



PERM-A-BARRIER® VPS

Self-adhering vapor permeable air barrier membrane

Description

Perm-A-Barrier® VPS (Vapor Permeable Sheet) is a vapor permeable air barrier membrane consisting of a breathable carrier film with a specially designed adhesive.

Perm-A-Barrier VPS provides superior protection against the damaging effects of air and water ingress on building structures. The product creates a solid barrier against air infiltration and exfiltration, which minimizes associated energy loss and condensation problems.

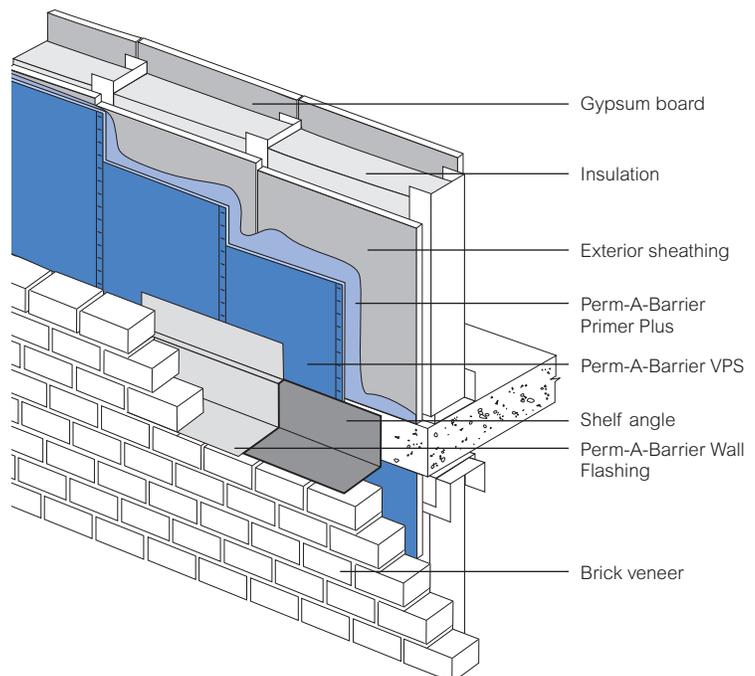
Perm-A-Barrier VPS is vapor permeable for wall assemblies requiring this “breathable” characteristic. As a vapor permeable membrane, Perm-A-Barrier VPS permits the diffusion of water vapor that may otherwise condense in the wall structure; but is impermeable to liquid water, which allows the material to act as a water drainage plain.

Product Advantages

- Air tight
- Vapor permeable
- Water resistant
- Self-adhered
- Controlled thickness
- Lightweight and flexible
- Strong adhesion to prepared construction substrates
- Compatible with Grace Perm-A-Barrier Flashing Systems

Advantages

- **Air tight** — protects against air passage and associated energy loss
- **Vapor permeable** — “breathable” membrane prevents moisture from being trapped in the wall cavity by allowing walls the ability to dry
- **Water resistant** — resists hydrostatic water pressure and wind driven rain
- **Self-adhered** — eliminates the need for mechanical fasteners
- **Controlled thickness** — factory made sheet ensures constant, non-variable site application



Typical Vapor Permeable Air Barrier Application

Drawings are for illustration purposes only. Please refer to graceconstruction.com for specific application details.

- **Lightweight** — allows for easy handling and installation
- **Flexible** — accommodates minor settlement and shrinkage movement; bridges crack and joints in substrate
- **Strong adhesion** to prepared construction substrates such as plywood, oriented strand board (OSB) block, concrete, masonry and exterior gypsum boards
- **Compatible** with Grace Perm-A-Barrier Flashing Systems

Principal Applications

Vapor permeable air barrier for new and remedial commercial and residential applications. Perm-A-Barrier VPS is installed onto exterior wall substrates and behind the exterior cladding.

System Components

- **Perm-A-Barrier VPS** — for use on above-grade walls at installation temperatures above 40°F (5°C)
- **Perm-A-Barrier Primer Plus** — water-based vapor permeable primer used to facilitate tenacious adhesion of Perm-A-Barrier VPS to the substrate
- **Perm-A-Barrier Wall Flashing** — heavy duty, fully-adhered membrane for through-wall flashing detailing
- **Perm-A-Barrier Detail Membrane** — flexible, fully-adhered membrane for detail flashing areas
- **Bituthene® Liquid Membrane** — two-component, elastomeric liquid applied detailing compound used for details and terminations
- **Bituthene Mastic** — rubberized asphalt-based mastic used for details and terminations
- **Sealants** — refer to Technical Letter 1 for details on compatible waterproofing sealants

Installation

Safety

Refer to product label and Material Safety Data Sheet before use. All users should acquaint themselves with this information prior to working with the material. Carefully read detailed precaution statements on the product labels and MSDS before use. MSDSs can be obtained from our web site at graceconstruction.com or by contacting Grace toll free at 866-333-3SBM (3726).

