

Grace Vapor Permeable Air Barrier

PERM-A-BARRIER® VPL LOW TEMP (LT)

Fluid applied vapor permeable air barrier membrane for low temperature applications

Description

Perm-A-Barrier® VPL Low Temp (LT) is a two-component, fluid-applied, acrylic membrane that cures to form a resilient, monolithic, fully bonded elastomeric sheet when applied to construction surfaces at temperatures between 20°F (-7°C) and rising to 60°F (16°C).

Perm-A-Barrier® VPL LT 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.

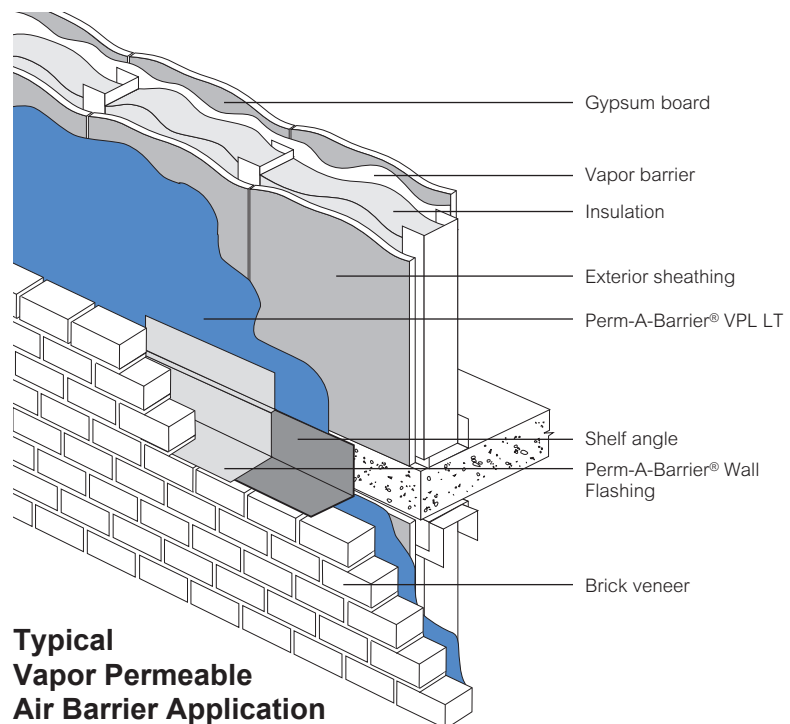
Perm-A-Barrier® VPL LT membrane is vapor permeable for wall assemblies requiring this “breathable” characteristic. As a vapor permeable membrane, this product permits the transfusion of water vapor that may otherwise condense in the wall structure; but is impermeable to liquid water, which allows the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

Advantages

- **Fire resistant**—meets **NFPA 285** as part of various wall assemblies with foam plastic insulation
- **Plasticizer, 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
- **Low Temperature**—can be applied at temperatures as low as 20°F (-7°C)
- **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

Product Advantages

- **NFPA 285** compliance
- Plasticizer, Phthalate and Halogen-free
- Air tight
- Vapor permeable
- Fully bonded
- Seamless
- Damp surface tolerant
- Strong adhesion to common construction substrates
- Compatible with Grace Perm-A-Barrier® Flashing Systems



Typical Vapor Permeable Air Barrier Application

*Consult Grace for climate specific details

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

- **Strong adhesion** to common construction substrates such as wood, block, concrete, OSB, gypsum sheathing and metal
- **Compatible** with Grace Perm-A-Barrier® Flashing Systems

Principal Applications

Vapor permeable air barrier for new and remedial commercial and residential applications where application temperatures are between 20°F (-7°C) and 60°F (16°C):

