT	ASTM C 836 SEC. 6.10	13.239 lbf/in (1.49 N/m)
ADHESION STRENGTH TO MASONRY	ASTM C 836 SEC. 6.10	12.092 lbf/in (1.37 N/m)
PULL ADHESION STRENGTH TO POURED CEMENT	ASTM D 4541	77.2 psi (532.3 kPa)
PULL ADHESION STRENGTH TO MASONRY	ASTM D 4541	106 psi (730.8 kPa)
RESISTANCE TO WATER	ASTM D 2939 SEC. 15	No Blistering or Re-emulsification
REMAIN IN PLACE DURING APPLICATION	ASTM C 836 SEC. 6.9	Final thickness of 0.0162 in (0.411 mm) @ > 24 hrs.
WATER VAPOR PERMEANCE	ASTM E 96	0.138 U.S. Perms (0.091 Metric Perms)
EXTENSIBILITY AFTER HEAT AGING	ASTM C 836 SEC. 6.12	Pass 1/4 inch (6.35 mm) Stretch With No Cracking
TENSILE STRENGTH	ASTM D 412-98	41.3 psi (284.75 kPa)
ELONGATION	ASTM D 412-98	>1800%
NAIL SEALABILITY	ASTM D 1970-01	No Leaks

DISCLAIMER: TO THE BEST OF OUR KNOWLEDGE, THE SPECIFICATION CHART LISTS TYPICAL PROPERTY VALUES AND ARE INTENDED AS GUIDES ONLY, NOT AS SPECIFICATION LIMITS. ISI BUILDING PRODUCTS MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, NO GUARANTEE OF SATISFACTORY RESULTS FROM RELIANCE UPON CONTAINED INFORMATION OR RECOMMENDATIONS AND DISCLAIMS ALL LIABILITY FOR RESULTING LOSS OR DAMAGE.

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Note: The following installation instructions are based off of ASTM E 1643 (Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs).

1. Install Viper Vapor Barrier over compacted base material. Viper Vapor Barriers are designed to withstand rugged construction environments; therefore, it is not necessary to have a perfectly smooth subsurface.
2. Unroll Viper Vapor Barrier with the longest dimension parallel with the direction of the concrete pour. The Viper Vapor Barrier should completely cover the entire pour area.
3. Extend Viper Vapor Barrier over footings and seal to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments, such as water stops or dowels. (Refer to Slab-on-Grade detail.)
4. All joints and seams should be overlapped a minimum 6 inches and sealed with 4-inch Viper Vapor Tape and/or 2-inch Viper Double Bond Tape. (Note: The area of adhesion should be free from dust, dirt and moisture to allow for maximum adhesion of the tape.) (Refer to Six Inch Overlap Vapor Retarder Seal details.)
5. All penetrations, such as utilities and columns, should be sealed using Viper Vapor Barrier, Viper VaporPatch and/or VaporCheck Mastic. Doing so creates a monolithic membrane between the surface of the slab and moisture sources below the slab. (Refer to Pipe Penetrations details.)
6. Extend and terminate Viper Vapor Barrier over the tops of pile caps and grade beams to a distance acceptable to the structural engineer.
7. If Viper Vapor Barrier becomes damaged during installation, repairs must be made. Methods of repair include:
 - A. Create patch using roll of Viper VaporPatch. Peel off release backing and adhere over damaged area. (Refer to Pipe Penetration details.)
 - B. Cut a piece of Viper Vapor Barrier large enough to extend 6 inches beyond damaged area on all sides. Secure patch with either 4-inch Viper Vapor Tape and/or 2-inch Viper Double Bond Tape. (Note: The area of adhesion should be free from dust, dirt and moisture to allow for maximum adhesion of the tape.)
8. A secondary protective layer, such as fine washed gravel or sand, is not necessary. If used, do so in accordance with American Concrete Institute's ACI 302 guidelines.

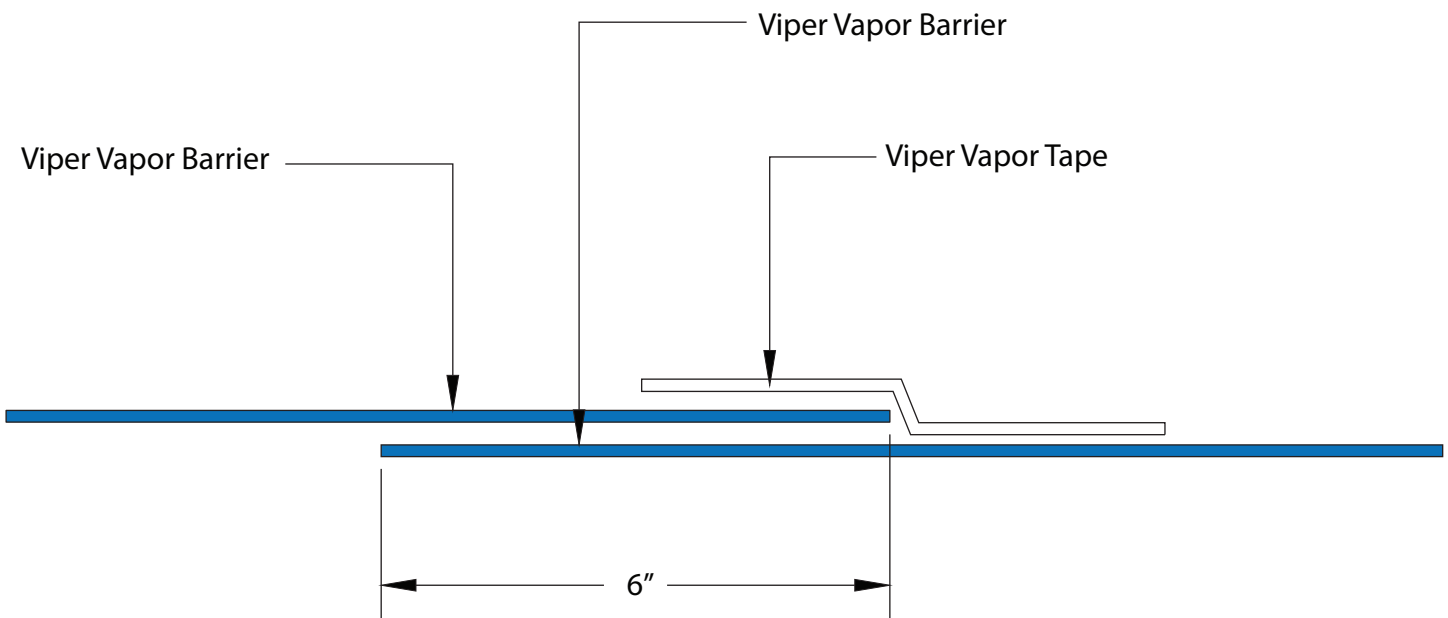
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Six Inch Overlap Vapor Retarder Seal



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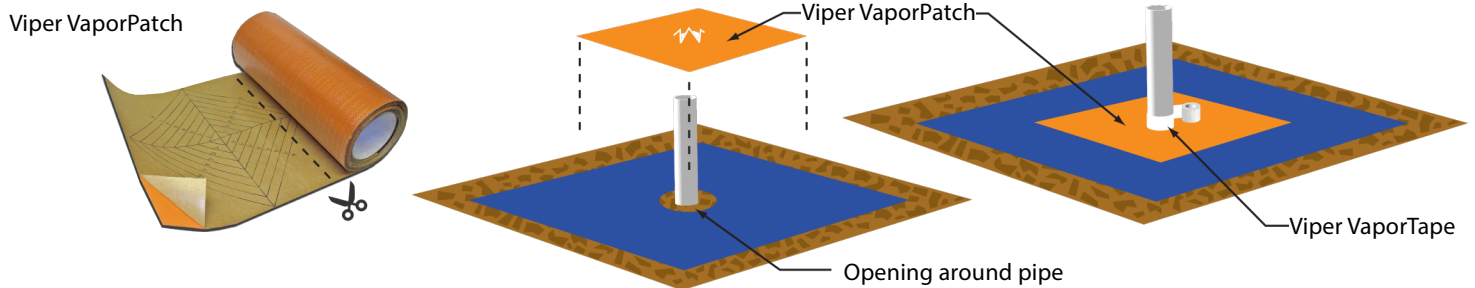


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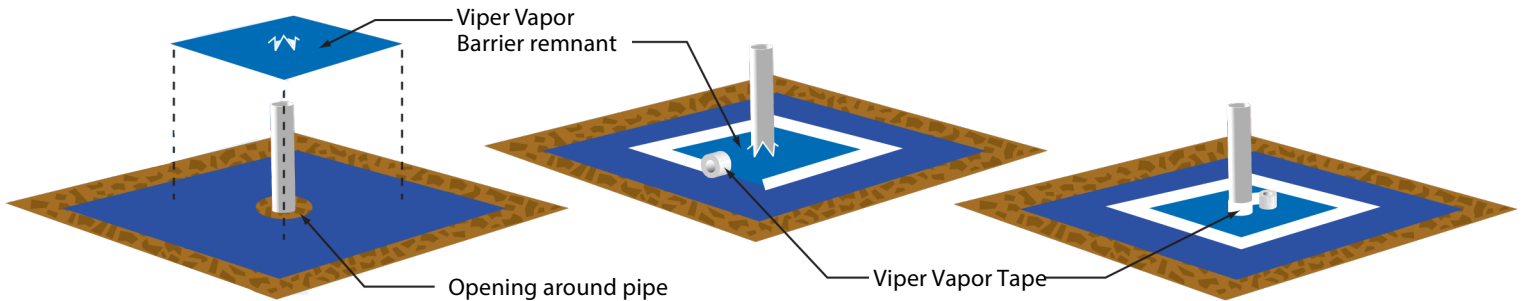
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Pipe Penetrations

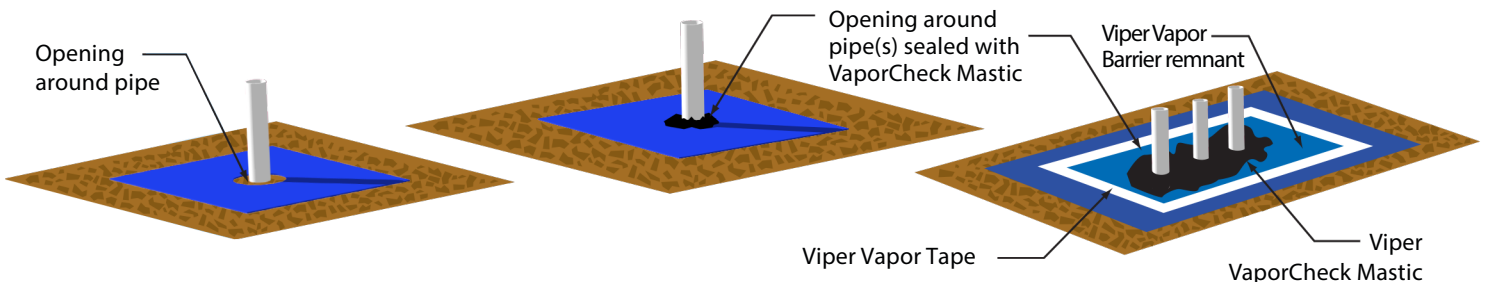
Option 1: Pipe penetration below is sealed using Viper VaporPatch. Cut square patch approximately 12" x 12" from roll. Cut "X" in square patch using pipe diameter template. Slide Viper VaporPatch over pipe, peel off release liner and adhere to both Viper Vapor Barrier and pipe. Seal any remaining openings with Viper Vapor Tape or VaporCheck Mastic.