Surface Preparation

Surface must be smooth, clean, dry and free of voids, spalled areas, loose aggregate, loose nails, sharp protrusions or other matter that will hinder the adhesion or regularity of the wall membrane installation. Clean loose dust or dirt from the surface to which the wall membrane is to be applied by wiping with a clean, dry cloth or brush.

Temperature

Perm-A-Barrier VPS may be applied only in dry weather when air and surface temperatures are above 40°F (5°C).

Application

Apply Perm-A-Barrier Primer Plus by air spray, brush or roller application. Allow Perm-A-Barrier Primer Plus to dry until surface becomes tacky. Drying times may vary depending on temperature and humidity conditions. Refer to Perm-A-Barrier Primer Plus product data sheet for installation recommendations and Technical Letter 2, *Substrate Preparation for Application of Perm-A-Barrier Products to Glass-Mat Faced Gypsum Sheathing* for priming requirements on specific glass-mat faced sheathing products.

Membrane Application

Cut membrane into easily handled lengths. Apply membrane horizontally or vertically to primed substrates.

For conditions with existing masonry anchors (ties), apply Perm-A-Barrier VPS horizontally to primed wall, beginning at the base. Each length of the membrane must be installed so that the upper edge runs continuously along the underside of the line of masonry anchors (ties). Subsequent membrane applied above must overlap the sheet below by 2 in. (51 mm) immediately below the line of anchors (ties). The membrane may be cut to an appropriate

width such that it fits between the rows of anchors and allows for a min. 2 in. overlap onto the membrane below. It will be necessary to cut the membrane at the location of the anchors projecting from the wall to enable the sheet to be laid in place. End laps that occur in subsequent lengths that follow should maintain a minimum overlap of 2 in. (51 mm). See Figures 1 and 2.

The membrane must be pressed firmly into place with a hand roller or the back of a utility knife as soon as possible, ensuring continuous and intimate contact with the substrate to prevent water from migrating under the membrane.

In certain applications such as on soffits or ceilings, backnail the membrane along the side lap prior to installing the next sheet of membrane or install a termination bar that spans the soffit to ensure positive contact to the substrate.

Apply Bituthene Liquid Membrane, Bituthene Mastic or compatible sealant to seal around the anchors. Fit the Perm-A-Barrier VPS tightly around all penetrations through the membrane and seal using compatible sealant.

Continue the membrane into all openings in the wall area, such as windows, doors, etc., and terminate at points that will prevent interior visibility. The installation must be made continuous at all framed openings, such as windows, doors, etc. Flash framed openings with Perm-A-Barrier Detail Membrane and overlap onto Perm-A-Barrier VPS in a shingled manner. Coordinate installation of the Perm-A-Barrier VPS with the roofing trade to ensure continuity with the roofing system at this critical transition area.

At the end of each working day, if the wall has been only partially covered, apply a bead of Bituthene Liquid Membrane, Bituthene Mastic or compatible sealant along the top edge of the membrane at its termination to prevent vertical drainage of precipitation from penetrating the end and undermining the membrane adhesion. Tool the compatible sealant to ensure it is worked into the surface.

Inspect the membrane before covering and repair any punctures, damaged areas or inadequately lapped seams.

Membrane Repairs

Repairs must be made using Perm-A-Barrier VPS sized to extend 6 in. (150 mm) in all