- 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 LT Part A**—Same material as Perm-A-Barrier VPL, acrylic-based air barrier material for vertical applications
- **Perm-A-Barrier® VPL LT Part B**—flammable, solvent component that is mixed with Perm-A-Barrier VPL LT Part A for low temperature applications
- **Grace® S100 Sealant**—one part neutral curing, ultra low modulus silicone sealant for detailing and joint treatments.
- **Bituthene® Liquid Membrane**—for details and terminations
- **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
- **Perm-A-Barrier® Aluminum Flashing**—flexible, aluminum-faced, fully-adhered membrane for detail flashing areas

Installation

Safety

Perm-A-Barrier® VPL LT membrane is a two-component product consisting of Perm-A-Barrier VPL LT Part A and Perm-A-Barrier VPL LT Part B, which is a flammable, solvent-based material. The Volatile Organic Compound (VOC) content of the mixed product as applied, is equal to 71.1 g/L.

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 grace-construction.com or by contacting us 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 condensation, frost, dirt, grease, oil or other contaminants. Clean loose dust and dirt from the surface by brushing or wiping with a clean, dry cloth.

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 Bituthene® Liquid Membrane 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 LT membrane prior to spraying to full thickness.

Perm-A-Barrier® VPL LT product 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 LT 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 Grace® S100 Sealant. Then install a scratch coat (approx. 15-30 mils) of the 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 LT membrane may be applied.

Detailing

Detailing should be completed prior to applying the full coverage of Perm-A-Barrier® VPL LT 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 graceconstruction.com.

Transitions to beams, columns, window and doorframes, etc. should be made with a strip of Perm-A-Barrier® Detail Membrane, Perm-A-Barrier® Aluminum Flashing or Perm-A-Barrier® Wall Flashing product. Only Perm-A-Barrier Wall Flashing membrane can be used for through wall flashing applications or under masonry units. Optimum adhesion will be achieved when the membrane or flashing is lapped onto the cured Perm-A-Barrier® VPL LT product. As soon as the product is cured (approximately 24 hrs after application at 50% R.H, 32°F), it is ready to accept self-adhered membranes or flashings.

A minimum 6 in. (150 mm) wide strip of Perm-A-Barrier® 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 may be installed prior to the Perm-A-Barrier VPL LT application in accordance with the applicable data sheet and installation instructions or after the Perm-A-Barrier VPL LT product has cured. Avoid installing Grace S100 Sealant under self-adhered flashing. Best practice would be to install corner flashing prior to detailing exterior sheathing joints with Grace® S100 Sealant.

Any gaps around penetrations should be grouted solid or caulked with Bituthene® Liquid Membrane or a polyurethane sealant prior to the Perm-A-Barrier® VPL LT application. Refer to Grace standard penetration detail for Perm-A-Barrier® VPL.

Membrane Application

Perm-A-Barrier® VPL LT Part A (4 gallon) and Perm-A-Barrier® VPL LT Part B (0.5 gallon) products must be mixed together prior to product application. It is recommended that the two components be mixed thoroughly for 5–10 minutes to ensure proper dispersion. It is recommended that mixing equipment be intrinsically safe.

Perm-A-Barrier VPL LT product can be installed through a spray application. It is recommended that pumping equipment be intrinsically safe. It may be applied by roller, however spray application is the preferred method. If applying the product by roller, multiple material passes may be necessary to ensure that the required wet thickness is achieved.

Refer to equipment manufacturer's instructions for handling flammable and combustible materials. Follow OSHA bonding and grounding procedures for flammable and combustible materials.

Contact Grace for further details of local applicators, application techniques and spray equipment.

Application Temperature

Perm-A-Barrier® VPL LT membrane has the ability to be sprayed or rolled at temperatures as low as 20°F

(-7°C) provided there is no frost or condensation on the substrate. The temperature must remain above 20°F (-7°C) until the product completely dries.

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 LT membrane are acceptable as long as the minimum thickness is maintained.

Drying

Perm-A-Barrier® VPL LT membrane is dry to touch and can be overcoated within 4 hours under normal conditions (50% R.H, 32°F). The product dries through in 24 hours at normal conditions (50% R.H, 32°F). Drying and skinning times may vary depending on temperature, humidity and surface conditions.

