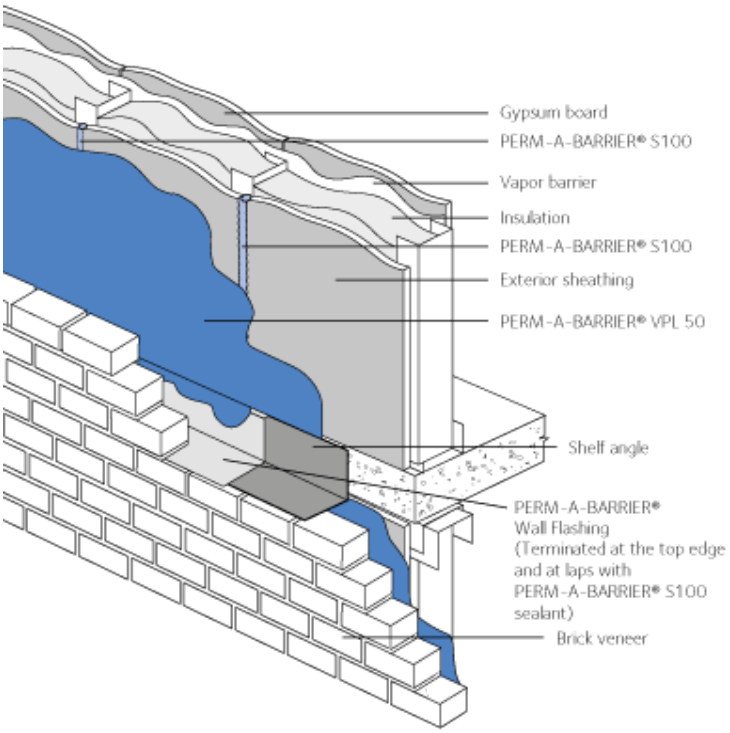
PERM-A-BARRIER® VPL 50 Membrane (US Version)

Contact an Air Barrier Specialist today

Product Description

GCP Applied Technologies ("GCP") PERM-A-BARRIER®VPL 50 Membrane is a fluid applied, one component, STPE vapor permeable air and water barrier. When applied to approved construction surfaces PERM-A-BARRIER®VPL 50 liquid is designed to cure and form a resilient, monolithic, fully bonded elastomeric sheet and to create a continuous barrier against air infiltration and exfiltration, reducing associated energy loss and condensation problems.

PERM-A-BARRIER®VPL 50 Membrane is specifically designed to provide superior protection against the damaging effects of air and liquid water ingress on the building envelope. Vapor permeability allows the wall to breathe and dry by preventing water vapor from being permanently trapped and condensing within the wall. While PERM-A-BARRIER®VPL 50 Membrane is vapor permeable, it is impermeable to liquid water, allowing the material to act as a water drainage plain within the wall.



Typical Vapor Permeable Air Barrier Membrane Application. Drawings are for illustration purposes only. Refer to gcpat.com for specific application details.

Product Advantages

- Fire resistant - meets NFPA 285 as part of various wall assemblies with foam plastic insulation
- Phthalate and Halogen-free-"green" and environmentally-friendly
- Air tight – designed to protect against air passage and associated energy losses. Meets new ASTM E2357 standard
- Vapor permeable-prevents moisture from being permanently trapped in the wall cavity by allowing walls ability to "breathe" and dry
- Single component - fast and easy application
- Fully bonded – helps transmit wind loads directly to the substrate
- Seamless - continuous membrane integrity with no laps
- Damp surface tolerant - can be applied to damp-to-touch surfaces that are free of liquid water
- Adheres to properly prepared clean common construction substrates such as wood, block, concrete, OSB, gypsum sheathing and metal substrates

System Components

MEMBRANE

PERM-A-BARRIER®VPL 50 Membrane – (vertical applications only)

