

## Masonry Insulation

### MANUFACTURER

Specialty Vermiculite Construction Products  
 26363 Hwy 221 N  
 Enoree, SC 29335  
 Phone: (864) 969.3379  
 (800) 342.2017  
 Fax: (868) 969.9923

### PRODUCT DESCRIPTION

**Basic Use:** Masonry Insulation is free-flowing vermiculite used to insulate masonry wall cores or cavities. It also increases the fire resistance rating and sound transmission classification (STC) of the wall system.

**Limitations:** Where average interior relative humidity exceeds 50%, a vapor barrier is recommended on the exterior side of the interior wythe of the cavity wall or composite masonry wall system.

**Composition and Materials:** Masonry Insulation, available in four (4) cu. ft. bags, is lightweight, free-flowing, inorganic vermiculite, specially treated for water repellency. It has a dry loose weight density of 4.5-7.0 lbs./ft.3 and is capable of supporting its own weight, so it will not settle. It is fire-resistant (fusion point approximately 2200°F), rot-proof, and vermin-proof.

### Approvals

Underwriters' Laboratories, Inc. (UL) Fire Resistance Directory, approved designs include:

- Design U-901
- Design U-904
- Design U-905
- Design U-907

**Safety:** Health and safety information is available on this product. Contact Specialty Vermiculite for a Material Safety Data Sheet.

Table 1: Concrete Block Walls

Wall Thickness	Type of Block		R-Value	U-Value
6"	Lightweight	Uninsulated	2.5	.40
		Insulated	3.8	.26
8"	Lightweight	Uninsulated	3.0	.33
		Insulated	5.9	.17
8"	Heavyweight	Uninsulated	2.1*	.48*
		Insulated	3.1*	.32*
12"	Lightweight	Uninsulated	3.3	.30
		Insulated	8.0*	.12*
12"	Heavyweight	Uninsulated	2.3*	.44*
		Insulated	4.2*	.24*

Table 2: Concrete Block and Brick Veneer Walls

Interior Wythe Thickness	Type Block	4" Face Brick		4" Common Brick		
		R-Value	U-Value	R-Value	U-Value	
6"	Lightweight	Uninsulated	3.0	.33	3.3	.30
		Insulated	4.3	.23	4.6	.22
8"	Lightweight	Uninsulated	3.5	.29	3.8	.26
		Insulated	6.3	.16	6.7	.15
8"	Heavyweight	Uninsulated	2.4	.42	2.8	.36
		Insulated	3.2	.31	3.6	.28

**Applicable Standards:** American Society for Testing & Materials (ASTM)

- **ASTM E 84-96a** – Surface Burning Characteristics of Building Materials

Masonry Insulation can be manufactured to meet or exceed the following standards:

- American Society for Testing and Materials, Specification for Vermiculite Loose Fill Insulation, ASTM C 516-80, Type II Material
- Federal Specification for Insulation, Thermal (Vermiculite) HH-1-585C\*
- National Concrete Masonry Association General Performance Criteria
- Federal Housing Authority (FHA) – FHA Bulletin UM-30

### TECHNICAL DATA

**Heat Transmission:** Tables 1-4 provide system thermal design values (and measured values where noted) for thermal transmittance (U) and thermal resistance @ for common constructions insulated with Masonry Insulation. A Manufacturer's Insulation Fact Sheet is available upon request.

**Fire Resistance Rating:** Masonry

Insulation will not burn. When tested in

accordance with the ASTM E 84 Tunnel Test,

Masonry Insulation received the following ratings:

Flame Spread	0
Fuel Contributed	0
Smoke Developed	0

And, UL Designs U-901, U-904, U-905, and U-907 will improve to a minimum 4-hour rated wall when filled with Masonry Insulation. Due to its outstanding performance in the UL Fire Wall Test, 6-hour rated walls can be achieved when filled with Masonry Insulation.

**Sound Transmission:** Masonry Insulation has an STC rating of 51, which means noise transmission is reduce by 24% to a level where room-to-room conversation is inaudible. Test results are available upon request.

**Water Permeance:** Specially treated Masonry Insulation eliminates moisture condensation. Tests conducted by the

Masonry Insulation in cavity walls showed virtually no water permeation.

Further, there is no need for a vapor barrier when the average indoor relative humidity does not exceed 50% (FHA Bulletin UM-30).

**Approximate Coverage:** When installed according to manufacturer's recommendations, approximate coverage may be calculated using Table 5.