Option 2: Pipe penetration below is sealed using a piece of Viper Vapor Barrier and Viper Vapor Tape. Cut "X" in Viper Vapor Barrier remnant, slide over pipe and seal to both Viper Vapor Barrier and pipe with Viper Vapor Tape.



Option 3: Pipe penetration below is sealed using Viper VaporCheck Mastic. For multiple pipe penetrations, cut "X's" in Viper Vapor Barrier remnant, slide over pipes and seal with Viper Vapor Tape. All remaining openings around pipes are sealed using Viper VaporCheck Mastic.



Note: Viper VaporCheck Mastic is available in 5-gallon pails and 28-ounce caulking tubes.

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Pipe Penetration Using Viper VaporPatch

Figure: 1

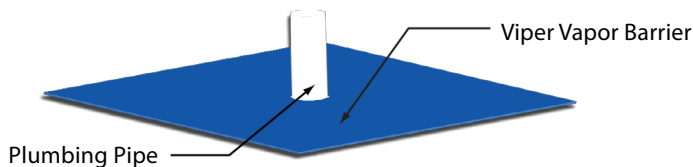


Figure: 2

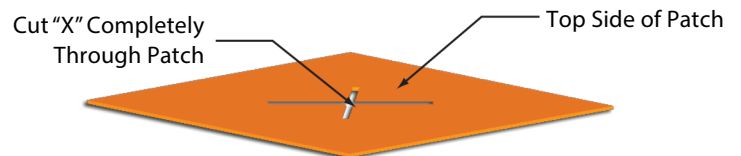


Figure: 3

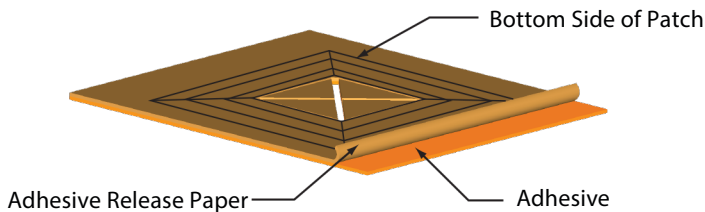


Figure: 4

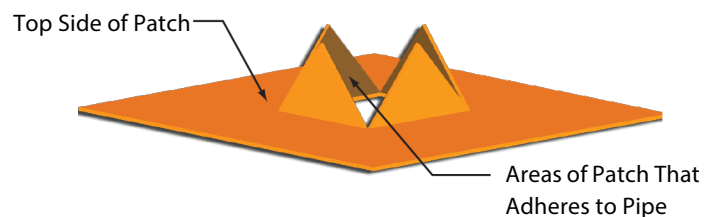


Figure: 5

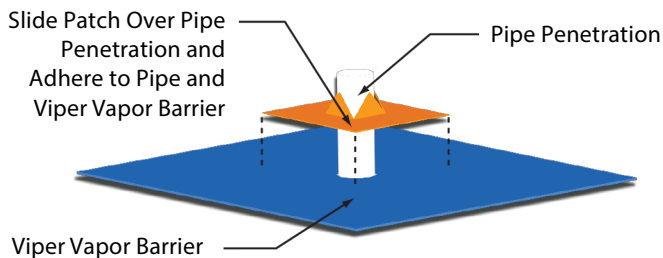
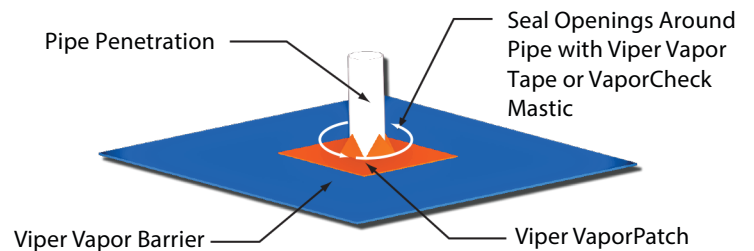


Figure: 6

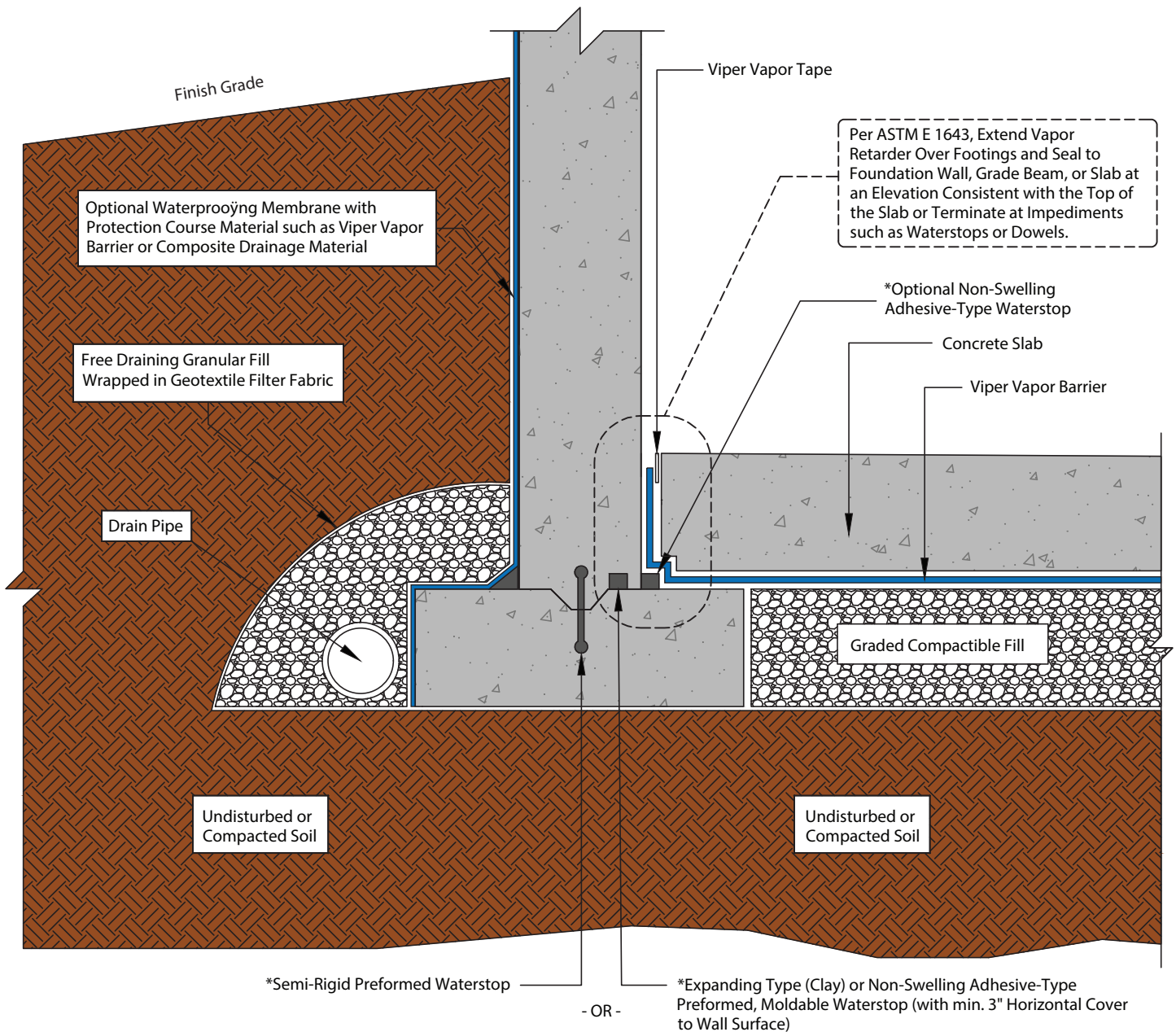


Pipe Boot Instructions (using Viper VaporPatch)

1. Cut boot from 11.5" x 50' roll. Each roll contains approximately 50 pipe boots. Note: There is a pipe grid template every 12 inches.
2. Cut an "X" through the Viper VaporPatch using the pipe grid template. Note: The grid ranges from 1 inch to 8 inches in diameter.
3. Slide patch over pipe penetration.
4. Peel off the adhesive release paper from Viper VaporPatch and firmly apply to the pipe penetration and Viper Vapor Barrier.
5. Seal off any exposed area with Viper Vapor Tape or VaporCheck Mastic.

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Foundation Wall - Option 1



*This Detail Shows Multiple Waterstop Options. Check with A/E Specifications for Requirements and/or Placement.

