

PERM-A-BARRIER® VPL 50

Fluid applied vapor permeable air barrier membrane

Product Description

Perm-A-Barrier® VPL 50 is a fluid applied, one component, STPE membrane that cures to form a resilient, monolithic, fully bonded elastomeric sheet when applied to construction surfaces.

Perm-A-Barrier VPL 50 membrane provides superior protection against the damaging effects of air and liquid 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 VPL 50 membrane is vapor permeable for wall assemblies requiring this “breathable” characteristic. As a vapor permeable membrane, it permits the transfusion 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.

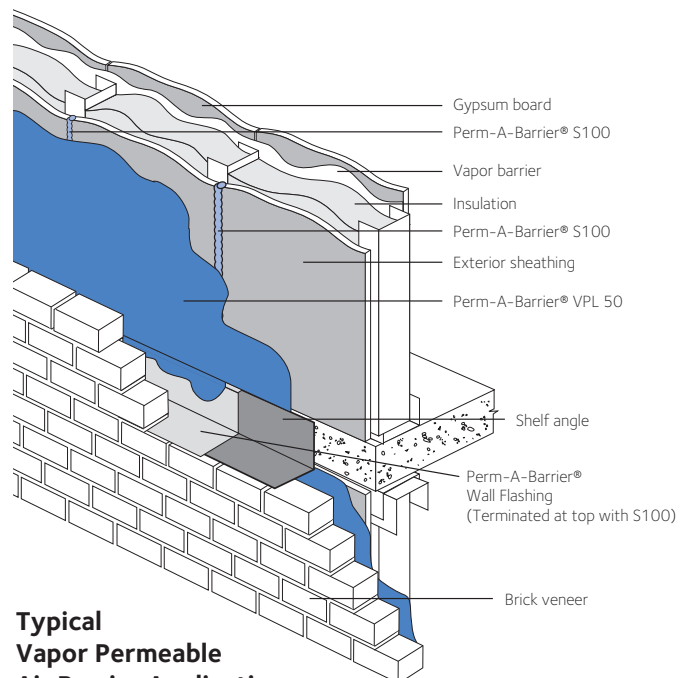
Perm-A-Barrier VPL 50 will not lose physical properties or wash off the wall when exposed to direct light rain. The Volatile Organic Compound (VOC) content of Perm-A-Barrier VPL 50 membrane is 48 g/L.

Advantages

- **Fire resistant** - meets **NFPA 285** as part of various wall assemblies with foam plastic insulation
- **Phthalate and Halogen-free** - safe and environmentally-friendly
- **Air tight** - protects against air passage and associated energy losses. Meets new ASTM E2357 standard
- **Vapor permeable** - prevents moisture from being trapped in the wall cavity by allowing walls the ability to dry
- **Single component** - fast and easy application
- **Fully bonded** - transmits wind loads directly to the substrate
- **Seamless** - continuous membrane integrity with no laps
- **Damp surface tolerant** - can be applied to damp-to-touch surfaces
- **Strong adhesion** to common construction substrates such as wood, block, concrete, OSB, gypsum sheathing and metal , among others
- **Compatible** over several GCP Perm-A-Barrier Flashing Systems

Product Advantages

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- Strong adhesion to common construction substrates



Typical Vapor Permeable Air Barrier Application

*Consult GCP for climate specific details

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

Principal Applications

Vapor permeable air barrier for new and remedial commercial and residential applications:

- Concrete block walls with brick veneer or pre-formed cladding panels.
- Steel or wood stud walls with exterior gypsum sheathing, brick veneer or pre-formed panels, plywood and OSB.

System Components

- **Perm-A-Barrier VPL 50 membrane** – for vertical applications.
- **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. Wall Flashing must be applied prior to the Perm-A-Barrier VPL 50 and terminated with a bead of S100 sealant.
- **Perm-A-Barrier NPS Detail Membrane** – primer-less flexible membrane for detail flashing areas. Must be applied prior to Perm-A-Barrier VPL 50.
- **Perm-A-Barrier Detail Membrane** – flexible, fully-adhered membrane for detail flashing areas. Must be applied prior to Perm-A-Barrier VPL 50 and terminated with a bead of S100.
- **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 and terminated with a bead of S100.
- **Perm-A-Barrier Liquid Flashing** – STPE based liquid flashing system, fully compatible with Perm-A-Barrier VPL 50.

Installation

Safety

Refer to product label and SDS (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 SDS before use.

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. It is best practice to apply primer/adhesive to gypsum board cut edges to reduce dust. Ensure solvent flashes off completely before applying Perm-A-Barrier VPL 50.

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 nonshrinking 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 nonshrinking 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 wall boards. 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 manufacturers' recommendations. Completely fill the sheathing joint with S100 Sealant and then install a scratch coat (approx. 15-30 mils) of S100 Sealant with a margin trowel or similar onto the face of the sheathing approximately 2 in. (50 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 the full coverage of 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, consult the separate detail sheets found on our web site at gcpat.com.

