



VIPER® CS

16-MIL CLASS A

VAPOR RETARDERS

DIVISION

03300, 07260

1 PRODUCT NAME

Product Name: VIPER® CS 16-MIL
Crawl Space Vapor Barrier

2 MANUFACTURER

ISI BUILDING PRODUCTS

Insulation Solutions, Inc.
401 Truck Haven Rd., East Peoria Illinois 61611
Phone: 866.698.6562 / Fax: 309.698.0065 / www.isibp.com

3 PRODUCT DESCRIPTION

3.1 BASIC USE

Viper CS 16-mil is a high performance crawl space vapor barrier designed to prevent moisture migration from the soil into the crawl space. Viper CS 16-mil helps guard against mold, mildew, allergens, fungus, radon gas, methane gas, heat loss due to damp insulation, wood rot and overall degradation of the crawl space.

3.2 COMPOSITION & MATERIALS

Viper CS 16-mil white, triple-ply, extrusion coated, virgin polyethylene membrane. Viper CS 16-mil is manufactured using woven high-density fibers yielding the highest strength to weight ratio, tensile strength and puncture resistance of any product of its kind.

3.3 SIZE

Standard size: 2,400 sq ft rolls (12' x 200')
1,200 sq ft rolls (12' x 100')

3.4 WEIGHT

47 lbs per 1,000 sq ft

4 TECHNICAL DATA

4.1 APPLICABLE STANDARDS

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

ASTM D 6241 Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe

4.2 ENVIRONMENTAL CONSIDERATIONS

Viper CS 16-mil can aid in reducing soil gas and poisons, such as methane and radon.

4.3 PHYSICAL PROPERTIES

Viper CS 16-mil exceeds all **ASTM E 1745** Class A, B and C requirements for under-slab vapor retarders.

5 INSTALLATION

PLACEMENT

5.1 If sump pump is present or is to be installed, slightly slope grade in the direction of the sump pit to allow for proper drainage. Tamp or roll sub base or granular base.

5.2 Unroll Viper CS 16-mil in correlation with the longest dimension of the crawl-space area. Unfold to twelve foot width.

5.3 Install Viper CS 16-mil by means of Viper Double Bond Tape, mechanical fasteners, termination bar and/or high grade construction adhesive to the upper portion of the block/concrete wall. Leave at least a three inch gap from the sill to the top of the Viper CS 16-mil for future termite inspection. Seal the top edge of Viper CS 16-mil with urethane caulk.

5.4 Holes or openings through Viper CS 16-mil should be effectively sealed with all weather Viper VaporTape, white polyethylene tape, Viper VaporPatch and/or mastic to maintain the integrity of the vapor barrier. Overlap joints a minimum of six inches. Seal overlap together with all weather Viper VaporTape or white polyethylene tape.

PROTECTION

5.5 Proper care should be taken when installing Viper CS 16-mil. Carelessness during installation can damage even the most puncture resistant vapor retarders.

5.6 Viper CS 16-mil will help guard against possible punctures and tears present from rigorous construction traffic.

5.7 Avoid driving stakes through Viper CS 16-mil. If this cannot be avoided, each individual hole must be repaired.

These are very general installation instructions. All installation instructions on architectural and/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 CS 16-mil is sold through construction supply houses across the United States and Canada.

Viper CS 16-mil current cost information can be obtained by calling our corporate sales office at 866.698.6562.

7 WARRANTY

25 Year 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 toll free 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	
THICKNESS (nominal)	N/A	16-MIL	0.40 MM
WEIGHT (per msf)	N/A	47 LBS	21.3 KG
CLASSIFICATION	ASTM E 1745	CLASS A, B, C	
TENSILE STRENGTH (new material)	ASTM E 154, SEC. 9	167 LBF/IN (MD) 158 LBF/IN (TD)	292 N/CM (MD) 276 N/CM (TD)
TENSILE STRENGTH (after soaking)	ASTM E 154, SEC. 9	165 LBF/IN (MD) 163 LBF/IN (TD)	289 N/CM (MD) 285 N/CM (TD)
TEAR STRENGTH	ASTM D 751 TONGUE	62 LBS (WARP) 60 LBS (WEFT)	28 KG 27.2 KG
GRAB TENSILE*	ASTM D 751	242 LBF (directional avg.)	110.6 KG (directional avg.)
BURSTING STRENGTH	ASTM D 751 MULLEN	371 LBS	168.3 KG
PUNCTURE RESISTANCE (maximum weight sustained)	ASTM D 1709	25,335 GRAMS	
PUNCTURE RESISTANCE	ASTM D 5602	123 LBS.	55,792 G
CBR PUNCTURE	ASTM D 6241	594 LBF	2,642 N
MAXIMUM USE TEMPERATURE	N/A	180° F	82° C
MINIMUM USE TEMPERATURE	N/A	-70° F	-57° C
WATER VAPOR PERMEANCE	ASTM E 96 / 154 SEC. 7	.0015 PERMS	.00098 PERMS
WATER TRANSMISSION RATE		.00055 GRAINS/FT ² *HR	.00038 GRAMS/M ² *HR

*TESTS ARE AN AVERAGE OF MACHINES AND TRANSVERSE DIRECTIONS

NOTE:

TO THE BEST OF OUR KNOWLEDGE, THE SPECIFICATION CHARTS LIST 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.

ISI BUILDING PRODUCTS

INSULATION SOLUTIONS, INC. AN AFFILIATE OF MEYER ENTERPRISES, LLC
401 TRUCK HAVEN RD., EAST PEORIA ILLINOIS 61611
PHONE: 309.698.0062 / FAX: 309.698.0065

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