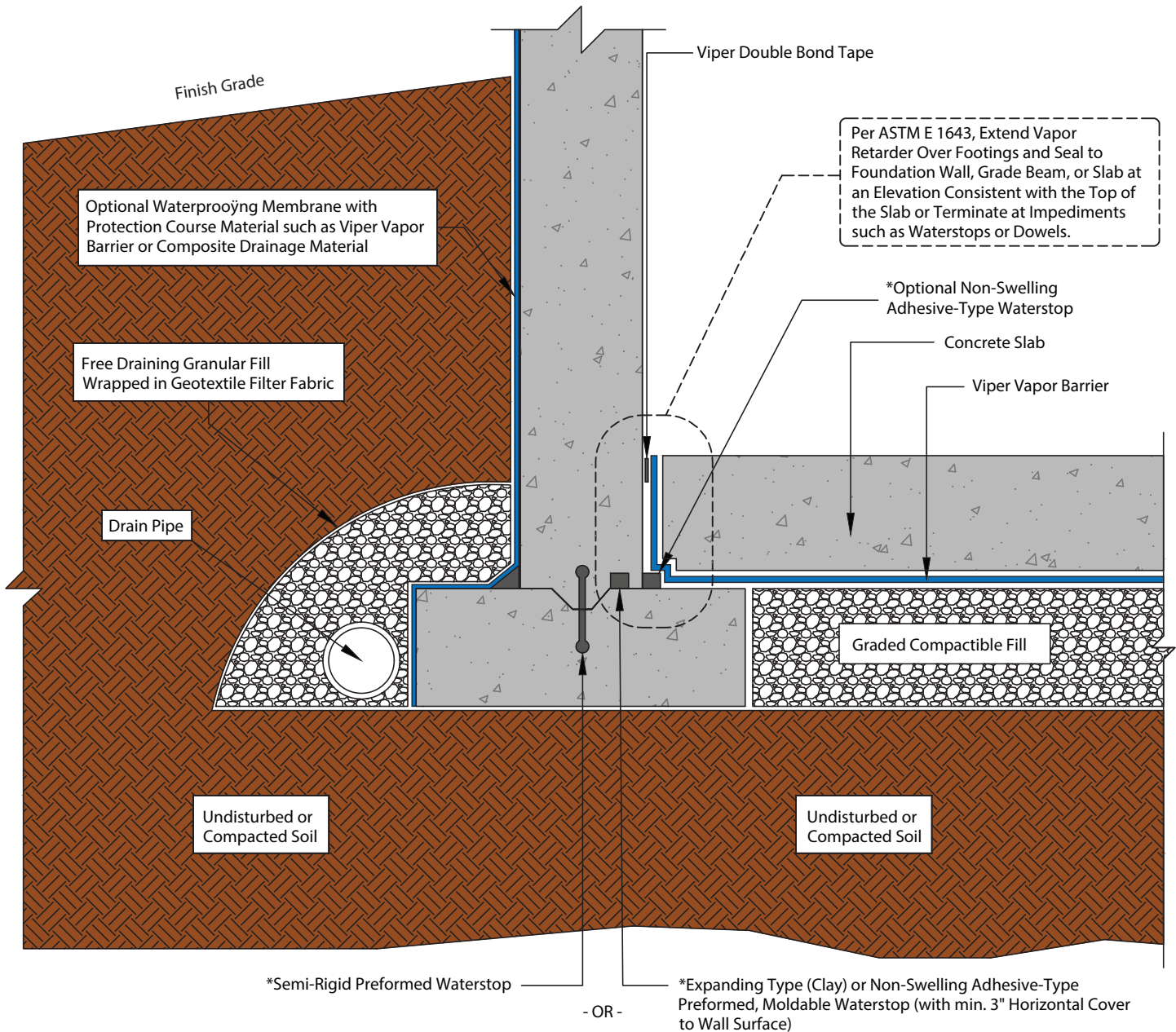
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Foundation Wall - Option 2



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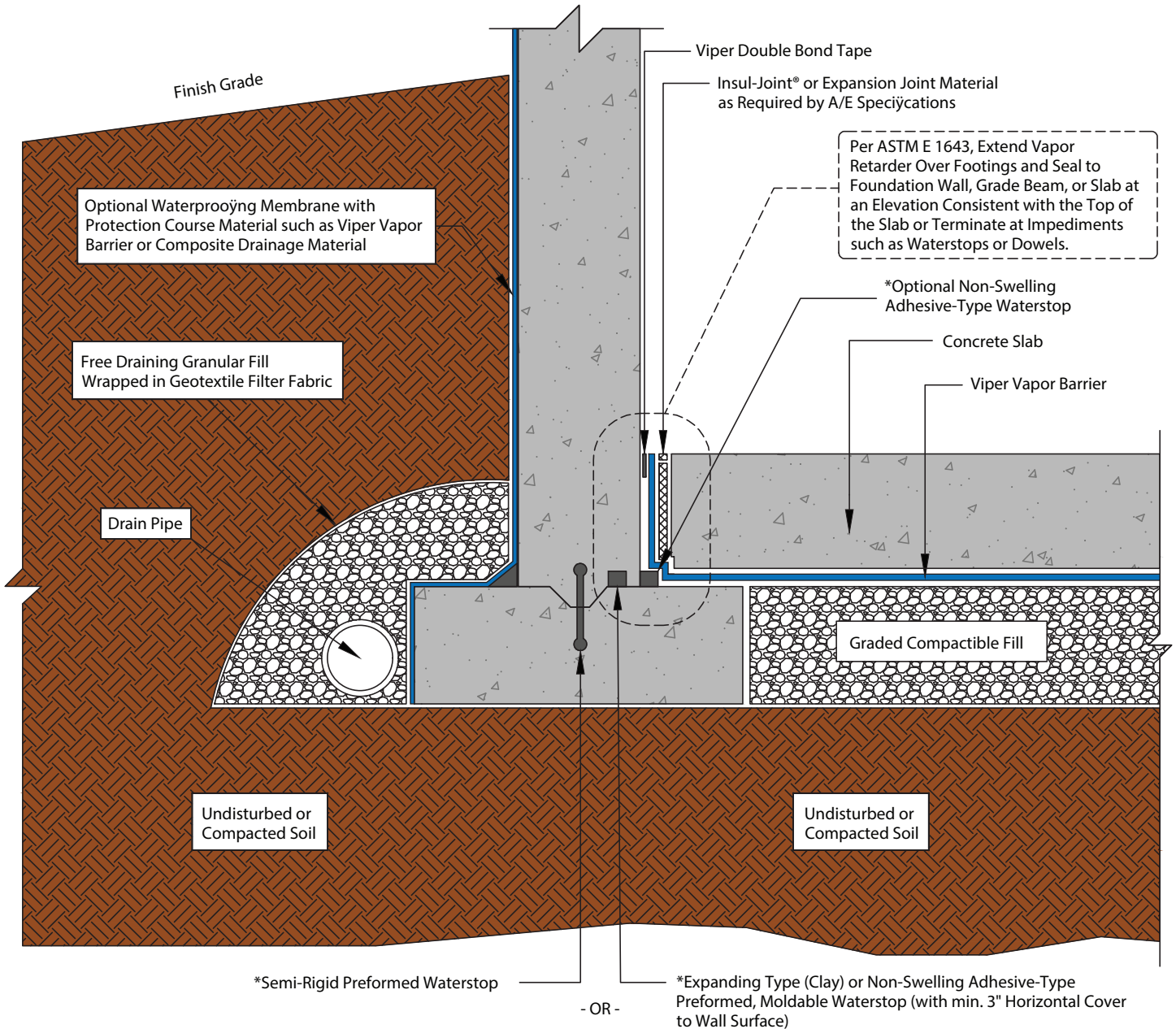
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Foundation Wall with Expansion Joint



*This Detail Shows Multiple Waterstop Options. Check with A/E Specifications for Requirements and/or Placement.

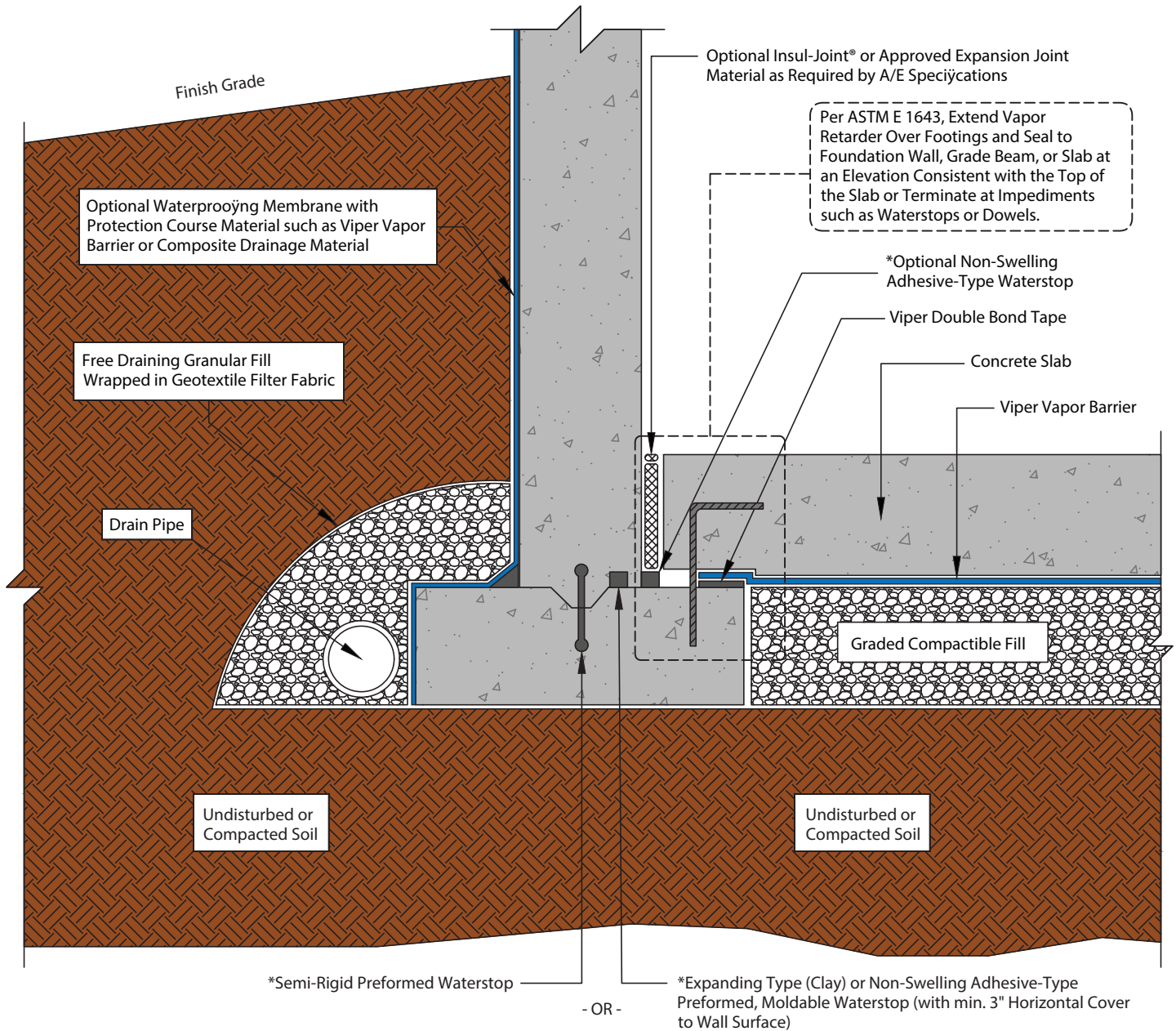
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Footing at Impediment



