CertainTeed

MemBrain™

The SMART Vapor Retarder

The unique vapor retarder that breathes to allow moisture to escape and lowers the risk of moisture-related problems in building envelopes.

Reduce your risk and liability due to moisture condensation in your walls.

Introducing MemBrain™ - The Smart Vapor Retarder from CertainTeed.

Improving on the best, only from CertainTeed.

Already known as a leading producer of dependable, quality insulation, CertainTeed is now introducing its newest scientific innovation. MemBrain™, The Smart Vapor Retarder, is a polyamide film that changes its permeability with ambient humidity conditions. The product's permeance is 1 perm or less when tested in accordance with ASTM E 96, dry cup method, and increases to greater than 10 perms using the wet cup method. This process allows closed building envelope systems to increase their drying potential with seasonal climatic changes.

Reduce the risk of legal action due to excess moisture in your building.

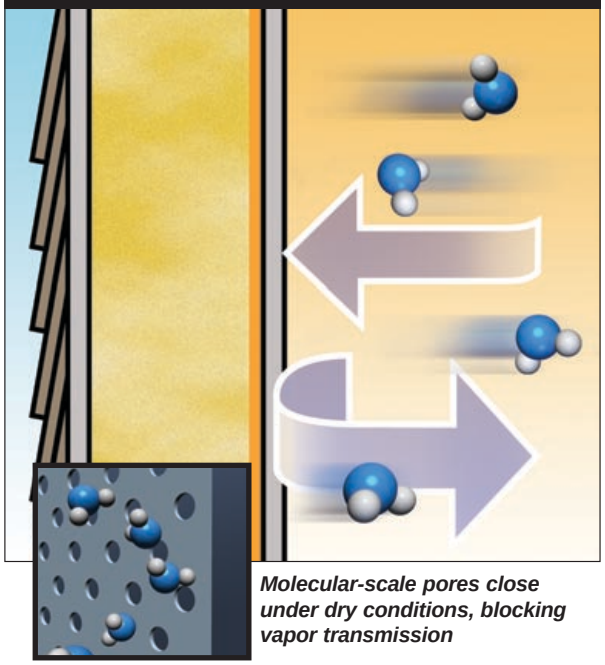
Insulated buildings need protection against moisture diffusion into the construction in order to keep water vapor from areas where it can condense. Vapor retarders have been used for decades to protect the wooden parts in the roof or wall from moisture damage by minimizing the diffusion of moisture in areas where it can create problems. MemBrain, a unique new concept only from CertainTeed, will revolutionize your thinking about vapor retarders and set your mind at ease about legal claims against your construction due to trapped moisture in your homes.

CertainTeed's MemBrain Smart Vapor Retarder increases its permeability when the relative humidity increases, allowing moisture to pass through the system.

When moisture does penetrate the construction, it can condense on cold surfaces and accumulate in the wall cavity. When enough moisture has accumulated, moisture damage can result in mold growth and rot can take place.

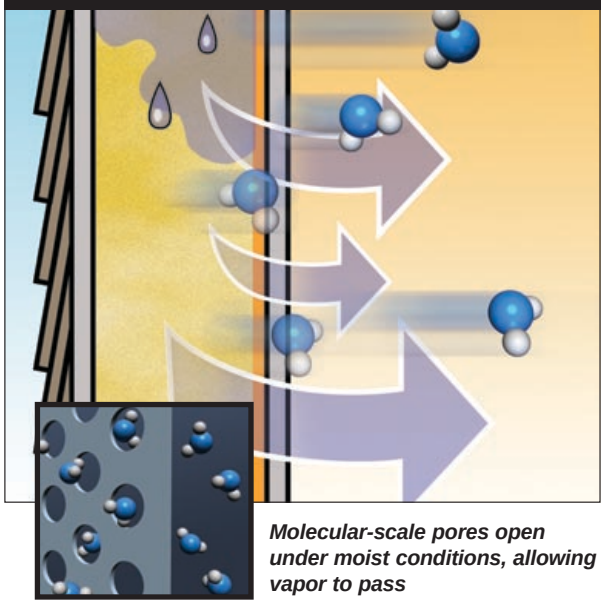
Water vapor can move from outside in or inside out as it tries to move from areas of high vapor pressure to areas of lower vapor pressure.

During the heating season when average relative humidities in insulated cavities are typically low, MemBrain works as a vapor retarder.