Ancillary Products

- PERM-A-BARRIER® S100 Sealant - one part neutral curing, ultra low modulus silicone Sealant for detailing and joint treatments.
- PERM-A-BARRIER® Wall Flashing – heavy-duty fully adhered membrane for through-wall flashing detailing. All Wall Flashing must be applied prior to the application of PERM-A-BARRIER® VPL 50. The top and side edges of all laps, seams, repairs as well as cuts, punctures and other damage must be sealed with a PERM-A-BARRIER® S100 Sealant. See PERM-A-BARRIER® Wall Flashing Product Data Sheet at gcpat.com for details
- PERM-A-BARRIER® NPS Detail Membrane - primer-less flexible membrane for detail flashing areas. Must be applied prior to PERM-A-BARRIER® VPL 50 Membrane.
- PERM-A-BARRIER® Detail Membrane - flexible, fully adhered membrane for detail flashing areas. Must be applied prior to PERM-A-BARRIER® VPL 50 Membrane and terminated on the top edge with a bead of S100 Sealant.
- PERM-A-BARRIER® Aluminum Flashing - flexible, aluminum faced, fully adhered membrane for detail flashing areas must be applied prior to PERM-A-BARRIER® VPL 50 Membrane and terminated on the top edge with a bead of S100 Sealant.
- PERM-A-BARRIER® Liquid Flashing, an STPE based liquid flashing system, fully compatible with PERM-A-BARRIER® VPL 50. PERM-A-BARRIER® Liquid Flashing can be applied either prior or after application and curing of PERM-A-BARRIER® VPL 50.

Limitations of use

- Approved uses only include those uses specifically detailed in this Product Data Sheet and other current Product Data Sheets that can be found at gcpat.com. For any other anticipated use contact GCP Technical Services.
- PERM-A-BARRIER® VPL 50 Membrane is not for horizontal use
- PERM-A-BARRIER® VPL 50 Membrane must not be used in areas where it will be permanently exposed to sunlight, weather or traffic. Maximum UV exposure period is 180 days. For indirect or intermittent UV exposure applications, PERM-A-BARRIER® VPO should be used
- PERM-A-BARRIER® VPL 50 Membrane can be applied at temperatures of 25°F (-4°C) and rising . Do not apply while raining
- PERM-A-BARRIER® VPL 50 Membrane has a maximum in-service temperature of 160° F (71°C.)
- Finished and exposed surfaces should be protected from overspray.
- PERM-A-BARRIER® VPL 50 Membrane should not be used in waterproofing applications in hydrostatic condition.
- PERM-A-BARRIER VPL 50 Membrane is not compatible with petroleum solvents, fuels and oils, materials containing creosote, pentachlorophenol or linseed oil.

Safety and Handling Information

Users must read and understand the product label and Safety Data Sheet(SDS) for each system component 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 SDS before use. Safety Data Sheets for all GCP products can be obtained from our web site at gcpat.com or by contacting GCP toll free at 1-866-333-3SBM (3726)

Storage

PERM-A-BARRIER®VPL 50 Membrane should be stored under cover in original sealed containers above 40°F (4.5°C) and below 90°F (32°C). Do not allow the product to freeze. The shelf life is 9 months in unopened containers. Store opened containers with plastic protective liner covering the material.

Installation

Technical Support, Details and Technical Letters

The most up to date detail drawings and technical letters are available at gcpat.com. For complete application instructions, please refer to the current GCP Applied Technologies Contractor Handbook and Literature on (www.gcpat.com). Documents in hardcopy as well as information found on websites other than www.gcpat.com may be out of date or in error. Before using this product it is important that information be confirmed by accessing www.gcpat.com and reviewing the most recent product information, including without limitation Product Data Sheets and Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations. Please review all materials prior to installation of PERM-A-BARRIER®VPL 50 Detail Membrane. For technical assistance with detailing and problem solving please call toll-free at (866) 333-3SBM (3726).

Surface Preparation

All surfaces must be sound and free from spalled areas, loose aggregate, loose nails or screws, sharp protrusions or other matter that will hinder the adhesion or regularity of the membrane installation. The surface must also be free from frost, dirt, grease, oil or other contaminants. Clean loose dust and dirt from the surface by brushing or wiping with a clean, dry cloth. Apply primer/adhesive to gypsum board cut edges to reduce dust. Ensure solvent flashes off completely before applying PERM-A-BARRIER®VPL 50 Membrane.

