

PERM-A-BARRIER® LIQUID

Spray applied air and vapor barrier

Description

Perm-A-Barrier® Liquid is a two component, synthetic rubber, cold-vulcanized, fluid applied membrane. It cures to form a resilient, monolithic, fully bonded elastomeric sheet.

Perm-A-Barrier Liquid will protect above grade wall assemblies against the damaging effects of air, vapor and water ingress. Perm-A-Barrier Liquid also provides an effective barrier against air infiltration and exfiltration and associated energy loss and condensation problems.

The Volatile Organic Compound (VOC) content of Perm-A-Barrier Liquid is less than 75 g/L.

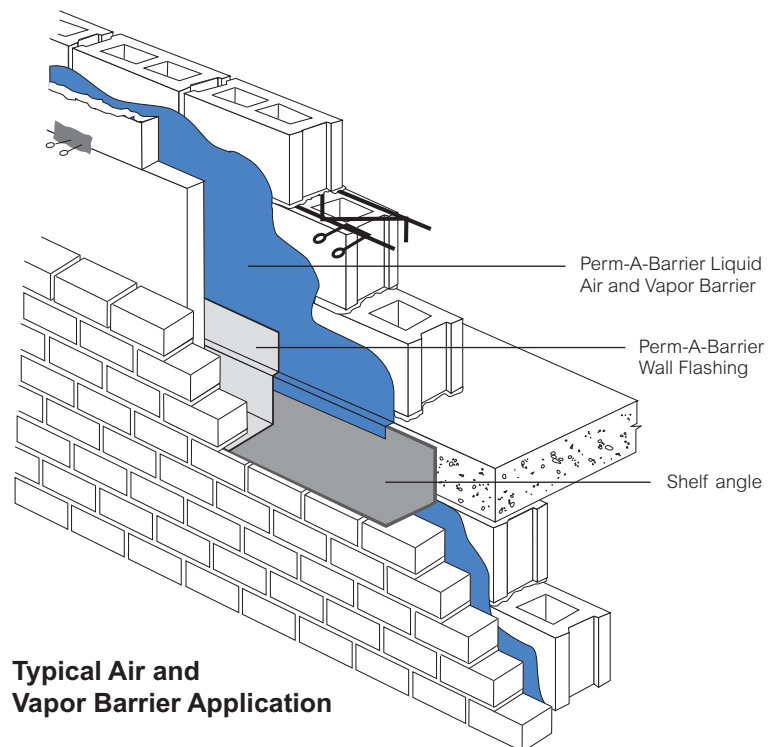
Architectural and Industrial Maintenance Regulations limit the VOC content in products classified as Architectural Coatings. Refer to Technical Letters at www.graceconstruction.com for most current list of allowable limits.

Product Advantages

- Air tight
- Fully bonded
- Elastomeric
- Asphalt free formulation
- Chemical cure
- Seamless
- Primerless
- Damp surface tolerant
- Cold applied
- Quick and easy application
- Wide application window
- Versatile
- Enhanced weatherability

Advantages

- **Air tight**—exceeds CCMC requirements for air barrier membranes and complies with Massachusetts State Energy Code and meets new ASTM E2357 standard
- **Fully bonded**—transmits wind loads directly to the substrate
- **Elastomeric**—accommodates minor structural movements and will bridge cracks
- **Asphalt free formulation**—does not become brittle with age and remains flexible to -23°F (-30°C)
- **Chemical cure**—no loss of volume; wet thickness is equal to dry thickness
- **Seamless**—continuous membrane integrity with no laps
- **Primerless**—applied directly to the substrate with minimal surface preparation
- **Damp surface tolerant**—can be applied to damp-to-touch surfaces
- **Solvent free**



Typical Air and Vapor Barrier Application

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

- **Cold applied**—eliminates fire hazards during application
- **Quick and easy application**—by airless spray
- **Wide application window**—can be sprayed down to 20°F (-7°C)
- **Versatile**—easy to use at details such as internal and external corners, brick ties, penetrations, etc.
- **Enhanced weatherability**—product can be exposed to UV up to a maximum of 60 days

Principal Applications

New and remedial air and vapor barriers for commercial and residential applications:

- Concrete block walls with brick veneer or pre-formed cladding panels
- Steel or wood stud walls with exterior gypsum board, brick veneer or pre-formed panels

Do not specify Perm-A-Barrier Liquid for interior applications.