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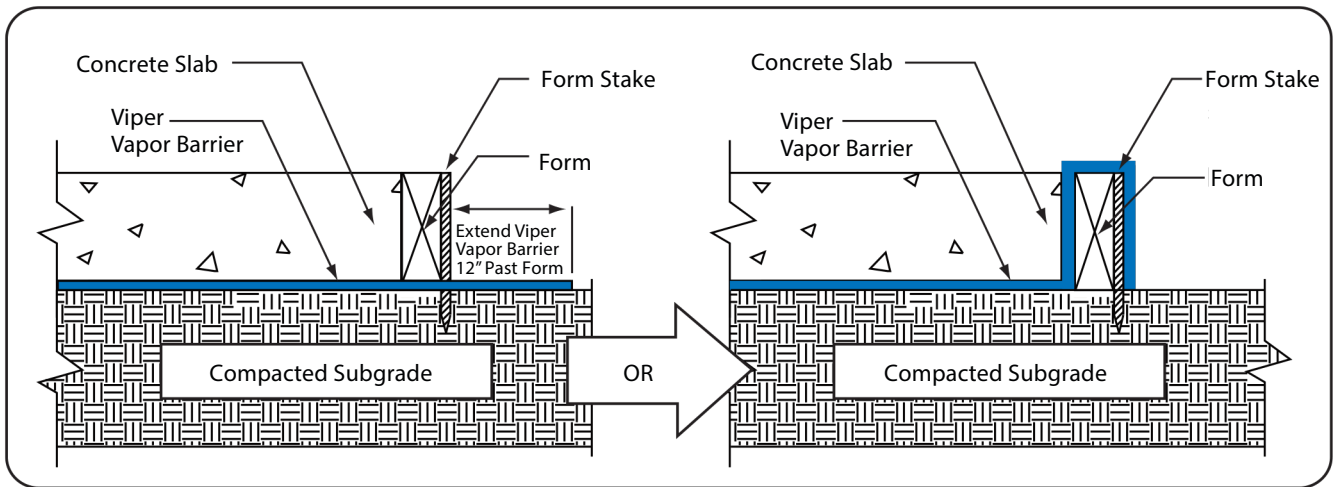


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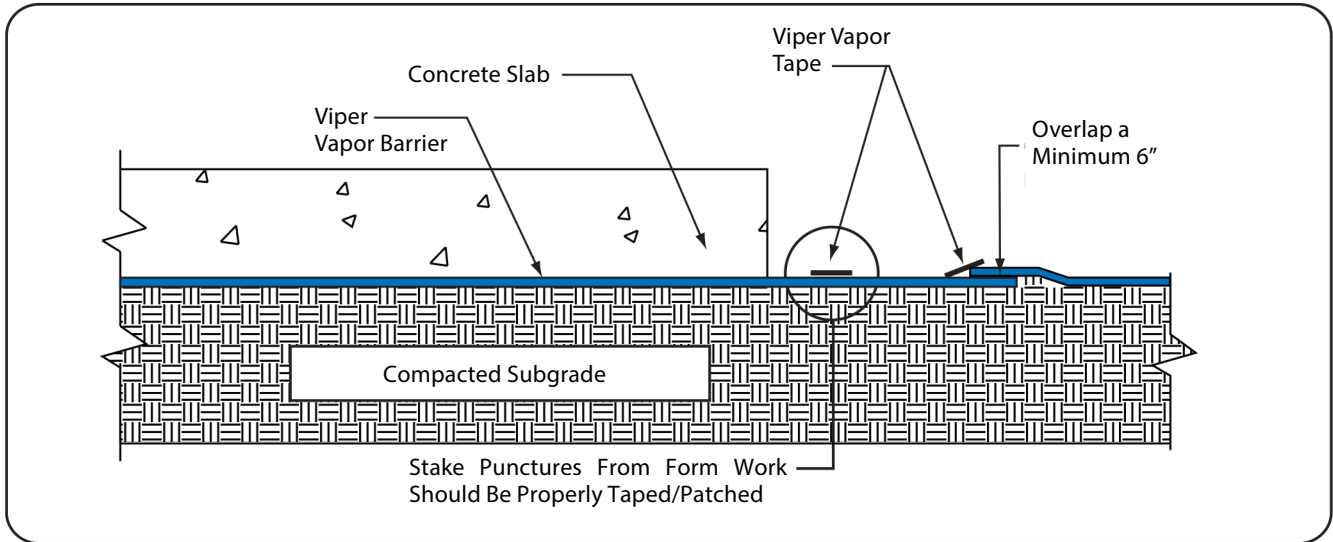
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Concrete Slab Construction Joint

STEP ONE:



STEP TWO:



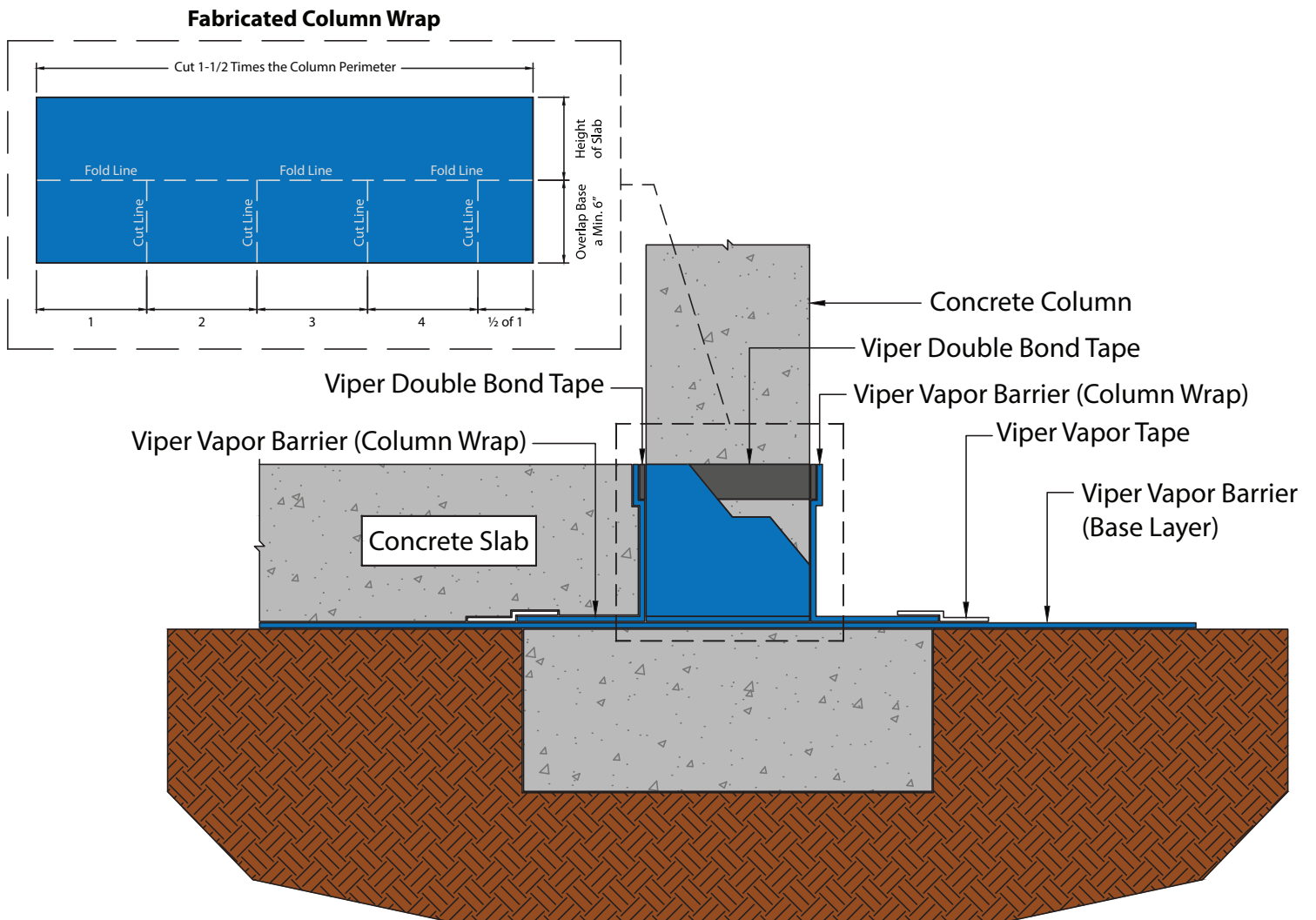
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Concrete Column Seal - Option 1



