

GRACE

Construction Products

1. Product Name

Perm-A-Barrier[®] Liquid Air and Vapor Barrier

2. Manufacturer

Grace Construction Products
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3. Product Description

BASIC USE

Perm-A-Barrier[®] Liquid provides an effective barrier against air leakage and vapor diffusion in above-grade wall assemblies. The location of the membrane within the wall assembly shall be determined by the project engineer or designer.

COMPOSITION & MATERIALS

Perm-A-Barrier Liquid, an air and vapor barrier, is a 2-part, self-curing, rubber-based material. The volatile organic compound (VOC) content of Perm-A-Barrier Liquid is less than 75 g/L.

LIMITATIONS

Do not specify Perm-A-Barrier Liquid in areas where it will be permanently exposed to sunlight, weather or traffic. The maximum exposure time for this product is 60 days. Do not specify Perm-A-Barrier Liquid for exposed interior use conditions.

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

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

Do not use part mixes.

4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course



Spray applied Perm-A-Barrier[®] Liquid, an air and vapor barrier

- ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension
- ASTM D903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
- ASTM D1644 Standard Test Methods for Nonvolatile Content of Varnishes
- ASTM D1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- ASTM D3767 Standard Practice for Rubber-Measurement of Dimensions
- ASTM E96 Standard Test Method for Water Vapor Transmission of Materials
- ASTM E2178 Standard Test Method for Air Permeance of Building Materials

Canadian Construction Materials Centre (CCMC) 07273 - Technical Guide for Air Barrier Materials

PHYSICAL PROPERTIES

Perm-A-Barrier Liquid meets or exceeds the performance requirements of ASTM C836. See Table 1.

5. Installation

SAFETY, STORAGE & HANDLING

Perm-A-Barrier Liquid, Parts A and B, should be stored under cover in original sealed containers

between 40 - 100 degrees F (4 - 38 degrees C). Keep Part B from freezing during storage. In cool temperatures, store the material for several hours at room temperature to facilitate mixing and application. The shelf life is 9 months in unopened containers. Shelf life will be reduced if stored in temperatures above 90 degrees F (32 degrees C).

Refer to product label and Material Safety Data Sheet (MSDS) 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, or contact Grace Construction Products.

PREPARATORY WORK

All concrete and masonry surfaces must be free of frost, dirt, oil, grease and other contaminants.

Surface irregularities and voids greater than 1/4" (6 mm) in depth should be pretreated with Bituthene[®] Liquid Membrane or repaired with a lean mortar mix or nonshrinking grout.

Remove high spots greater than 1/8" (3.2 mm) in height. All substrates must be swept or blown off with low pressure air to remove dirt, dust and loose stones.

Poor quality surfaces with excessive laitance may require shotblasting or pressure washing to provide a dense smooth surface free from contaminants.

On highly dusty and porous substrates it may be necessary to apply Procor[®] Concrete Sealer before applying the Perm-A-Barrier Liquid. Contact Grace Construction Products if in doubt about the suitability of the substrate.

TEMPERATURE

It is possible to work at temperatures below 40 degrees F (4 degrees C) provided there is no frost or condensation on the substrate. The minimum temperature for application is 20 degrees F (-7 degrees C). Contact a Grace Construction Products representative for details of cold weather spraying.

APPLICATION TO "GREEN" CONCRETE OR DAMP SURFACES

Perm-A-Barrier Liquid may be applied to green (minimum 3 days) concrete or over surfaces that are damp-to-touch. Remove any visible water prior to application. On 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 liquid membrane.

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

MIXING

Parts A and B are pumped through separate hoses and mixed within the spray gun assembly. Premix Part A prior to pumping to bring any settled material back into solution. Contact a Grace representative for qualified plural-component spray equipment systems. The mixed product should have a uniform color, free of any white streaks.

The reaction that occurs between Parts A and B is exothermic (gives off heat). Mixed materials that accumulate in mass, such as in buckets or in a waste pile, will reach temperatures in excess of 212 degrees F (100 degrees C). After mixing, do not cover materials in a pail or other container for a period of 24 hours.

Part A reacts with water. Do not mix Part A with water. Do not thin the product with water or any other substance.

