TDS

VERSION 20.0

VIPER VENOM BARRIER

20-MIL "CLASS A" VAPOR/GAS BARRIER

VAPOR RETARDERS

DIVISION
033000, 072600

PRODUCT NAME

Viper• Venom Barrier 20-mil "Class A"
Under-Slab Vapor/Gas Barrier

MANUFACTURER

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

PRODUCT DESCRIPTION

BASIC USE

Viper Venom Barrier 20-mil is designed to resist below-slab water vapor and harmful soil gases that threaten the indoor air quality of the building's occupants when properly installed.

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.

SIZE

Standard Size: 12' x 100' rolls

WEIGHT

102 lbs/MSF

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 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

ENVIRONMENTAL CONSIDERATIONS

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

PHYSICAL PROPERTIES

Viper Venom Barrier 20-mil far exceeds the Class A, B and C requirements for under-slab vapor retarders established by ASTM E 1745 (Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs).

Viper Venom Barrier 20-mil offers high impact strength as well as superior resistance to gas and moisture transmission.

INSTALLATION

SUB-GRADE PREPARATION

Follow 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). Level and tamp or roll granular base as specified by the architectural or structural drawings. A four-inch to 6-inch layer of clean coarse aggregate may be required when a soil gas reduction system is specified. For such applications architectural and structural drawings may require a non-woven geotextile fabric for added protection.

VAPOR BARRIER PLACEMENT

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

Extend Viper Venom 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. Use Viper Double Bond Tape or a combination of Viper Double Bond Tape and Viper Vapor Tape at such terminations. All surfaces must be dry and clean prior to installing Viper Double Bond Tape. Firmly press Viper Double Bond Tape into place using a rubber roller.

SEAMS AND PENETRATIONS

Seal around pipes and penetrations with a combination of Viper Venom Barrier, Viper Double Bond Tape, Viper Vapor Tape and/or Viper VaporCheck Mastic. For soil gas applications, it is recomended that an approved two-component construction grade epoxy be used to seal around multiple pipe penetrations.

Holes or openings through Viper Venom Barrier should be effectively sealed with a combination of Viper Venom Barrier, Viper Double Bond Tape and Viper Vapor Tape to maintain the integrity of the vapor barrier. Overlap joints a minimum of twelve inches. Seal overlap together with a combination of Viper Double Bond Tape and Viper Vapor Tape. For soil gas applications, it is recommended that the top seam be sealed with approved foil or EVOH tape.

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

Place brick/chair type reinforcing bar supports on Viper Venom Barrier.

Avoid driving stakes through Viper Venom Barrier. 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 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	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/(ft²*hr)
WATER VAPOR PERMEANCE (AFTER WETTING, DRYING AND SOAKING) WATER VAPOR PERMEANCE (AFTER HEAT CONDITIONING) WATER VAPOR PERMEANCE (AFTER LOW TEMPERATURE CONDITIONING) WATER VAPOR PERMEANCE (AFTER SOIL ORGANISM EXPOSURE)	ASTM E 154 SEC. 8, E96 ASTM E 154 SEC. 11, E96 ASTM E 154 SEC. 12, E96 ASTM E 154 SEC. 13, E96	<0.01 perms* <0.01 perms* <0.01 perms* <0.01 perms*
BENZENE DIFFUSION COEFFICIENT	N/A	0.045×10^{-13} m²/ sec**
TOLUENE DIFFUSION COEFFICIENT	N/A	0.042×10^{-13} m²/ sec**
ETHYLBENZENE DIFFUSION COEFFICIENT	N/A	0.040×10^{-13} m²/ sec**
M & P-XYLENES DIFFUSION COEFFICIENT	N/A	0.037×10^{-13} m²/ sec**
O-XYLENE DIFFUSION COEFFICIENT	N/A	0.037×10^{-13} m²/ sec**
RADON DIFFUSION COEFFICIENT	ISO/TS 11665-13 METHOD A	6.0×10^{-14} m²/ sec

**grains/(ft²*hr*inHg)*
***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.*

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