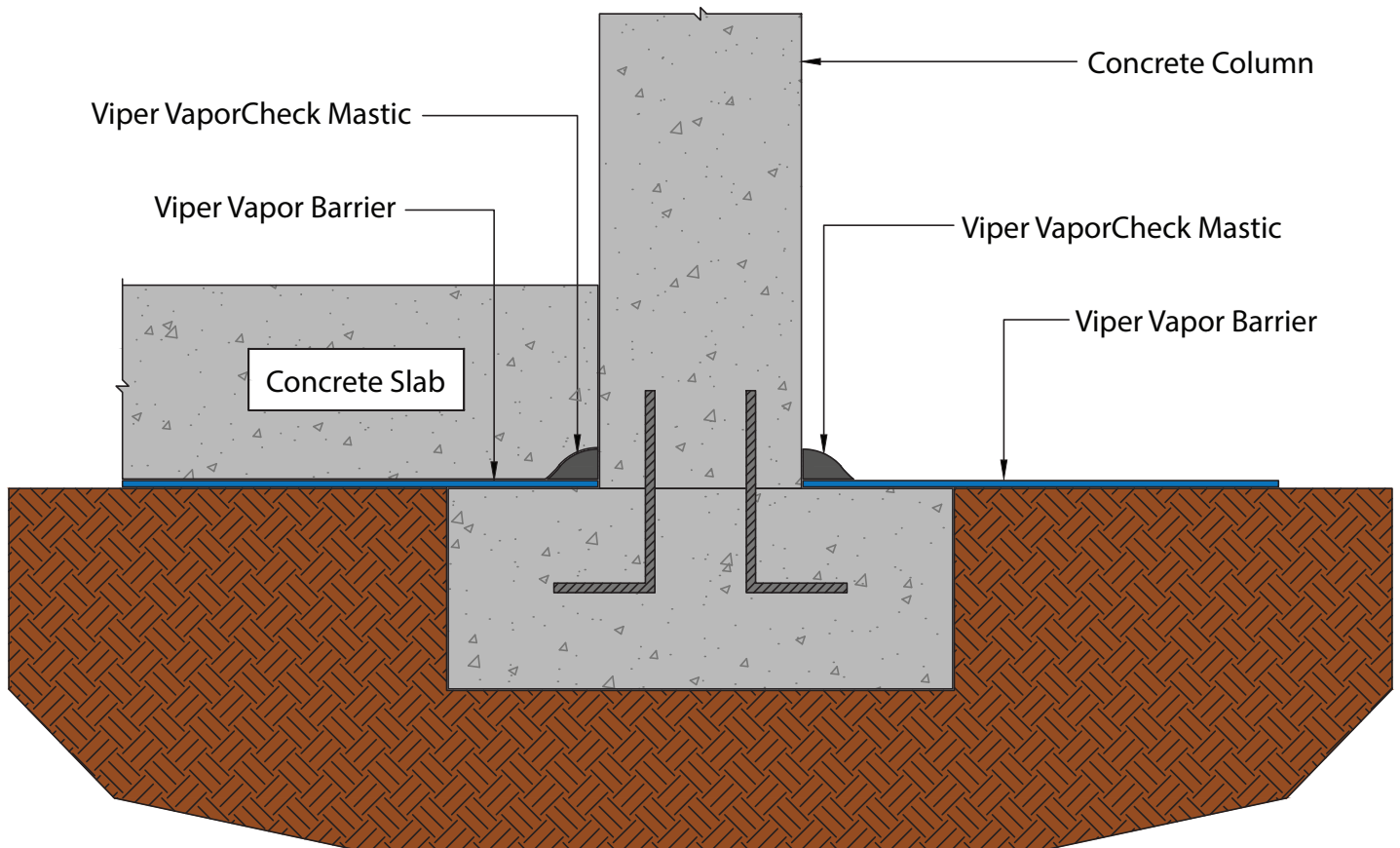
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Concrete Column Seal - Option 2



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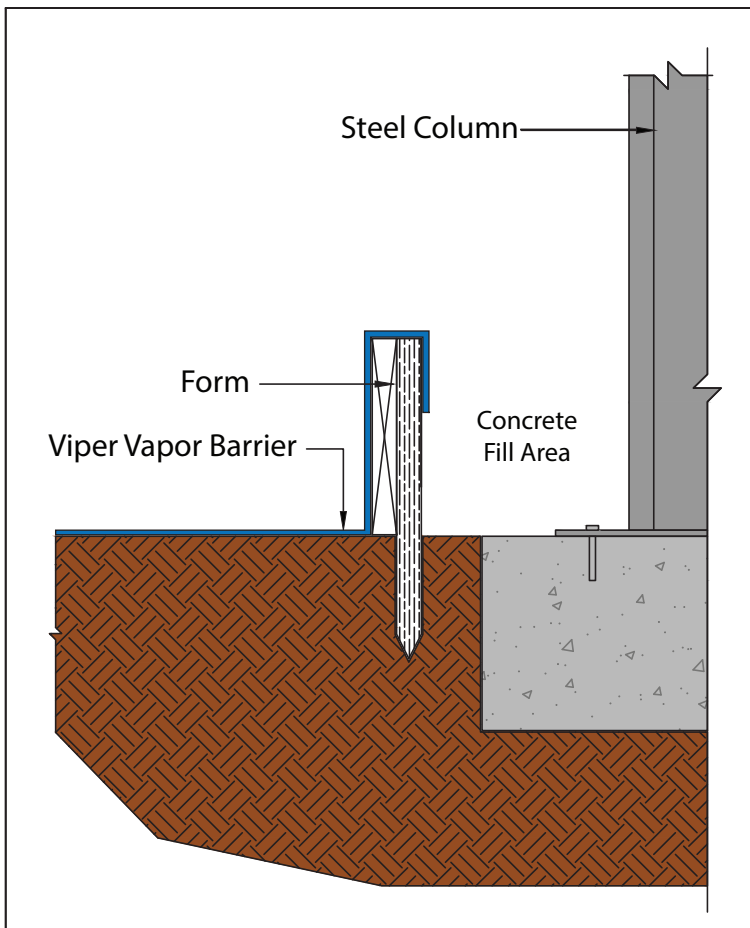


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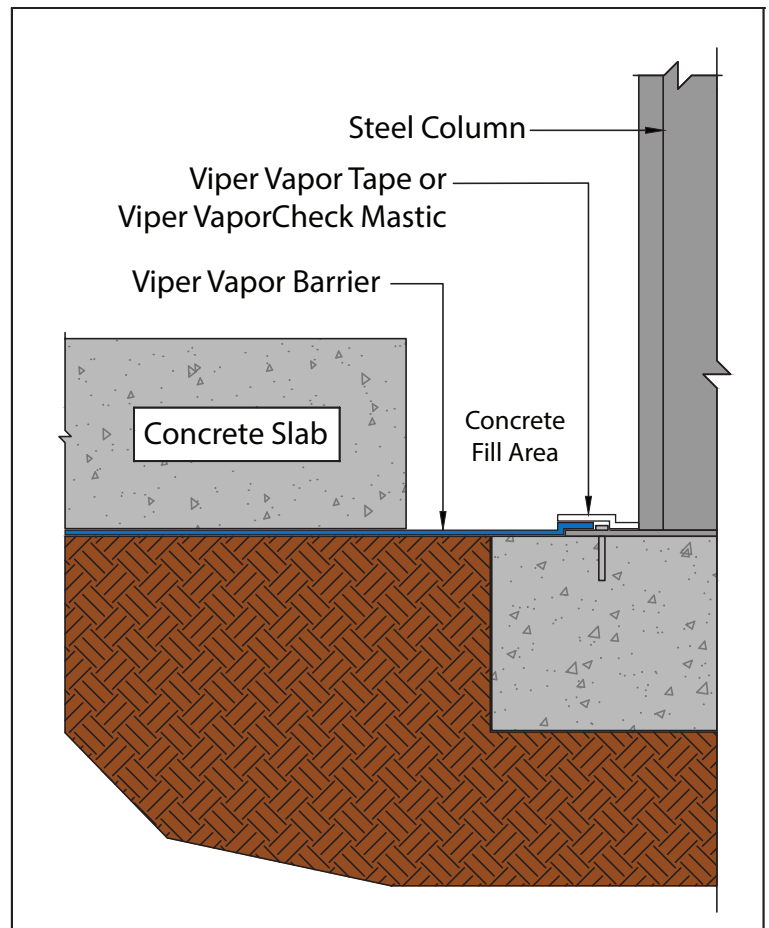
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Steel Column Seal - Option 1

STEP ONE:



STEP TWO:



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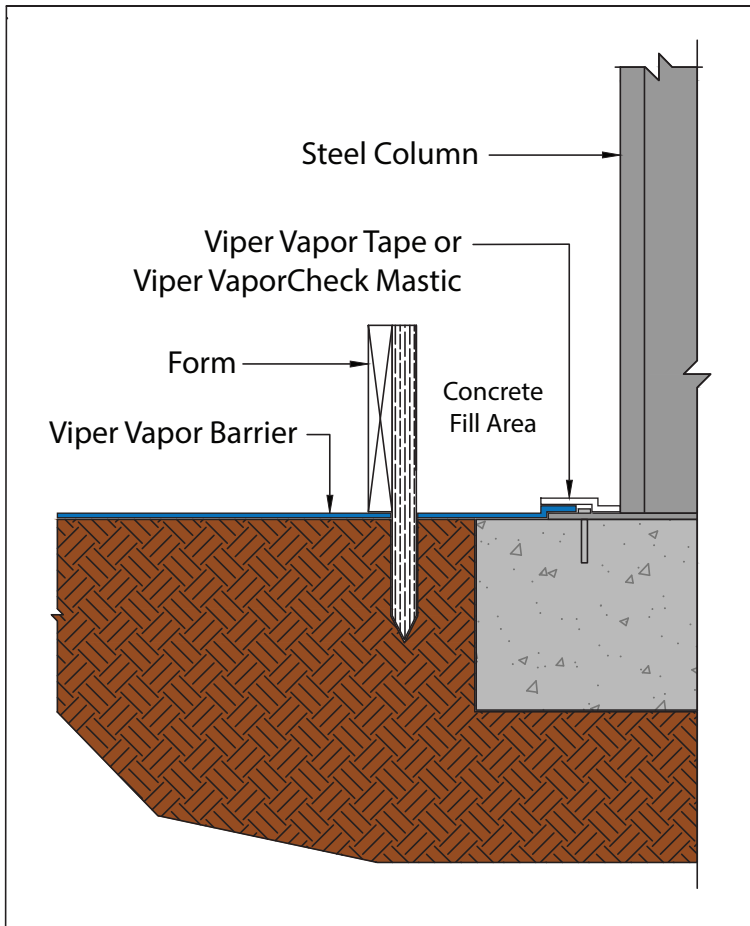