Coverage Rates

Perm-A-Barrier® VPL LT product is typically applied at a minimum thickness of 68 mils wet. The theoretical coverage rate (not including waste) at a thickness of 68 mils is approximately 23.6 ft²/gal to reach a 35 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 68 mils wet, adjust coverage rate accordingly.

Application of Insulation and Finishes

Perm-A-Barrier® VPL LT product is not suitable for permanent exposure. Insulation boards may be installed after it has fully cured. If the insulation or exterior finish cannot be applied within 6 months of the VPL LT 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 a damp cloth and removing material as soon as possible to prevent curing on tools and equipment. For short shutdown periods, material can remain in the lines and equipment. Material should not be left in the lines for any period of time if temperatures are expected to drop below 20°F (-7°C). For long-term storage, thoroughly flush the entire system with water and then purge with Procor® Flushing Oil. Good preventative maintenance will lengthen the life of the pumps.

Storage and Handling

Perm-A-Barrier® VPL LT Part A product should be stored under cover in original sealed containers above 40°F (4°C) and below 90°F (35°C). The shelf life is 9 months in unopened containers.

Perm-A-Barrier® VPL LT Part B product should be stored under cover in original sealed containers above

20°F (-7°C) and below 70°F (21°C). The shelf life is 9 months in unopened containers.

Perm-A-Barrier® VPL LT (mixed, final product) should be stored under cover in containers above 20°F (-7°C) and below 70°F (21°C). Once Perm-A-Barrier VPL LT Part A and Perm-A-Barrier VPL LT Part B have been mixed together, the shelf life is 4 weeks and the unused mixed product must be properly disposed of after this time period.

Store opened containers with plastic protective liner covering the material.

Limitations

Perm-A-Barrier® VPL LT membrane should not be used in areas where it will be permanently exposed to sunlight, weather or traffic. Maximum UV exposure period is 6 months. For indirect or intermittent UV exposure applications, refer to Perm-A-Barrier® VPO.

Do not apply Perm-A-Barrier® VPL LT membrane in wet weather. The product should not be applied if rain or snow is expected within 24 hrs.

Perm-A-Barrier® VPL LT Part A product should be kept from freezing as it is subject to freezing at temperatures below 32°F (0°C).

Finished and exposed surfaces should be protected from overspray.

Perm-A-Barrier® VPL LT product should be installed over Grace® S100 Sealant at exterior sheathing panel joints only.

Perm-A-Barrier® VPL LT membrane should not be used in waterproofing applications in hydrostatic condition.

Perm-A-Barrier® VPL LT product is not compatible with petroleum solvents, fuels and oils, materials containing creosote, pentachlorophenol or linseed oil. It has a maximum in-service temperature of 160°F (71.1°C). The shelf life is 9 months in unopened containers.

Physical Properties

Property	Typical Value	Test Method
Color	Green	
Solids content by volume	52.5% (approx.)	
Drying time @ 50% R.H., 32°F ¹	4 hours - tack free 24 hours - fully dry	
Water resistance of in-place membrane	Pass	ASTM E331
Air permeance	0.0003 L/s·m ² @ 75 Pa (<0.00006 cfm/ft ² @ 1.57 psf)	ASTM E2178
Assembly air permeance	Pass	ASTM E2357
Water vapor transmission	15 perms	ASTM E96 - Method B
Pull adhesion to glass-mat faced gypsum sheathing ²	30 psi	ASTM D4541
Pull adhesion to concrete	100 psi	ASTM D4541
Tensile strength	110 psi	ASTM D412—Die C
Elongation	250%	ASTM D412—Die C
Nail sealability	Pass	ASTM D1970
Low temperature flexibility	Pass at -20°F (-29°C)	ASTM D1970
Wall assembly fire test	Pass as part of various wall assemblies with foam plastic insulation	NFPA 285

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.

www.graceconstruction.com

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

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