System Components

- **Perm-A-Barrier Liquid**—for horizontal and vertical applications
- **Bituthene® Liquid Membrane**—for details and terminations
- **Perm-A-Barrier Wall Flashing**—heavy duty fully-adhered membrane for through-wall flashing details
- **Perm-A-Barrier Detail Membrane**—40 mil fully-adhered membrane for flashing around window jambs, door jambs and sills.

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 www.graceconstruction.com or by contacting us toll free at 866-333-3SBM (3726).

Application

Perm-A-Barrier Liquid is installed by airless spray application. Grace has a network of Specialist Spray Applicators who are trained and experienced in spray application. Contact Grace for further details of local applicators, application techniques and spray equipment.

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 should 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.

Concrete and other Monolithic Cementitious

Surfaces

Surface irregularities and voids greater than ½ in. (13 mm) in depth should be pre-treated with Bituthene Liquid Membrane or repaired with a lean mortar mix or non-shrinking grout. Remove high spots greater than ⅛ in. (3 mm) in height. On highly dusty or porous substrates it may be necessary to apply Procor® Concrete Sealer before applying the Perm-A-Barrier Liquid.

Perm-A-Barrier Liquid may be applied to green (minimum 3 day cure time) concrete or over damp-to-touch surfaces. Remove any visible water prior to application. In green concrete or damp substrate applications, direct sunlight may cause the surface temperature to rise rapidly, drawing moisture from the substrate and resulting in blisters and pinholes in the membrane. Under these conditions it may be necessary to apply Procor Concrete Sealer or a scratch coat of Perm-A-Barrier Liquid before applying the full thickness of the Perm-A-Barrier Liquid (refer to Technical Letter 2).

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 parge coat (typically one part cement to three parts sand) may be used over the entire surface.

Exterior Sheathing Panels

Perm-A-Barrier Liquid may be applied directly to exterior sheathing panels such as exterior drywall, plywood and oriented strand board (OSB) and glass faced wall boards such as DensGlass Gold®. To avoid deflection at the panel joints, fasten corners and edges with appropriate screws. Tape the board butt joints with either 2 in. (50 mm) wide reinforced or mesh-style wallboard tape (i.e. FibaTape® brand products). Gaps greater than ¼ in. (6 mm) should be filled with mastic or caulk, allowing sufficient time for the caulk to fully cure before application of the tape and Perm-A-Barrier Liquid.

Application Temperature

Spray Application—In spray applications using Perm-A-Barrier Liquid, it is possible to work at temperatures below 40°F (4°C) provided there is no frost or condensation on the substrate. The minimum temperature for spray application is -20°F (7°C). Contact your Grace Construction Products representative for details of cold weather spraying.

Detailing

Detailing should be completed prior to applying the full coverage of Perm-A-Barrier Liquid. The continuous field application should completely cover the detail areas to provide double thickness coverage. For a complete description and instruc-

tions on individual details, consult the separate detail sheets found on our web site at www.graceconstruction.com.

Transitions to beams, columns, window and door frames, etc. should be made with a strip of Perm-A-Barrier Detail Membrane or Perm-A-Barrier Wall Flashing. Optimum adhesion will be achieved when the tape is lapped onto the cured Perm-A-Barrier Liquid. As soon as the Perm-A-Barrier Liquid is tack-free, it is ready to accept the membrane. For further information, refer to Technical Letter 4, *Adhesion*.

Gaps around penetrations should be caulked with a compatible sealant. Consult Technical Letter 3, *Adhesion Compatibility* or contact your Grace Construction Products representative.

Thickness Control

Application thickness is controlled in both horizontal and 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 Liquid are acceptable as long as the minimum thickness is maintained.

Mixing and Spraying

CAUTION!

Always install the entire contents of the container as soon as possible. The reaction that occurs between Part A and Part B is exothermic (gives off heat) and mixed material left in the pail will reach temperatures higher than 212°F (100°C).

Do not cover the material after it is mixed.

Do not add water or any other material to thin the product.

