



VERSION 18.1

VAPOR RETARDERS

DIVISION

033000, 072600

1 PRODUCT NAME

PRODUCT NAME: Viper® Venom Barrier 20-mil Under-Slab Vapor / Gas Barrier

2 MANUFACTURER

ISI BUILDING PRODUCTS

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3 PRODUCT DESCRIPTION

3.1 BASIC USE

When properly installed, Viper Venom Barrier is designed to resist below slab water vapor and harmful soil gases that threaten the indoor air quality of the building's occupants.

3.2 COMPOSITION & MATERIALS

Viper Venom Barrier 20-mil is a blown barrier film manufactured using 7-layer, co-extrusion technology. It is made from virgin high density polyethylene (HDPE), low density polyethylene (LDPE) and ethylene vinyl alcohol (EVOH). EVOH resin is the latest resin technology used as a barrier layer against moisture and gas intrusion.

Viper Venom Barrier 20-mil offers high impact strength as well as superior resistance to gas and moisture transmission. Viper Venom Barrier 20-mil far exceeds the Class A, B and C requirements established by ASTM E 1745 (Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs).

3.3 SIZE

Standard Size: 16' x 100' rolls

3.4 WEIGHT

Approximately 163 lbs. per roll

4 TECHNICAL DATA

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

ASTM E 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting

4.2 ENVIRONMENTAL CONSIDERATIONS

Viper Venom Barrier 20-mil can aid in controlling soil gas and poisons such as methane, radon, sulfates and petroleum contaminated soil.

4.3 PHYSICAL PROPERTIES

Viper Venom Barrier 20-mil exceeds all ASTM E 1745 "Class A" requirements for under-slab vapor retarders.

5 INSTALLATION

5.1 SUB-GRADE PREPARATION

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

5.2 VAPOR BARRIER PLACEMENT

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

Extend Viper 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 Vapor Tape, Viper Double Bond Tape, Viper VaporPatch and/or VaporCheck Mastic at such terminations.

5.3 SEAMS AND PENETRATIONS

Seal around pipes, support columns or any other penetration with Viper VaporPatch, VaporCheck Mastic or at a minimum, a combination of Viper 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 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.

5.4 PROTECTION

When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect Viper. Carelessness during installation can damage the most puncture-resistant vapor barriers. Provide for additional protection in high traffic areas.

Place standard reinforcing bar supports on Viper. The strength characteristics of Viper will help guard against possible punctures caused by reinforcing bar supports.

Avoid driving stakes through Viper. 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 barrier 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 very general installation instructions. Instructions on architectural or structural drawings should be reviewed and followed. Detailed installation instructions can be obtained by calling our corporate office at 866.698.6562 or online at www.isibp.com.

6 AVAILABILITY AND COST

Viper is sold through construction supply houses and lumberyards across the United States and Canada. Current cost information can be obtained by calling our corporate sales office at 866.698.6562.

7 WARRANTY

Additional warranty information can be obtained by calling our corporate office at 866.698.6562 or online at www.isibp.com.

8 MAINTENANCE

Requires no maintenance once installed.

9 TECHNICAL SERVICES

Technical information and detailed test results can be obtained by calling ISI Building Products corporate office at 866.698.6562.

10 FILING SYSTEMS

Additional information can be obtained by calling our corporate office at 866.698.6562 or online at www.isibp.com.

PROPERTIES	TEST METHOD	RESULTS
TEST PROCEDURE - INDEPENDENT TEST FACILITY	APPLICABLE STANDARDS	IP UNITS
THICKNESS (nominal)	N/A	20-mil
WEIGHT	N/A	102 lbs/MSF
CLASSIFICATION	ASTM E 1745	EXCEEDS CLASS A, B, C
PUNCTURE RESISTANCE	ASTM D 1709 METHOD B	2,400 grams
TENSILE STRENGTH	ASTM E 154, SEC. 9 (D882)	54 lbf/in
OPERATING TEMPERATURE RANGE	N/A	-70° F to 180° F
WATER VAPOR PERMEANCE (NEW MATERIAL)	ASTM E 96 PROCEDURE B	0.0052 perms*
WATER VAPOR TRANSMISSION RATE (WVTR)	ASTM E 96 PROCEDURE B	0.0022 grains/hr-ft ²
WATER VAPOR PERMEANCE (After Wetting, Drying and Soaking)	ASTM E 154 SEC. 8, E96	<0.01 perms*
WATER VAPOR PERMEANCE (After Heat Conditioning)	ASTM E 154 SEC. 11, E96	<0.01 perms*
WATER VAPOR PERMEANCE (After Low Temperature Conditioning)	ASTM E 154 SEC. 12, E96	<0.01 perms*
WATER VAPOR PERMEANCE (After Soil Organism Exposure)	ASTM E 154 SEC. 13, E96	<0.01 perms*
BENZENE DIFFUSION COEFFICIENT		0.045 x 10 ⁻¹³ m ² /sec**
TOLUENE DIFFUSION COEFFICIENT		0.042 x 10 ⁻¹³ m ² /sec**
ETHYLBENZENE DIFFUSION COEFFICIENT		0.040 x 10 ⁻¹³ m ² /sec**
M & P-XYLENES DIFFUSION COEFFICIENT		0.037 x 10 ⁻¹³ m ² /sec**
O-XYLENE DIFFUSION COEFFICIENT		0.037 x 10 ⁻¹³ m ² /sec**

*Grains/(hr*ft²*in Hg)

**Vapor Phase Diffusion Coefficient: Diffusive Transport of VOCs through LLDPE and Two Coextruded Geomembranes, McWatters and Rowe, Journal of Geotechnical and Geoenvironmental Engineering© ASCE/September 2010.

NOTE:

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