**INSTALLATION**

**Preparatory Work:** Block joints at pilasters or other

vertical members should be mortared, and weep holes should be filled with glass fiber, rope or copper screen to prevent insulation leakage.

**Method:** Insulation should be poured from the bag or hopper directly into the concrete block core or wall cavity. Pours may be made at any interval, but not to exceed 20 feet in height, without requiring bridging. Rodding and tamping are not required.

**AVAILABILITY AND COST**

a network of distributors carry Masonry Insulation for prompt delivery to project sites. Contact a Specialty Vermiculite Products representative for ordering and delivery information.

**Cost:** Masonry Insulation is competitively priced. For specific information, contact a Specialty Vermiculite representative.

**WARRANTY**

Specialty Vermiculite products are warranted to meet published specifications at time of delivery. For further information, contact a Specialty Vermiculite representative.

**MAINTENANCE**

Masonry Insulation may be stored indefinitely and, when installed with manufacturer's recommendations, it will not require maintenance.

**TECHNICAL SERVICES**

Support is provided by full-time, technically-trained Specialty Vermiculite representatives and technical personnel. They are supported by a central research and development technical services staff.

**FILING DATA**

For further information, contact Specialty Vermiculite Construction Products, Specialty Vermiculite.

Table 5: Number of 4 cubic foot bags required to fill:			
Sq. Ft. of Wall Area	8" Block	12" Block	1" Cavity
1,000	68	121	21
Sq. Ft. of Wall Area	2" Cavity	2½" Cavity	4" Cavity
1,000	42	50	95

Table 4: Cavity Walls Uninsulated Lightweight 4" Block (4" Exterior Wythe)						
		Cavity Dimension				
Interior Wythe Thickness	Type of Construction	2½"		4½"		
		R-Value	U-Value	R-Value	U-Value	
4"	Lightweight Concrete Block	Uninsulated	4.8	.21	4.8	.21
		Cavity Insulated	9.9	.10	14.7	.07
4"	Heavyweight Concrete Block	Uninsulated	4.0	.25	4.0	.25
		Cavity Insulated	9.1	.11	13.9	.07
4"	Concrete (Cinder) Block or Clay Tile	Uninsulated	4.4	.23	4.4	.23
		Cavity Insulated	9.5	.11	14.3	.07
4"	Face Brick	Uninsulated	3.8	.27	3.8	.27
		Cavity Insulated	8.8	.11	13.6	.07
4"	Common Brick	Uninsulated	4.1	.24	4.1	.24
		Cavity Insulated	9.2	.11	14.0	.07
6"	Lightweight Concrete Block	Uninsulated	5.0	.20	5.0	.20
		Cavity Insulated	10.0	.10	14.8	.07
		Cavity & Block Insulated	11.3	.09	16.1	.06
8"	Lightweight Concrete Block	Uninsulated	5.5	.18	5.5	.18
		Cavity Insulated	10.5	.10	15.3	.07
		Cavity & Block Insulated	13.4	.07	18.2	.06

Table 3: Cavity Walls Face Brick (4" Exterior Wythe)						
		Cavity Dimension				
Interior Wythe Thickness	Type of Construction	2½"		4½"		
		R-Value	U-Value	R-Value	U-Value	
4"	Lightweight Concrete Block	Uninsulated	3.8	.27	3.8	.27
		Cavity Insulated	8.8	.11	13.6	.07
4"	Heavyweight Concrete Block	Uninsulated	3.0	.34	3.0	.34
		Cavity Insulated	8.0	.12	12.8	.08
4"	Concrete (Cinder) Block or Clay Tile	Uninsulated	3.4	.30	3.4	.30
		Cavity Insulated	8.4	.12	13.2	.08
4"	Face Brick	Uninsulated	2.7	.37	2.7	.37
		Cavity Insulated	7.7	.13	12.5	.08
4"	Common Brick	Uninsulated	3.1	.33	3.1	.33
		Cavity Insulated	8.1	.12	12.9	.08
6"	Lightweight Concrete Block	Uninsulated	3.9	.26	3.9	.26
		Cavity Insulated	8.9	.11	13.7	.07
		Cavity & Block Insulated	10.3	.10	15.1	.07
8"	Lightweight Concrete Block	Uninsulated	4.4	.23	4.4	.23
		Cavity Insulated	9.5	.11	14.3	.07
		Cavity & Block Insulated	12.3	.08	17.1	.06

## The Specialty Vermiculite Wall System

### The Performance of Cavity Wall Construction with the Economics of Single-Wythe Design

The cavity wall concept had long been accepted and used in masonry construction. It utilizes the drainage all principles of a) protection, b) collection, c) drainage, and d) back-up through the components of an a) exterior veneer, b) flashing and weep system, c) cavity for drainage and d) back-up wythe. With the Specialty Vermiculite Masonry Products Solution you can achieve cavity wall performance in a single-wythe construction. Here's how:

**A. Protection.** The Dry-Block® systems of admixtures in the CMU and mortar provide the first line of defense in preventing moisture entry. The face shell acts as the protection just as the veneer wythe in a cavity wall does.