Part A reacts with water, releasing heat. Do not allow Part A to come in contact with water.

For Perm-A-Barrier Liquid, use qualified spray equipment systems. Mixing occurs within the spray gun assembly. Premix Part A prior to pumping to bring any settled material back into solution.

Coverage Rates

Perm-A-Barrier Liquid is typically applied at a minimum thickness of 60 mils (1.5 mm). The theoretical coverage rate (not including waste) at a 60 mils (1.5 mm) thickness is about 25 ft²/gal (0.6 m²/L). Coverage rates will be reduced over rough and uneven substrates.

Application of Insulation and Finishes

Perm-A-Barrier Liquid is not suitable for permanent exposure and should be protected from the effects of sunlight as soon as possible after application. Insulation boards may be bonded to the Perm-A-Barrier Liquid by pressing them into place after the Perm-A-Barrier Liquid has set enough to hold their weight but is still tacky (generally between 30 minutes and 4 hours depending on temperature). Perm-A-Barrier Liquid has sufficient tack to hold the weight of the

boards but insulation clips are recommended for long term attachment. If the insulation cannot be applied within 60 days of the Perm-A-Barrier Liquid application, some form of temporary protection (such as dark plastic sheet or tarpaulins) should be used to protect the product from the effects of sunlight.

Cleaning

Tools and equipment are most effectively cleaned by allowing the material to cure and simply peeling it off the next day. Procor Flushing Oil is available to clean spray equipment.

Storage and Handling Information

Perm-A-Barrier Liquid (Part A and Part B) should be stored under cover in original sealed containers above 40°F (4°C) and below 100°F (38°C). Keep Part B from freezing during storage. The shelf life is 9 months in unopened containers.

Limitations

Perm-A-Barrier Liquid should not be used in areas where it will be permanently exposed to sunlight, weather or traffic.

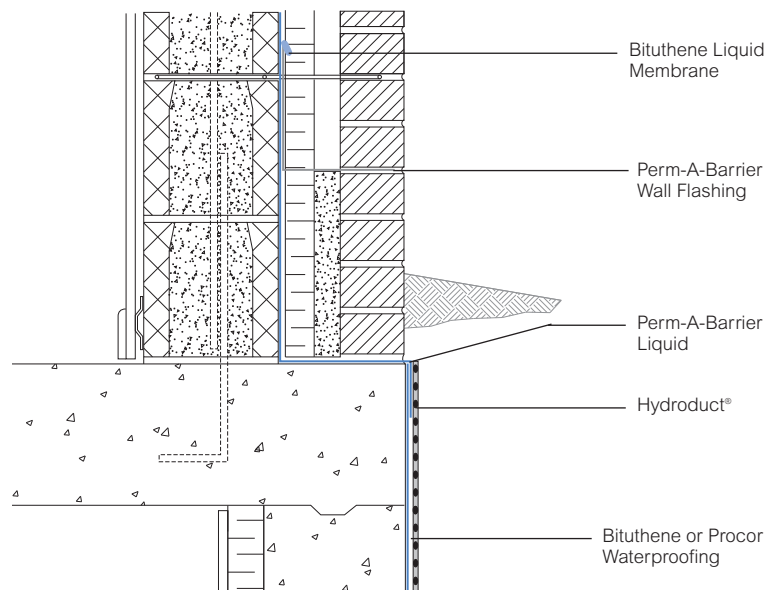
Maximum exposure period is 60 days.

Do not apply Perm-A-Barrier Liquid in wet weather. Once applied, the membranes will not be affected by light rain showers.

Perm-A-Barrier Liquid should not be used in negative-side waterproofing applications in hydrostatic condition.

Perm-A-Barrier Liquid is not compatible with petroleum solvents, fuels and oils, materials containing creosote, pentachlorophenol or linseed oil.

Do not use part mixes.