Transitions to beams, columns, windows and doorframes, etc. should 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 can also be used provided the edge is terminated with a bead of S100 sealant. Rubberized asphalt butyl and SIS Pressure sensitive adhesives cannot be applied to cured VPL 50. Liquid VPL 50 may be applied to the carrier sheet of these membranes. Tape products have to be applied before the STPE 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 S100 Sealant under self-adhered flashing. Best practice would be to install corner flashing prior to detailing exterior sheathing joints with 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.

Membrane Application

Perm-A-Barrier VPL 50 product can be installed 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 50 membrane may be applied at temperatures as low as 25°F (-4°C). It is not recommended for use when cold and/or damp conditions exist for prolonged periods. Avoid freezing.

Thickness Control

Application thickness is controlled in vertical applications 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 product are acceptable as long as the minimum thickness of 20 wet mils is maintained.

Coverage Rates

Perm-A-Barrier VPL 50 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 ft²/gal to reach a 20 mil dry thickness.

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 wet; adjust coverage rate accordingly.

Drying

Perm-A-Barrier VPL 50 membrane is dry to touch and can be overcoated within 4 hours under normal conditions (50% R.H, 68°F). The product cures through in 24 hours in normal conditions (50% R.H, 68°F). Drying and skinning times may vary depending on temperature, humidity and surface conditions.

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 6 months of the product application, some form of temporary protection (such as tarpaulins) should 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.

Storage and Handling

Perm-A-Barrier VPL 50 membrane should be stored under cover in original sealed containers above 25°F (-4°C) and below 80°F (27°C). The shelf life is 9 months in unopened containers.

Store opened containers with plastic protective liner covering the material.

Limitations

Perm-A-Barrier VPL 50 should not be used in areas where it will be permanently exposed to sunlight, weather or traffic. Maximum UV exposure period is 9 months. For indirect or intermittent UV exposure applications, refer to Perm-A-Barrier VPO.

Perm-A-Barrier can be applied at temperatures above 25°F (-4°C). Do not apply in moderate or severe rain.

Perm-A-Barrier VPL 50 has a maximum in-service temperature of 180° F (82°C).

Supply

| Product | Unit of Sale | Approximate Coverage | Weight | Palletization |
|---|--------------|--|---------------------|---|
| Perm-A-Barrier® VPL 50 Membrane | 1 pail | 80 ft ² per gallon(400 ft ²) per 5 gallon pail | 51 lbs/pail | 32 pails per pallet |
| Perm-A-Barrier Wall Flashing | | | | |
| - 12 in. (305 mm) | 3 rolls | 75 linear ft per roll | 25 lbs/roll | 25 cartons (75 rolls) per pallet |
| - 18 in. (457 mm) | 2 rolls | 75 linear ft per roll | 37.5 lbs/roll | 25 cartons (50 rolls) per pallet |
| - 24 in. (610 mm) | 1 roll | 75 linear ft per roll | 55 lbs/roll | 35 cartons (35 rolls) per pallet |
| - 36 in. (914 mm) | 1 roll | 75 linear ft per roll | 75 lbs/roll | 25 cartons (25 rolls) per pallet |
| Perm-A-Barrier Aluminum Flashing | | | | |
| - 6 in. (152 mm) | 12 rolls | 50 linear ft per roll | 6 lbs/roll | 30 cartons (360 rolls) per pallet |
| - 9 in. (225 mm) | 6 rolls | 50 linear ft per roll | 9 lbs/roll | 30 cartons (180 rolls) per pallet |
| - 12 in. (305 mm) | 6 rolls | 50 linear ft per roll | 12 lbs/roll | 30 cartons (180 rolls) per pallet |
| Perm-A-Barrier NPS Detail Membrane | | | | |
| - 6 in. (152 mm) | 12 rolls | 109 linear ft per roll | 7 lbs/roll | 30 cartons (360 rolls) per pallet |
| - 9 in. (225 mm) | 6 rolls | 109 linear ft per roll | 10 lbs/roll | 30 cartons (180 rolls) per pallet |
| - 12 in. (305 mm) | 6 rolls | 109 linear ft per roll | 13 lbs/roll | 30 cartons (180 rolls) per pallet |
| Perm-A-Barrier® S100 Sealant- 29 oz. Cartridge | 1 cartridge | approx. 30 linear ft x ¼ in. bead | 29 oz. cartridge | 10 cartridges/ carton 42 cartons/ pallet |
| Perm-A-Barrier Detail Membrane | | | | |
| - 6 in. (152 mm) | 6 rolls | 75 linear ft per roll | 11 lbs/roll | 25 cartons (150 rolls) per pallet |
| - 9 in. (225 mm) | 4 rolls | 75 linear ft per roll | 16 lbs/roll | 25 cartons (100 rolls) per pallet |
| - 12 in. (305 mm) | 3 rolls | 75 linear ft per roll | 22 lbs/roll | 25 cartons (75 rolls) per pallet |

Physical Properties

| Property | Typical Value | Test Method |
|--|---|---|
| Color | Light Green | |
| Solids content by volume | 98.2% | |
| 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 | >12 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 | >125 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 for 1/16 inch crack at -20°F (-29°C) |
| 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) |

Footnotes:

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.

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.

gcpat.com | Customer Service: 1-866-333-3726

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