

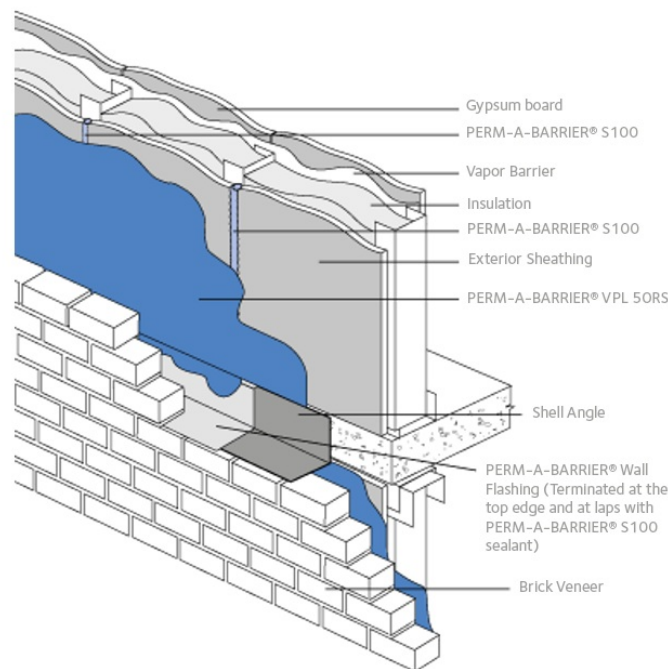
# PERM-A-BARRIER® VPL 50RS Membrane (US version)

## Product Description

GCP Applied Technologies ("GCP") PERM-A-BARRIER® VPL 50RS Membrane is a fluid applied, one component, STPE vapor permeable air and water barrier. When applied to approved construction surfaces, PERM-A-BARRIER® VPL 50RS 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 50RS 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, minimizing the risk of water vapor from being trapped and condensing within the wall. While PERM-A-BARRIER® VPL 50RS 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](http://gcpat.com) for specific application details.



## Product Advantages

- Fire resistant – meets NFPA 285 as part of various wall assemblies with foam plastic insulation
- Formulated without phthalates and halogens
- Air tight – designed to protect against air passage and associated energy losses. Meets ASTM E2357 standard
- Vapor permeable – minimizes moisture from being permanently trapped in the wall cavity by allowing the wall's ability to “breathe” and dry
- Single component – fast and easy application with simple roller or spray equipment
- 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, and gypsum sheathing

## System Components

### MEMBRANE

PERM-A-BARRIER® VPL 50RS 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 50RS. 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](http://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 50RS Membrane and terminated on the edges with a bead of PERM-A-BARRIER® Liquid Flashing
- PERM-A-BARRIER® Detail Membrane – flexible, fully adhered membrane for detail flashing areas. Must be applied prior to PERM-A-BARRIER® VPL 50RS Membrane and terminated on the edges with a bead of PERM-A-BARRIER® Liquid Flashing
- PERM-A-BARRIER® Aluminum Flashing – flexible, aluminum faced, fully adhered membrane for detail flashing areas must be applied prior to PERM-A-BARRIER® VPL 50RS Membrane and terminated on the edges with a bead of PERM-A-BARRIER® Liquid Flashing
- PERM-A-BARRIER® Liquid Flashing, an STPE based liquid flashing system, fully compatible with PERM-A-BARRIER® VPL 50RS. PERM-A-BARRIER® Liquid Flashing can be applied either prior or after application and curing of PERM-A-BARRIER® VPL 50RS.

## Limitations of use

- Approved uses only include those specifically detailed in this Product Data Sheet and other current Product Data Sheets that can be found at [gcpat.com](http://gcpat.com). For any other anticipated use contact GCP Technical Services
- PERM-A-BARRIER® VPL 50RS Membrane is NOT for horizontal use
- PERM-A-BARRIER® VPL 50RS 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 50RS Membrane can be applied at temperatures of 25 °F (-4 °C) and rising. Do not apply while raining
- PERM-A-BARRIER® VPL 50RS Membrane has a maximum in-service temperature of 160 ° F (71 °C)
- PERM-A-BARRIER® VPL 50RS Membrane should not be used in waterproofing applications in hydrostatic conditions
- If, or when, transitioning PERM-A-BARRIER® VPL 50RS Membrane to PERM-A-BARRIER® VPS or PERM-A-BARRIER® VPS 30 Membranes, please consult GCP Technical Service on proper transition. PERM-A-BARRIER® VPL 50RS Membrane is not compatible with petroleum solvents, fuels and oils, materials containing creosote, pentachlorophenol, or linseed oil.

## Safety and Handling Information

Read and understand the product label and Safety Data Sheet (SDS) for each system component. All users should acquaint themselves with this information prior to working with the products and follow the precautionary statements. SDSs can be obtained by contacting your local GCP representative or office, by calling GCP toll free at 1-866-333-3SBM (3726), and in some cases from our website at [gcpat.com](http://gcpat.com).