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 dou-

ble thickness coverage. For a complete description and instructions on Perm-A-Barrier Liquid details, consult the separate detail drawings located on the Grace website.

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 1 part cement to 3 parts sand) may be used over the entire surface. Exterior Sheathing Panels

Perm-A-Barrier Liquid may be applied directly to exterior sheathing panels, including exterior drywall, plywood and oriented strand board (OSB) and glass faced wallboards 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" (50 mm) wide reinforced or mesh style wallboard tape, such as FibaTape[®] brand products manufactured by Bayex Corporation.

Gaps greater than 1/4" (6.4 mm) should be filled with mastic or caulk, allowing sufficient time for the caulk to fully cure before application of Perm-A-Barrier Liquid.

Inside and Outside Corners

- Apply a 0.060" (1.5 mm) coating of Perm-A-Barrier Liquid starting in the corner and extending 6" (152 mm) from each side of the corner.

Non-Moving Joints and Hairline Cracks

- Apply a 0.060" (1.5 mm) coating of Perm-A-Barrier Liquid over non-moving joints or hairline cracks and extend the material 6" (152 mm) from each side of the opening

Penetrations

- Penetration openings must be sealed and stabilized prior to the application of Perm-A-Barrier Liquid (refer to Technical Letter 3)
- Once sealed and stabilized, install a 1" (25.4 mm) fillet of Bituthene Liquid Membrane around the protrusion. Extend the Perm-A-Barrier Liquid membrane 6" (152 mm) onto the structural substrate and at least 2" (50 mm) onto the penetration. For plastic pipes and other low adhesion substrates, a tie-in using Preprufe[®] Tape will be needed

APPLICATION

After detailing is complete, apply a uniform coating of Perm-A-Barrier Liquid at a minimum thickness of 0.060" (1.5 mm) over the entire area to be protected.

Coverage

Perm-A-Barrier Liquid is typically applied at a minimum thickness of 0.060" (1.5 mm). The coverage rate, not including waste, at a 0.060" (1.5 mm) thickness is about 25 ft²/gal (0.6 m²/L). The coverage will be lower on rough surfaces.

6. Availability & Cost

AVAILABILITY

Perm-A-Barrier Liquid is available through a national network of distributors, ensuring prompt delivery to project sites.

TABLE 1 PHYSICAL PROPERTIES OF PERM-A-BARRIER^a LIQUID

Property & test method	Typical value
ASTM C836	Meets or exceeds all requirements
Color, mixed	Green
Dry film thickness, ASTM D3767 (Method A)	0.060" (1.5 mm) nominal
Solids content, ASTM D1644	100%
Flexibility, 180° bend over 1" (25.4 mm) mandrel at -20°F (-29°C), ASTM D1970	Pass
Elongation, ASTM D412	500%
Peel adhesion to concrete, ASTM D903 (Modified) ¹	5 lb/in (880 N/m)
Water vapor permeance, ASTM E96 (Method B)	4.6 ng/(Pa × s × m ²) (0.08 perms)
Air leakage at 75 Pa differential pressure, ASTM E2178, CCMC 07273 on CMU Block	0.0006 L/s × m ² (0.00012 cfm/ft ²)

¹ Perm-A-Barrier Liquid is applied to concrete and allowed to cure. Peel adhesion of the membrane is measured at a rate of 2" (50 mm) per minute with a peel angle of 90° at room temperature.



COST

Perm-A-Barrier Liquid is competitively priced. For specific pricing information, contact a local distributor or call Grace Construction Products for the nearest distributor.

7. Warranty

A 5 year material warranty is available upon request.

8. Maintenance

Perm-A-Barrier Liquid membranes will not require maintenance when installed in accordance with Grace's recommendations.

9. Technical Services

Support is provided by full-time, technically trained Grace field sales representatives and technical service personnel, backed by a central research and development staff.

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

10. Filing Systems

Additional product information is available from the manufacturer.



W. R. Grace & Co.-Conn. hopes the information here will be helpful. It is based upon 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 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 which would infringe any patent or copyright. W. R. Grace & Co.-Conn., 62 Whittemore Avenue, Cambridge, MA 02140. In Canada, W.R. Grace & Co. Canada, Ltd., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

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