Molecular-scale pores close under dry conditions, blocking vapor transmission

During the cooling season when average relative humidities in insulated cavities are typically high, MemBrain changes its permeance to increase the systems drying potential.



Molecular-scale pores open under moist conditions, allowing vapor to pass

CertainTeed

MEMBRAIN™
The SMART Vapor Retarder

Proven reliable, now available to you.

CertainTeed's unique, patented water vapor retarding system already has a proven track record overseas. MemBrain was first introduced in Europe more than seven years ago and has been widely accepted as the leading choice in vapor retarders in challenging applications.

Long-term peace of mind for the price.

MemBrain will cost you more than polyethylene sheeting. Even though MemBrain costs you a little more now, it will pay for itself many times over in greater customer satisfaction and long-term peace of mind for you due to reduced risk and liability as a result of moisture condensation.

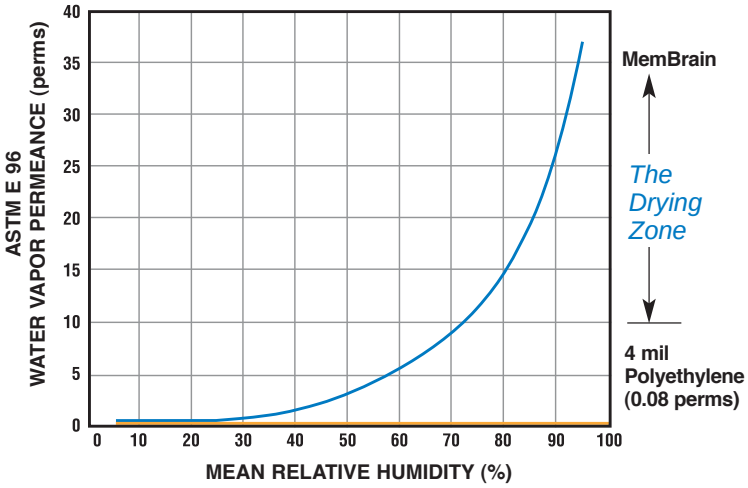
A delicate balance: better than polyethylene.

A traditional vapor retarder such as polyethylene not only retards moisture penetration, but also retards the drying potential when the season changes. This can lead to moisture accumulation that may not be able to dry out, especially if the building envelope exterior has materials of low permeance. The amount of moisture that can get into a construction assembly should always be less than the amount of moisture that can leave it.

Polyethylene is currently used as a vapor retarder in certain areas. While it has been preferred for its ability to resist vapor movement into wall construction, it also has the drawback of reducing the potential for summertime drying. In the summer, exterior areas warmed by the sun can often be warmer and more humid than the interior, thereby creating a reverse vapor drive into the interior. Due to MemBrain's ability to vary its structure under higher relative humidity conditions, the vapor retarder becomes more permeable, allowing moisture to pass through. This transformation permits drying to occur through the process of vapor diffusion.

With current concerns about mold and moisture, MemBrain can be used in place of traditional vapor retarders with unfaced or loose-fill fiber glass insulation. The result is an insulation system that provides a strong vapor retarder during periods of low humidity, yet allows the construction to breathe during periods of high humidity. MemBrain has not been tested for use with wetspray insulation systems and is not recommended at this time.

MemBrain permeance increases with humidity



Breathable walls: MemBrain changes its physical structure.

MemBrain looks similar to polyethylene, but is actually a nylon-based material. It has unusually high tensile strength where a 2-mil sheet has equivalent strength to a 6-mil sheet of polyethylene. In addition, MemBrain is not adversely affected by organic pollutants and gases. The most unique quality of MemBrain is its ability to change its water vapor permeance. MemBrain allows water vapor to pass through when humidity is high either from seasonal change or moisture intrusion. When humidity is low, MemBrain blocks the passage of moisture so that it will not condense on cold surfaces within the construction cavity.

CertainTeed Since 1904
Celebrating a Century of Building America

CertainTeed

A Saint-Gobain Company
P.O. Box 860
Valley Forge, PA 19482
1-800-233-8990
www.certainteed.com
Fax-on-demand: 1-800-947-0057

CertainTeed was the first fiber glass insulation manufacturer to have all its manufacturing plants, R&D center and corporate headquarters registered to ISO 9001-2000 standards.

SAINT-GOBAIN
INSULATION

CertainTeed

Specification Sheet

MemBrain™, The SMART Vapor Retarder

1. PRODUCT NAME

CertainTeed MemBrain™ Smart Vapor Retarder. Patent number US 6,808,772 B2. Other patents pending.