## Storage

PERM-A-BARRIER® VPL 50RS Membrane should be stored under cover in original sealed containers above 50 °F (10 °C) and below 90 °F (32 °C). The shelf life is nine (9) months in unopened containers. For temporary storage, store opened containers with plastic protective liner covering the material and lid tightly closed to prevent moisture exposure. PERM-A-BARRIER® VPL 50RS Membrane is moisture-curing and should not be mixed with water.

## Installation

### Technical Support, Details, and Technical Letters

The most up to date detail drawings and technical letters are available at [gcpat.com](http://gcpat.com). Documents in hardcopy as well as information found on websites other than [gcpat.com](http://gcpat.com), may be out of date or in error. Before using this product it is important that information be confirmed by accessing [gcpat.com](http://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 50RS 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.

## Application

### Membrane Application

PERM-A-BARRIER® VPL 50RS membrane can be installed by spray application as a single continuous, monolithic coat. Prevent from sags, run, or voids by regularly checking wet mil thickness throughout application to assure adequate coverage. The product may also be applied by roller or brush. If applying the membrane by roller or brush, multiple material passes may be necessary to ensure that the required wet thickness is achieved. Contact GCP for further details of local applicators, application techniques and spray equipment.

### Application Temperature

PERM-A-BARRIER® VPL 50RS Membrane may be applied at temperatures as low as 25°F (-4°C). During cold weather installation, liquid product must be stored above 50°F (10°C) for a minimum of 24 hours prior to application to improve spraying and overall product installation.

### 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 50RS Membrane are acceptable provided the minimum thickness of 20-mils is maintained.

### Coverage Rates

PERM-A-BARRIER® VPL 50RS Membrane is typically applied at a minimum thickness of 20 mils 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 20 mils. Adjust coverage rate accordingly.

### Drying

PERM-A-BARRIER® VPL 50RS Membrane is dry to touch and can be over coated within 4-hours 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 prepped 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 50RS Membrane prior to rolling or spraying to full thickness. 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 non-shrinking grout. Alternatively, a sparge coat (typically one part cement to three parts sand) may be used over the entire surface.

## Exterior Sheathing Panels

PERM-A-BARRIER® VPL 50RS Membrane may be applied directly to exterior sheathing panels such as exterior drywall, plywood, 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®100 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, ensuring the edges are tapered to prevent shadowing of the spray application. Once the Sealant is tack free, the PERM-A-BARRIER® VPL 50RS Membrane may be applied.

## Detailing

Detailing should be completed prior to applying PERM-A-BARRIER® VPL 50RS 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](http://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® Liquid Flashing. All self-adhered membranes, including tapes, must be applied prior to the application PERM-A-BARRIER® VPL 50RS 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 50RS 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 PERM-A-BARRIER® S100 Sealant prior to the PERM-A-BARRIER® VPL 50RS Membrane application. Refer to standard penetration details.

## Application of Insulation and Finishes

PERM-A-BARRIER® VPL 50RS 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 6 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.

## Cleaning

Tools and equipment are most effectively cleaned using mineral spirits and removing material as soon as possible to prevent moisture curing on tools and equipment. The product cures from reacting with moisture and should not be left in spray guns, hoses, or pumps for a prolonged period of time unless equipment allows for moisture lock hoses or fittings. For long-term storage, thoroughly flush the entire system with mineral spirits. Do not flush pump with water, and do not cross contaminate with water based materials. Good preventative maintenance will lengthen the life of the pumps.

## Supply

UNIT OF SALE	APPROXIMATE COVERAGE WEIGHT	PALLETIZATION
PERM-A-BARRIER® VPL 50RS 1 pail	80 SF / gallon (400 SF per pail - 5 gallon pail)	32 pails per pallet
PERM-A-BARRIER® VPL 50RS 1 drum	80 SF / gallon (4,000 SF per drum - 50 gallon drum)	4 drums per pallet

## Ancillary Products

Supply information for ancillary products can be found at [gcpat.com](http://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	45 g/L.	
Drying time @ 50% R.H., 68 °F <sup>1</sup>	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 <sup>2</sup> @ 75 Pa (<0.004 cfm/ft <sup>2</sup> @ 1.57 psf)	ASTM E2178
Air permeance	<0.02 L/s•m <sup>2</sup> @ 75 Pa (<0.004 cfm/ft <sup>2</sup> @ 1.57 psf)	ASTM E2357
Water vapor transmission	14 perms @ 20 mils	ASTM E96 - Method B
Pull adhesion to glass-mat faced gypsum sheathing <sup>2</sup>	>30 psi, facer failure	ASTM D4541
Elongation	>350%	ASTM D412—Die C
Nail sealability	Pass	ASTM D1970
Low temperature flexibility	Pass at -40 °F	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 1/8 inch crack at --20 °F (-28.9 °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

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