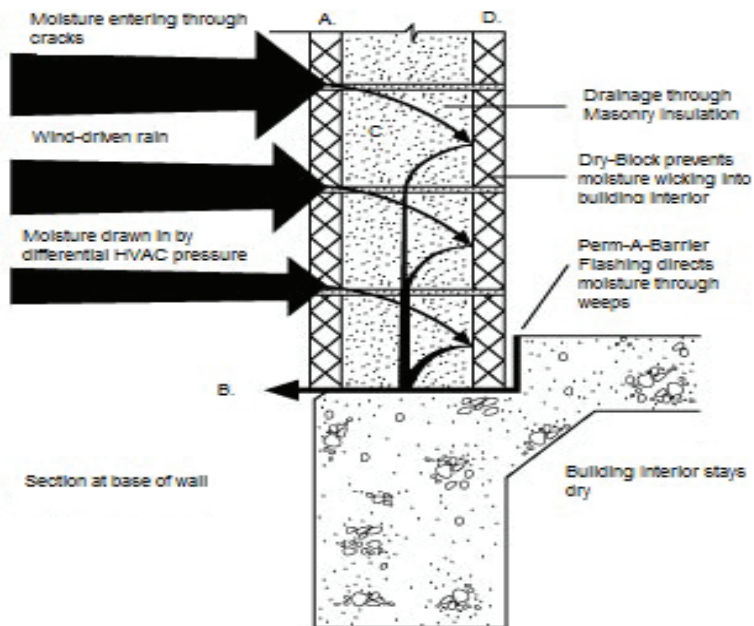
**B. Collection.** Use of Perm-A-Barrier® Wall Flashing collects the water that passes through the face shell, down the exterior face shell and then is directed out the exterior through the weep

system. Drainage. The open cores of block in a single-wythe wall can act similarly to a cavity, allowing water to drain to the flashing areas. Masonry Insulation provides for a drainable insulation in the core, providing high thermal performance while allowing drainage of the wall.

**C. Back-up.** Since the Dry-Block system is throughout the mortar and block, its water-repellent performance allows the back shell of

the CMU to act as the back-up wythe as in a cavity wall.

If the economies of your product don't allow for cavity wall construction, consider the Specialty Vermiculite Wall System single-wythe solution. Refer to the short for specification above. Contact your local Specialty Vermiculite representative for an architectural manual which contains full specifications and details.



*For additional information, please contact your local Sales Representative:*

#### Southeast

Donna Frassrand Chatfield  
770-262-0396  
dfrassrand@spvcorp.com

#### West

Anna Gallegos  
559-467-9413  
agallegos@spvcorp.com

#### Canada / Central USA

Brian Colbert  
905-302-5824  
bcolbert@spvcorp.com

#### Northeast

Don Verrico  
610-517-9031  
dverrico@dicaperl.com

### Specialty Vermiculite Customer Service Contacts:

Cathy Baker  
Enoree Plant  
800-342-2017

Grace Cruz  
Phoenix Plant  
602-272-6663

Donna Ernst  
Pompano Plant  
800-432-7394

Linda Ardnt  
Edmonton Plant  
780-454-4511

Cindy Bushell  
Winnipeg Plant  
204-786-5681

### Specialty Vermiculite and SPV Canada Plant & Office Locations:

Enoree, SC  
26383 Hwy 221 N  
Enoree, SC 29335  
P: 864-969-3353  
F: 864-969-9923

Phoenix, AZ  
4220 West Glenrosa  
Phoenix, AZ 85019  
P: 602-272-6663  
F: 602-278-5504

Pompano Beach, FL  
1200 NW 15th Ave.  
Pompano Beach, FL 33069  
P: 800-432-7394  
F: 954-968-5586

Edmonton, AB  
14810 - 123rd Ave.  
Edmonton, AB T5L 2Y5  
P: 780-454-4511  
F: 403-452-1883

Manitoba, MB  
1140 Pacific Ave.  
Winnipeg, MB R3E 1G6  
P: 204-786-5681  
F: 204-783-030