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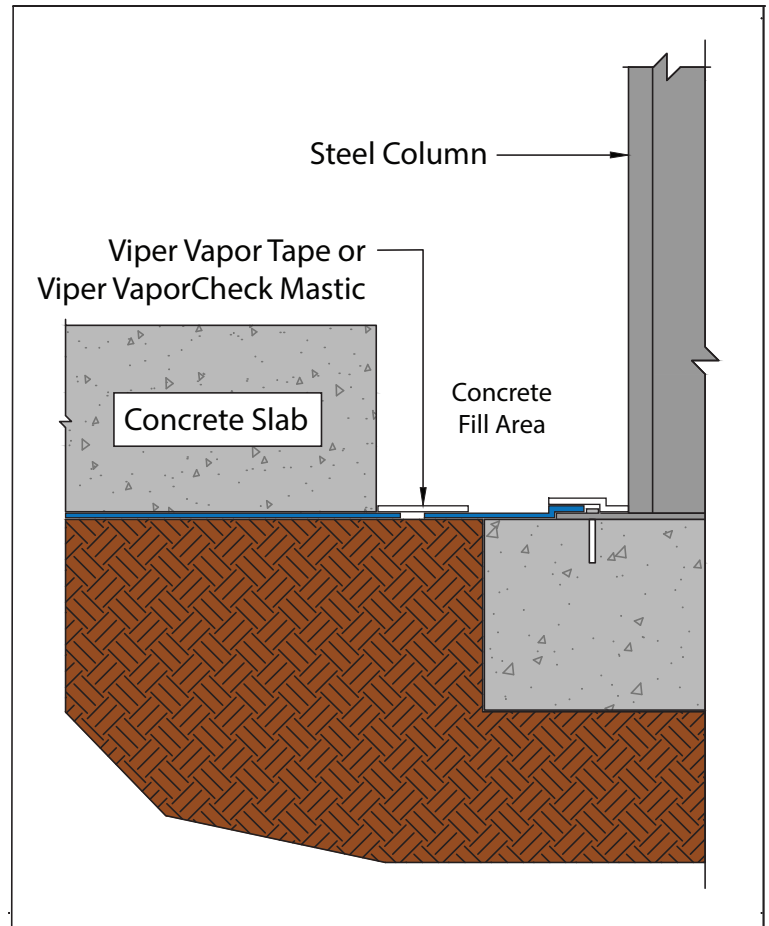
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Steel Column Seal - Option 2

STEP ONE:



STEP TWO:



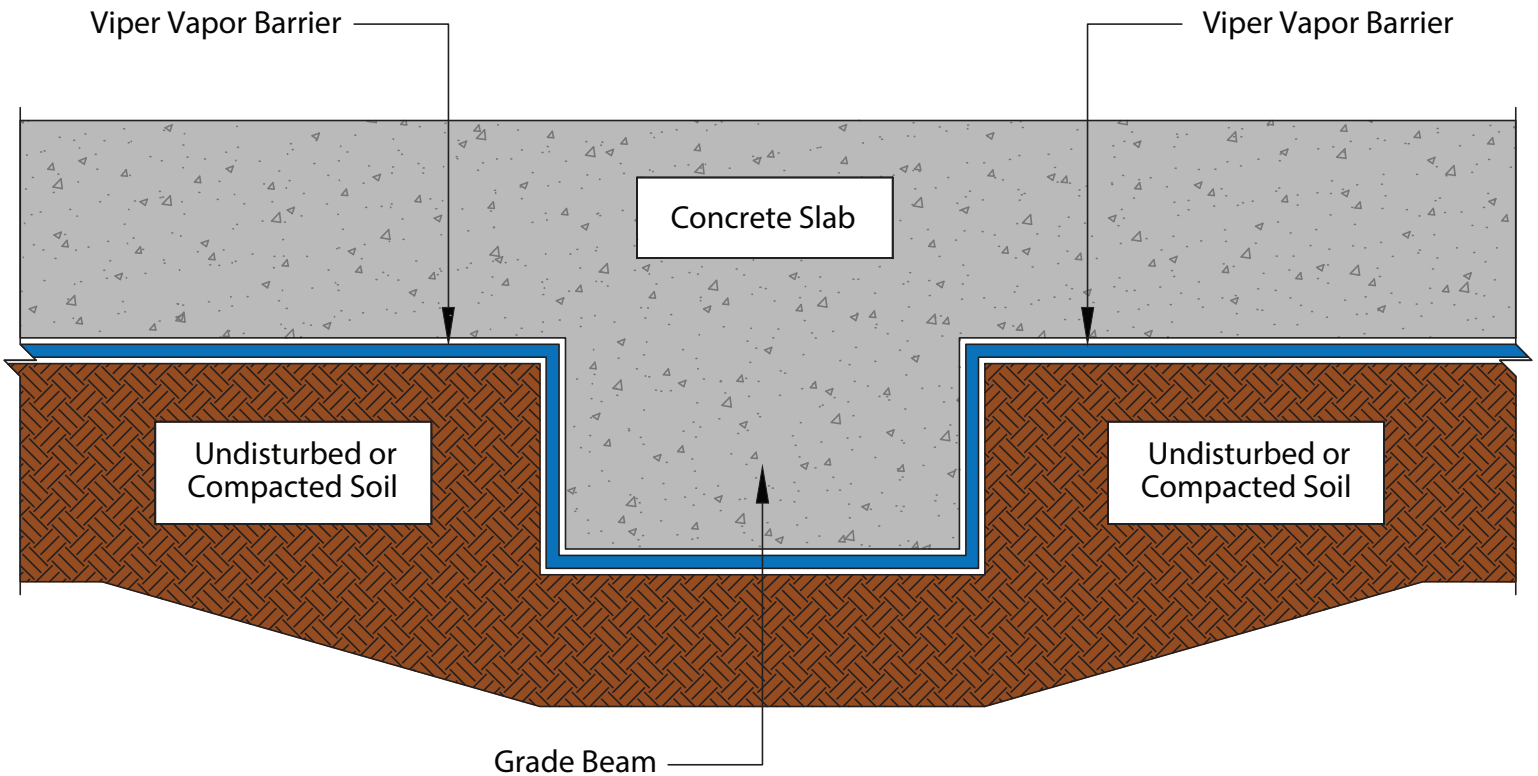
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Grade Beam - Option 1



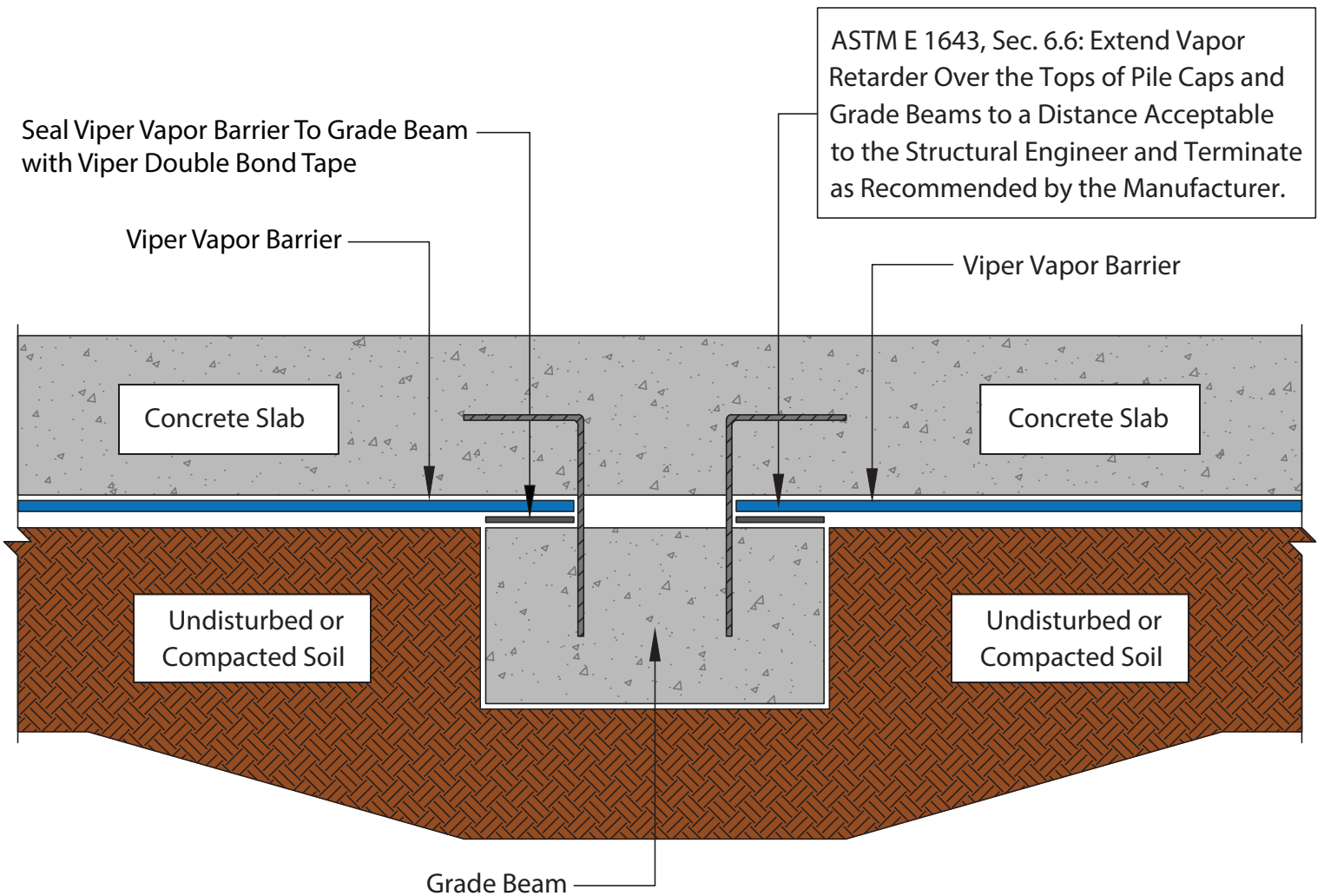
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Grade Beam - Option 2