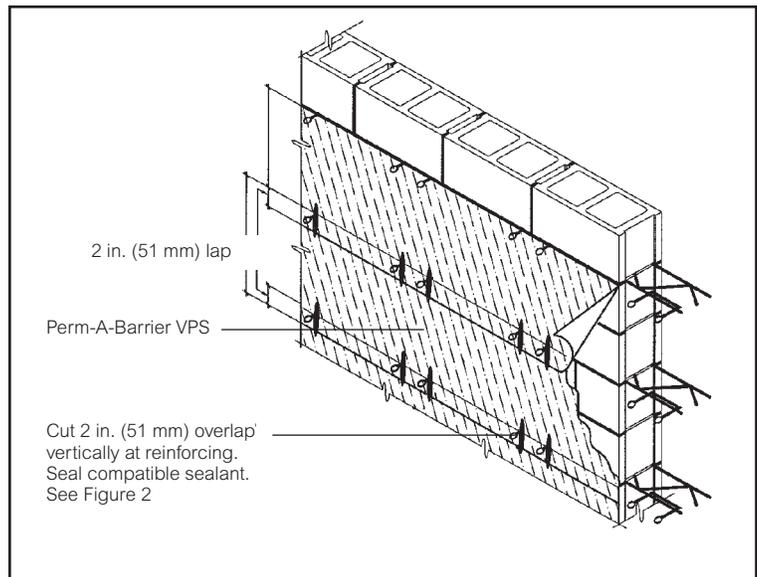


Figure 1: Membrane System Detail

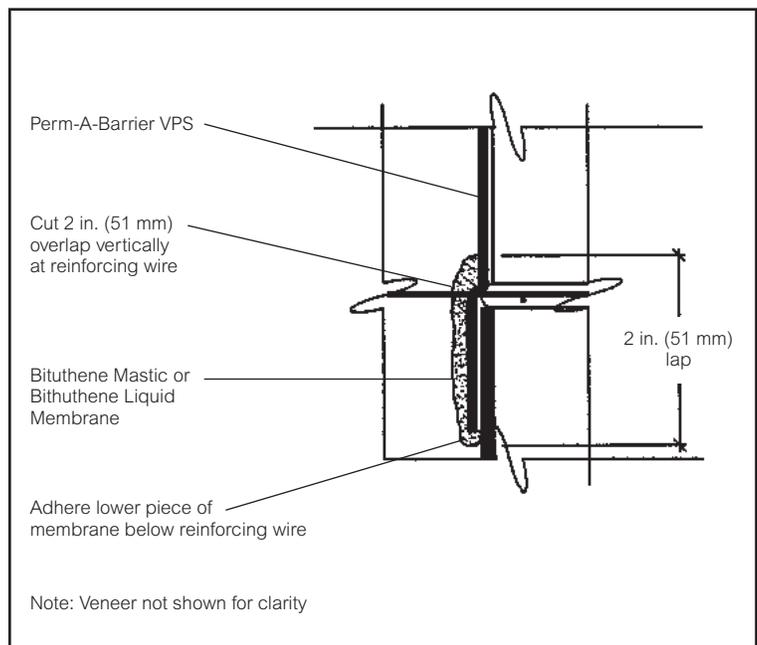


Figure 2: Horizontal Reinforcing

directions from the perimeter of the affected area. If repairs are required, carefully cut out affected areas and replace in similar procedure as outlined in the text above. The repair piece must be pressed into place with a hand roller as soon as possible to ensure continuous and intimate contact with the substrate. Apply a bead of compatible sealant along the top edge of the repair piece.

Membrane Protection

Perm-A-Barrier VPS must be protected from damage by other trades or construction materials.

Typical Performance Properties

Test	Method	Typical Value
Color		Green
Air permeance at test pressure of 1.57 psf (75 Pa)	ASTM E2178	< 0.002 L/sm ² (0.0004 cfm/ft ²)
Assembly air permeance at test pressure of 1.57 psf (75 Pa)	ASTM E2357	<0.004 L/s/m ² (0.0008 cfm/ft ²)
Water vapor permeance	ASTM E96	Minimum 15 perms, Method A, Dry Cup Minimum 15 perms, Method B, Wet Cup
Water resistance	AATCC-127 Hydrostatic Head Test 1, 2	> 5 hours
Peel strength @ minimum temperature	ASTM D903	> 5 pli to primed OSB, plywood and exterior gypsum board > 4 pli to Perm-A-Barrier VPS > 2.5 pli to primed CMU
Pull adhesion	ASTM D4541	> 15 psi to primed exterior gypsum board > 12 psi to primed CMU
Breaking force	ASTM D5034	55 lbs, Machine Direction 44 lbs, Cross Direction
Low temperature flexibility	ICC – AC38	Pass
Water penetration resistance around nails	ASTM D1970 Modified	Pass
Surface Burning Characteristics	ASTM E84	Flame Spread Index, 10 Class A Smoke Developed Index, 30 Class A
Fire Testing	NFPA 285	No increase in fire hazard, Pass

Storage and Handling Information

All materials must be protected from rain and physical damage. Pallets of Perm-A-Barrier VPS must not be double stacked on the job site. Provide cover on top and all sides, allowing for adequate ventilation. Store membrane where temperatures will not exceed 90°F (32°C) for extended periods. All products must be stored in a dry area away from high heat, flames or sparks. Store only as much material at point of use as is required for each day's work.

Limitations

Perm-A-Barrier VPS must not be applied in areas where they will be permanently exposed to UV light and must be covered within a reasonable amount of time, not to exceed 150 days.

www.graceconstruction.com

For technical assistance call toll free at 866-333-3SBM (3726)

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This product may be covered by patents or patents pending.
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Warranty

Perm-A-Barrier products are warranted to be free of defects in manufacture for a period of 5 years. Material will be provided at no charge to replace any defective product.

Technical Service

Support is provided by full-time technically trained Grace field sales representatives and technical service personnel, backed by a central research and development technical services staff.

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