Application

Membrane Application

PERM-A-BARRIER®VPL 50 Membrane may be applied at temperatures as low as 25°F (-4°C) and rising. PERM-A-BARRIER®VPL 50 Membrane should be installed using a hand or power roller. Multiple material passes may be necessary to ensure that the required thickness is achieved. Contact GCP for specific details on application equipment and application techniques.

Thickness Control

Thickness can be controlled by marking the area and spot-checking the thickness with a wet film thickness gauge. Swipe marks on the surface of the PERM-A-BARRIER®VPL 50 Membrane are acceptable provided the minimum thickness of 20mils is maintained.

Coverage Rates

PERM-A-BARRIER®VPL 50 Membrane is typically applied at a minimum thickness of 20mils wet. The theoretical coverage rate (not including waste) at a thickness of 20 mils is approximately 80 $ft.^2$/gal.

Coverage may vary depending on application technique and may be reduced over rough and uneven substrates. The applicator goal should be a continuous membrane at a thickness of 20mils. Adjust coverage rate accordingly.

Drying

PERM-A-BARRIER®VPL 50 Membrane is dry to touch and can be over coated within 4 hours at 50% R.H, 68°F. At 50% R.H, 68°F. The product fully cures in 24 hours. Drying and skinning times may vary depending on temperature, humidity and surface conditions.

Concrete and Other Monolithic Cementitious Surfaces

Surface irregularities greater than 1/4 in. (6 mm) across and/or 1/8 in. (3 mm) in depth should be pre-treated with S100 Sealant or repaired with a lean mortar mix or non-shrinking grout. Remove concrete form lines and any high spots greater than 1/8 in. (3 mm) in height to ensure uniform surface. On highly dusty or porous substrates it may be necessary to apply a scratch coat of PERM-A-BARRIER®VPL 50 Membrane prior to applying at full thickness. PERM-A-BARRIER®VPL 50 Membrane may be applied to green (minimum 3 day cure time) concrete or over damp-to-touch surfaces. Remove any visible water prior to application.

Concrete Masonry Units (CMU)

The CMU surface should be smooth and free from projections. Strike all mortar joints full and flush to the face of the concrete block. Fill all voids and holes, particularly at the mortar joints, with a lean mortar mix or no shrinking grout. Alternatively, a parge coat (typically one part cement to three parts sand) may be used over the entire surface.

Exterior Sheathing Panels

PERM-A-BARRIER®VPL 50 Membrane may be applied directly to exterior sheathing panels such as exterior drywall, plywood and oriented strand board (OSB) and glass faced wallboards. To avoid deflection at the panel joints, fasten corners and edges with appropriate screws. Fasteners should be driven flush with the panel surface (not counter sunk) and into the framing system in accordance with the manufacturer's recommendations. Completely fill the sheathing joint with PERM-A-BARRIER®S100 Sealant and then install a scratch coat (approx. 15-30 mils) of PERM-A-BARRIER®S100 Sealant with a margin trowel or similar onto the face of the sheathing approximately 1 in. (25 mm) on each side of the sheathing joint. Once the Sealant is tack free, the PERM-A-BARRIER®VPL 50 Membrane may be applied.

Detailing

Detailing should be completed prior to applying PERM-A-BARRIER®VPL 50 Membrane. The field application should completely cover the detail areas to provide a continuous membrane. For a complete description and instructions on individual details, see detail drawings at gcpat.com.

Transitions to beams, columns, windows and doorframes, etc. can be made with a strip of PERM-A-BARRIER®NPS, PERM-A-BARRIER®Detail Membrane, PERM-A-BARRIER®Aluminum Flashing or PERM-A-BARRIER®Wall Flashing. The top edges of all detail Membranes and flashings must be terminated with PERM-A- BARRIER®S100 Sealant. All self-adhered membranes, including tapes, must be applied prior to the application PERM-A-BARRIER®VPL 50 Membrane. Only PERM-A-BARRIER®Wall Flashing membrane can be used for through wall flashing applications or under masonry units.