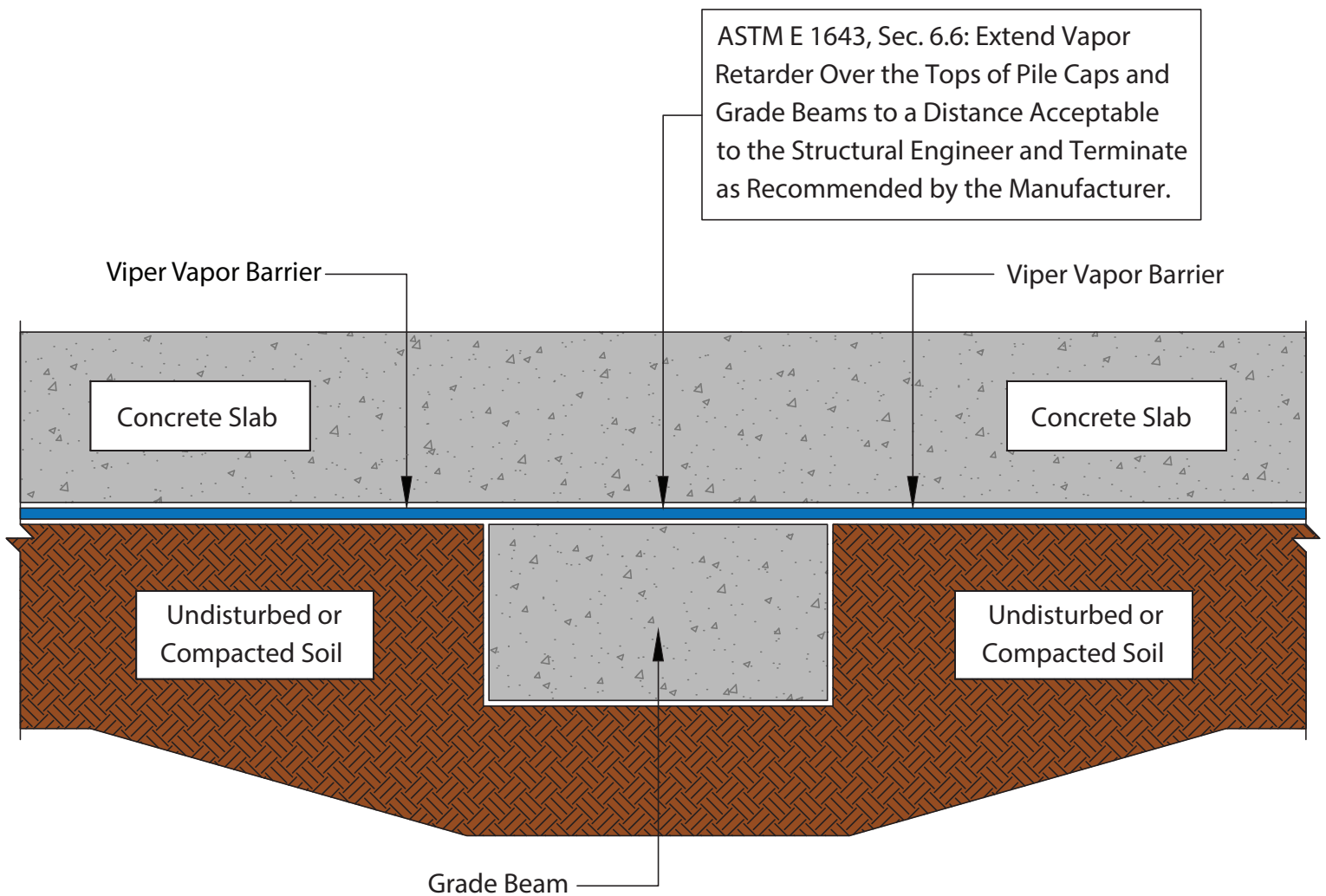
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Grade Beam - Option 3



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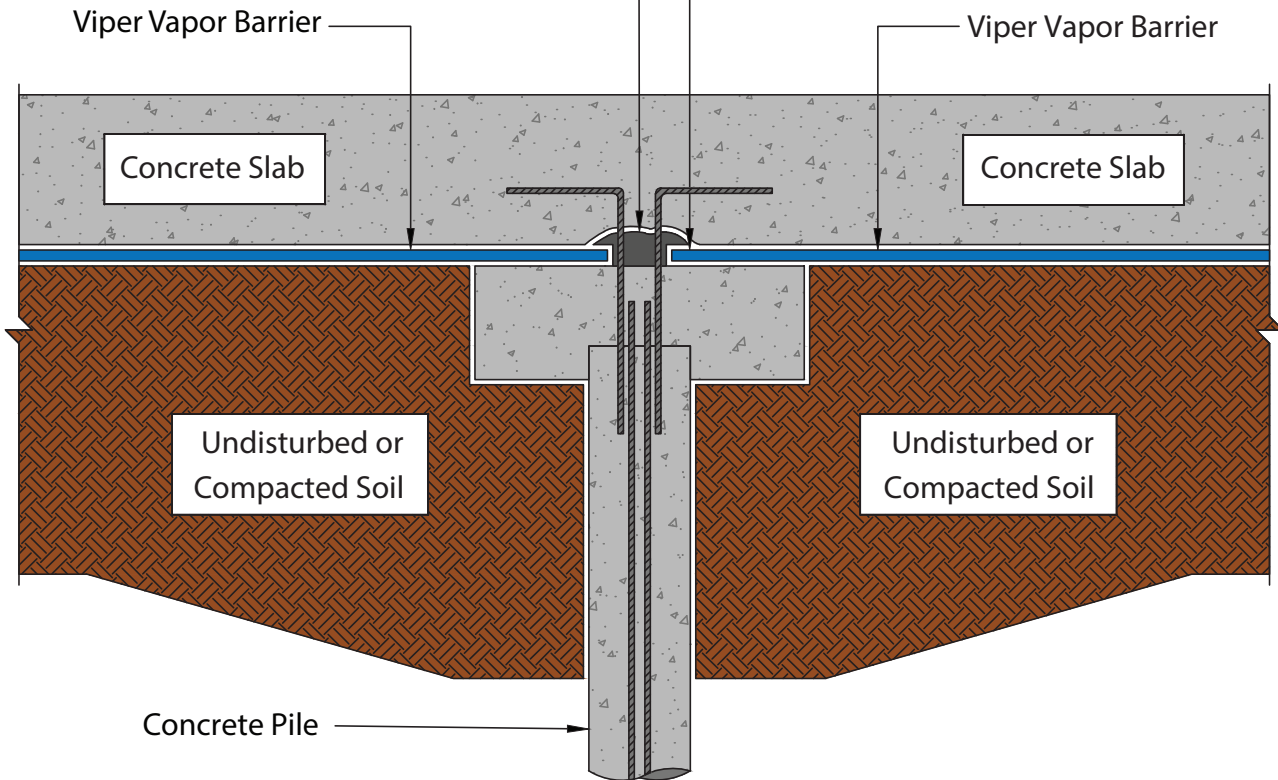
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Pile Cap - Option 1

Seal Viper Vapor Barrier to Pile Cap with Viper VaporCheck Mastic

ASTM E 1643, Sec. 6.6: Extend Vapor Retarder Over the Tops of Pile Caps and Grade Beams to a Distance Acceptable to the Structural Engineer and Terminate as Recommended by the Manufacturer.



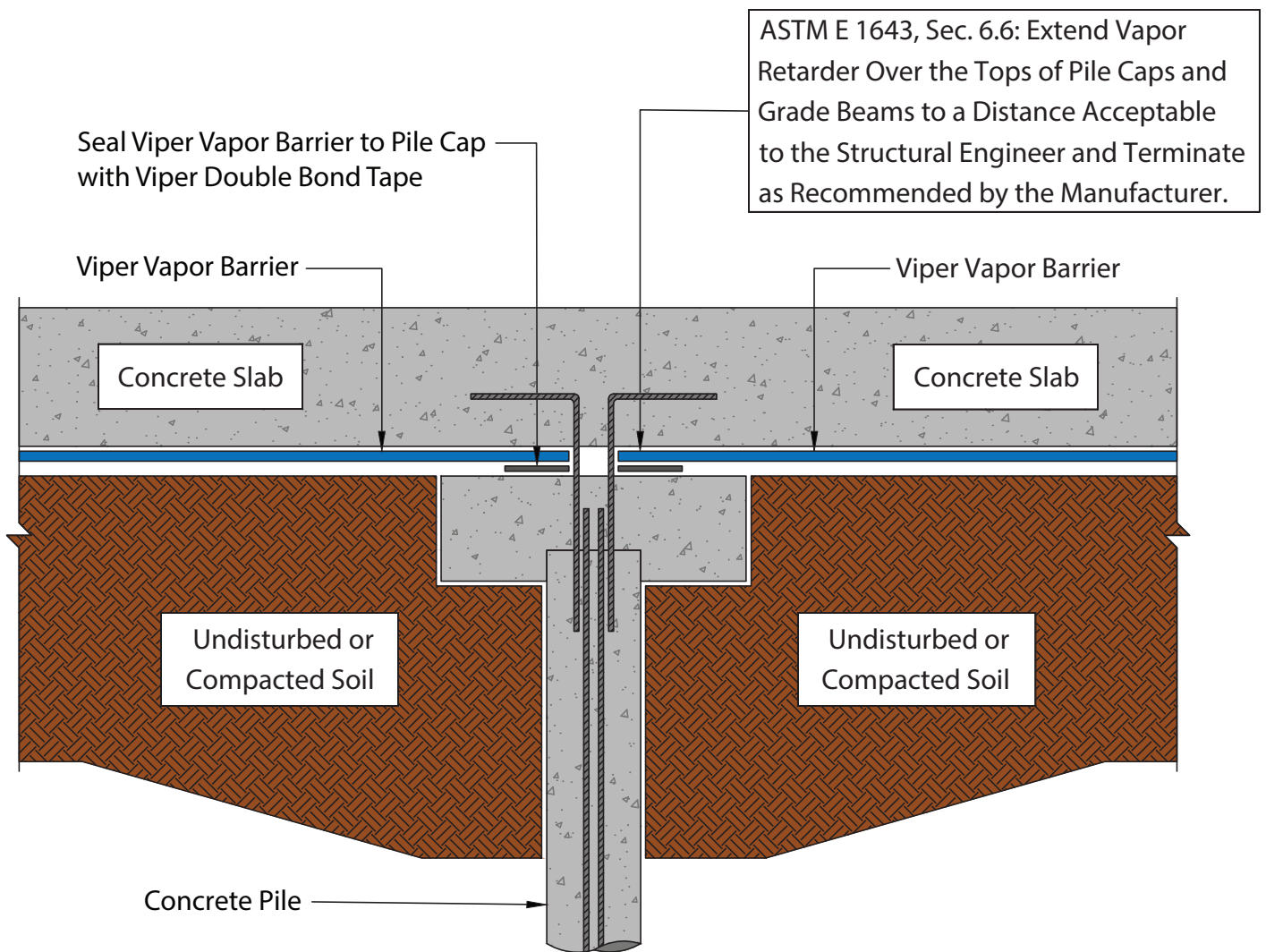
NOTE: VIPER VAPOR BARRIER DETAIL DRAWINGS ARE INTENDED TO BE USED AS A GUIDE. FOR FURTHER DETAILS, CHECK WITH LOCAL BUILDING CODES, ASTM E 1643, ACI 302, ACI 360 AND/OR ARCHITECTURAL/ENGINEERING SPECIFICATIONS. FOR TECHNICAL ASSISTANCE ON SPECIFIC JOBSITE SITUATIONS, PLEASE CONTACT ISI BUILDING PRODUCTS TOLL-FREE AT 866-698-6562.