Perm-A-Barrier Liquid Foundation Wall Detail

Supply

Product	Unit of Sale	Approx. Coverage ¹ at 1.5 mm (60 mil)	Weight	Palletization
Perm-A-Barrier Liquid	75 gallon kit	1875 ft ² /kit	748 lbs/kit, net (573 lbs Part A & 175 lbs Part B)	1 or 2 kits/pallet, for orders of 1 or 2 kits only
Bituthene Liquid Membrane	1.5 gallon (Part A & Part B) 4 gallon (Part A & Part B)		18 lbs/kit (8 kg) 44 lbs/kit (20 kg)	100 kits/pallet 24 kits/pallet
Perm-A-Barrier Wall Flashing —12 in. (305 mm) —18 in. (457 mm) —24 in. (610 mm) —36 in. (914 mm)	3 rolls 2 rolls 1 roll 1 roll	75 linear ft per roll 75 linear ft per roll 75 linear ft per roll 75 linear ft per roll	25 lbs/roll 37.5 lbs/roll 55 lbs/roll 75 lbs/roll	25 cartons (75 rolls) per pallet 25 cartons (50 rolls) per pallet 35 cartons (35 rolls) per pallet 25 cartons (25 rolls) per pallet
Perm-A-Barrier Detail Membrane —6 in. (152 mm) —9 in. (225 mm) —12 in. (305 mm)	6 rolls 4 rolls 3 rolls	75 linear ft per roll 75 linear ft per roll 75 linear ft per roll	11 lbs/roll 16 lbs/roll 22 lbs/roll	25 cartons (150 rolls) per pallet 25 cartons (100 rolls) per pallet 25 cartons (75 rolls) per pallet

Footnote:

1. Nominal coverage based on 25 ft²/gal for smooth substrate. Coverage will vary with substrate condition.

Physical Properties

Property	Typical Value	Test Method
Air permeance at 1.57 psf (75 Pa) pressure difference	<0.0002 cfm/ft ² (<0.001 L/s/m ²)	ASTM E2178
Assembly air permeance at 1.57 psf (75 Pa) pressure difference ¹	<0.0008 cfm/ft ² (<0.004 L/s/m ²)	ASTM E2357
Water vapor permeance	0.08 Perms (4.6 ng/Pa.s.m ²)	ASTM E96—method B
Water vapor permeance after aging ²	0.033 Perms (1.9 ng/Pa.s.m ²)	CAN/CGSB-51.33-89
Pull adhesion to concrete block (CMU)	35 psi (0.24 N/mm ²)	ASTM D4541
Pull adhesion to glass faced wall board	18 psi (0.12 N/mm ²) (pulls board apart)	ASTM D4541
Peel adhesion to concrete	5 lbs/in. (880 N/m)	ASTM D903 modified ³
Elongation	500%	ASTM D413
Pliability, 180° bend over 1 in. (25 mm) mandrel at -23°F (-30°C)	Unaffected	ASTM D1970
Low temperature flexibility and crack bridging ½ in. (3.2 mm) crack cycling at -15°F (-26°C)	Pass	ASTM C836
Extensibility over ¼ in. (6.4 mm) crack after heat aging	Pass	ASTM C836
Color	Green	
Solids content	100%	ASTM D1644

Footnote:

1. Results below detectable limits of laboratory equipment.

2. Aged for 25 cycles of 3 hours at 122°F (50°C), 3 hours in water at 70°F (21°C), 18 hours at 14°F (-10°C)

3. Perm-A-Barrier Liquid is applied to concrete and allowed to cure. Peel adhesion of the membrane is measured at a rate of 2 in. (50 mm) per minute with a peel angle of 90°.

www.graceconstruction.com

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

Perm-A-Barrier, Bituthene and Hydroduct are registered trademarks of W. R. Grace & Co.—Conn.

Procor is a U.S. registered trademark of W. R. Grace & Co.—Conn., and is used in Canada under license from PROCOR LIMITED.

DensGlass Gold is a registered trademark of Georgia-Pacific Corporation. FibaTape is a registered trademark of Bayex Corporation.

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 the users' consideration, investigation and verification, but we do not warrant the results to be obtained. Please read all statements, recommendations or 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 which would infringe any patent or copyright. W. R. Grace & Co.—Conn., 62 Whittemore Avenue, Cambridge, MA 02140. In Canada, Grace Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

This product may be covered by patents or patents pending.
AVB-138F Printed in U.S.A. 6/07

Copyright 2007. W. R. Grace & Co.—Conn.
FA/LI/1M

GRACE