A minimum 6 in. (150 mm) wide strip of PERM-A-BARRIER®NPS Detail Membrane, PERM-A-BARRIER® Aluminum Flashing or PERM-A-BARRIER®Wall Flashing product should be installed and centered over all outside corners ensuring that all horizontal laps shed water. Installation of the self-adhered flashing at corners should be installed prior to the PERM-A-BARRIER®VPL 50 application in accordance with the applicable data sheet and installation instructions. Avoid installing PERM-A-BARRIER®S100 Sealant under self-adhered flashing. Best practice would be to install corner flashing prior to detailing exterior sheathing joints with PERM-A-BARRIER®S100 Sealant. Any gaps around penetrations should be grouted solid or caulked with a polyurethane Sealant prior to the PERM-A-BARRIER®VPL 50 Membrane application. Refer to standard penetration details.

Application of Insulation and Finishes

PERM-A-BARRIER®VPL 50 Membrane is not suitable for permanent exposure. Insulation boards may be installed after the product has fully cured. If the insulation or exterior finish cannot be applied within 9 months of the product application, some form of temporary protection (such as tarpaulins) must be used to protect the product from the effects of sunlight. Installation of insulation boards can be accomplished by using compatible mechanical fasteners or solvent free insulation adhesive.

Cleaning

Tools and equipment are most effectively cleaned using mineral spirits and removing material as soon as possible to prevent curing on tools and equipment. For short shutdown periods, material can remain in power rolling lines and equipment. For long-term storage, thoroughly flush the entire system with mineral spirits. Good preventative maintenance will lengthen the life of the pumps.

Supply

	UNIT OF SALE	APPROXIMATE COVERAGE	WEIGHT	PALLETIZATION
PERM-A-BARRIER® VPL 50 Membrane	1 pail	80 SF / gallon (400 SF per 5 gallon pail)	51 lbs/pail	32 pails per pallet

Ancillary Products

Supply information for ancillary products can be found at gcpat.com

Physical Properties

	TYPICAL VALUE	TEST METHOD
Color	Light Green	
Solids content by volume	98.2%	
Maximum In-Service Temperature	160°F(71°C.)	
Maximum UV Exposure	Maximum 180 days	
The Volatile Organic Compound (VOC).	48 g/L.	

Drying time @ 50% R.H., 68°F[1]	Complete cure in 24 hours Skin over in 2 hours	
Water resistance of in-place membrane	Pass at >15 psf	ASTM E331
Air permeance	<0.02 L/s•m^2 @ 75 Pa (<0.004 cfm/ft^2 @ 1.57 psf)	ASTM E2178
Assembly air permeance	<0.2 L/s•m^2 @ 75 Pa (<0.04 cfm/ft^2 @ 1.57 psf)	ASTM E2357
Water vapor transmission	>16 perms @ 20 mils	ASTM E96 - Method B
Pull adhesion to glass-mat faced gypsum sheathing[2]	>30 psi, facer failure	ASTM D4541
Pull adhesion to concrete	>50 psi	ASTM D4541
Tensile strength	>150 psi	ASTM D412—Die C
Elongation	>500%	ASTM D412—Die C
Nail sealability	Pass	ASTM D1970
Low temperature flexibility	Pass	ASTM D1970
Wall assembly fire test	Pass as part of various wall assemblies with foam plastic insulation	NFPA 285
Crack Bridging	Pass	ASTM C1305 for 1/16 inch crack at -15°F (-26°C)

Footnote:

1. Drying and skinning times may vary depending on temperature, humidity and surface conditions.
2. Failure occurs when glass facing pulls away from gypsum core.

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

PERM-A-BARRIER is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140 USA.

In Canada, GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2020-01-21
gcpat.com/solutions/products/perm-a-barrier-vpl-50-air-barrier/perm-a-barrier-vpl-50-membrane