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Pile Cap - Option 2



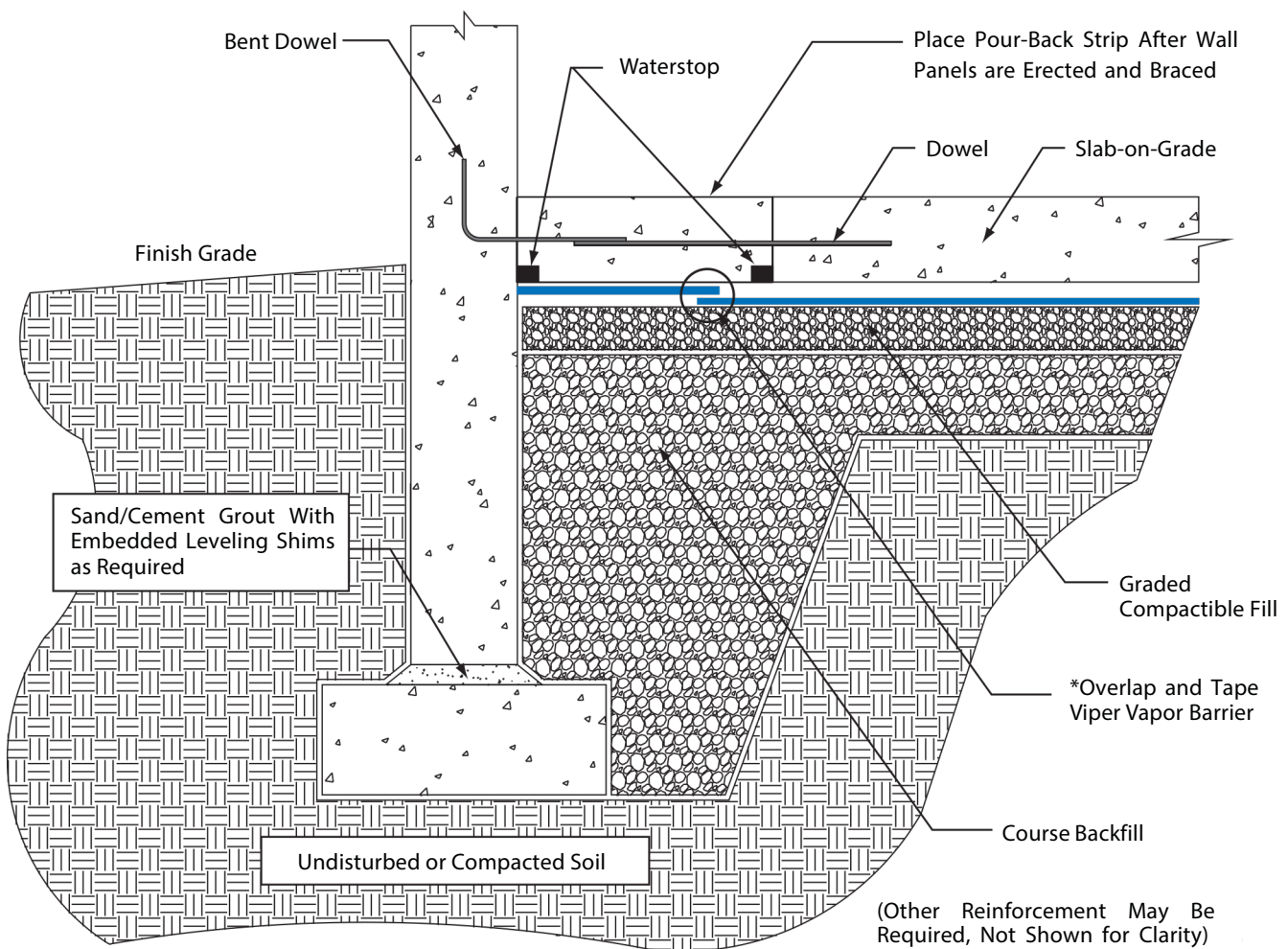
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Tilt-Up Wall with Pour Strip



*Viper Vapor Barrier Placement: Extend the initial placement of Viper Vapor Barrier at least 6-inch to 12-inch into the pour-back strip area. The pour-back strip is usually a 3-feet to 5-feet wide strip around the perimeter. Prior to filling the pour-back strip, install, overlap and tape Viper Vapor Barrier to existing piece.

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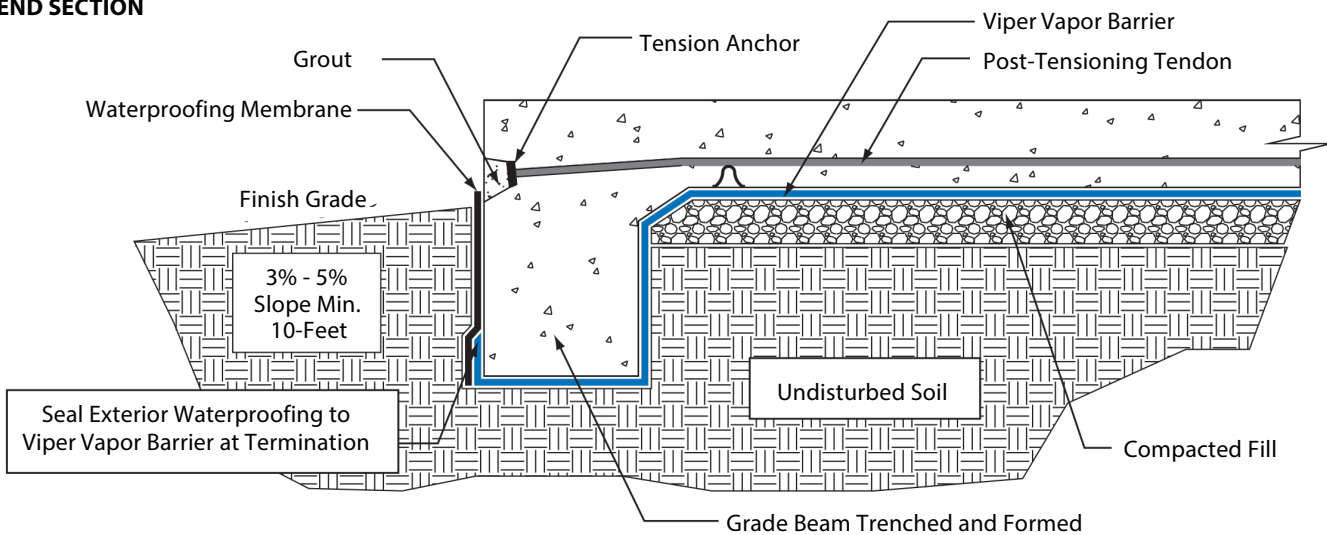


VAPOR RETARDERS

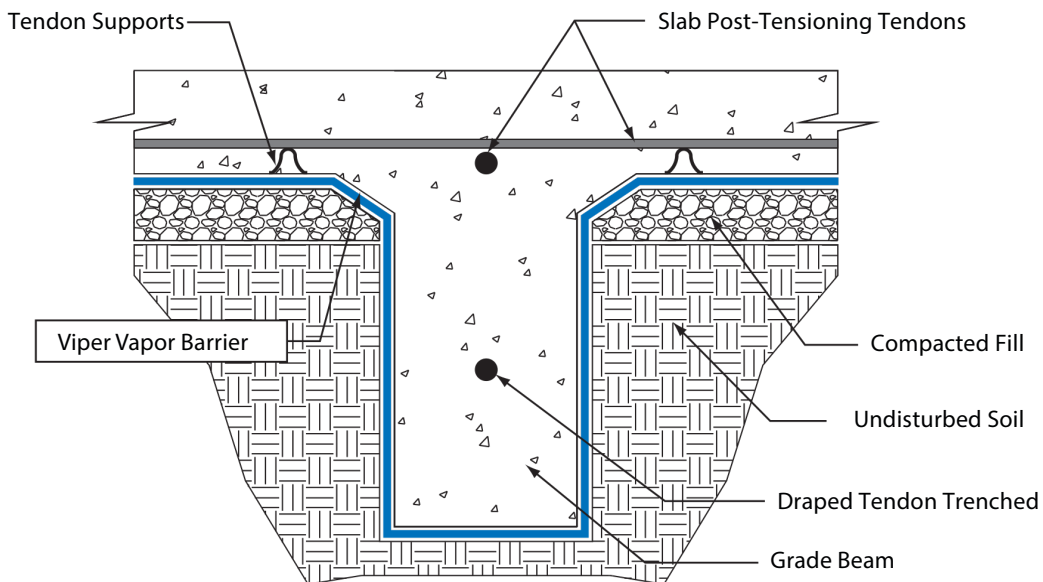
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Post-Tensioned Slab-on-Grade

1. END SECTION



2. INTERIOR SECTION



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