2. MANUFACTURER

CertainTeed Corporation
P.O. Box 860
Valley Forge, PA 19482-0105
Phone: 610-341-7000
800-233-8990
Fax: 610-341-7571
Fax-On-Demand: 800-947-0057
Website: www.certainteed.com

3. PRODUCT DESCRIPTION

Basic Use: CertainTeed MemBrain Smart Vapor Retarder is a vapor retarder sheeting intended for use with unfaced, vapor permeable mass insulation (fiber glass and mineral wool) in wall and ceiling cavities.

Benefits: MemBrain Smart Vapor Retarder is a polyamide film that changes its permeability with the ambient humidity condition. The product's permeance is 1 perm or less when tested in accordance with ASTM E 96, dry cup method, and increases to greater than 10 perms using the wet cup method. This process allows closed building envelope systems to increase their drying potential with seasonal climatic changes. With a high resistance to water vapor in winter, MemBrain reacts to relative humidity by altering pore size, allowing water vapor to pass through it. When conditions change and relative humidity increases above 60%, the pores in the material expand and its permeability increases. This transformation permits drying to occur, in either direction, through the process of vapor diffusion. Thus, its lowered resistance value supports the drying process, therefore decreasing moisture accumulation within the construction and potential moisture damage.

This product can be used in place of traditional vapor retarders with unfaced fiber glass insulation to provide an insulation system that is ideal in some of the more severe climate condition areas in terms of both temperature and humidity.

Composition and Materials: MemBrain Smart Vapor Retarder is formed by blowing a 2-mil thick film of polyamide (Nylon).

Limitations: MemBrain Smart Vapor Retarder is recommended for use in heating and mixed climates. The product is not suited for cooling climates with high

TABLE 1

PRODUCT SIZES							
Product Size (nom. ft.)	Nominal Web Width (in.)	Actual Web Width (in.)	Coverage (square ft.)	Box Length (in.)	Roll Wgt. (lbs.) with box and core	Rolls per Pallet*	Weight per Pallet (lbs.)
8	96	100	800	28.3	11.1	45	545
9	108	112	900	31.5	12.5	45	608
10	120	124	1000	34.5	13.7	40	593
12	144	148	1200	41.0	17.0	30	555
PRODUCT SIZES – METRIC							
Product Size (nom. m)	Nominal Web Width (mm)	Actual Web Width (mm)	Coverage (square m)	Box Length (mm)	Roll Wgt. (kg) with box and core	Rolls per Pallet*	Weight per Pallet (kg)
2.44	2438	2540	74.3	718	5.0	45	247
2.74	2743	2845	83.6	800	5.7	45	276
3.05	3048	3150	92.9	876	6.2	40	269
3.66	3658	3759	111.5	1041	7.71	30	252

*48" (1219 mm) maximum pallet height.

outdoor humidities. MemBrain is not suitable in buildings with exceptionally high, constant indoor humidity levels, such as swimming pools and spas. This product should also not be used with specialty-conditioned spaces with relative humidities intentionally greater than 50%. Use of MemBrain is not recommended where residential humidification systems are set at relative humidities greater than 50%. MemBrain's performance in rooms with short peaks of high humidity, such as bathrooms and kitchens, will not be affected because of the buffering action of interior finishes.

Do not use low permeance interior finishes such as vinyl wallpaper or vapor retarding paints with MemBrain. The drying benefits of MemBrain will diminish with the use of low permeance finishes. MemBrain has not been tested for use with wet spray insulation systems and is not recommended at this time. MemBrain should not be used as a vapor barrier between concrete sub floors and flooring materials, or as a ground cover in basements and crawl spaces. This product is not recommended for applications having direct or indirect (reflected) ultraviolet light exposure due to solar or electrical sources. Special care should be taken when working with an open flame. Check local practice and/or building codes for use of vapor retarders. To avoid danger of suffocation, keep this and all plastic film away from babies and small children.

Sizes: This product is manufactured in nominal widths to cover interior walls that are 8, 9, 10 and 12 feet high. The material is folded and rolled to create rolls containing 100 linear feet of product. Available standard sizes are listed in Table 1.

4. TECHNICAL DATA

Applicable Standards:

- Model Building Codes:
  - BOCA, ICBO, SBCCI and ICC
- Material Standards:
  - ASTM C 665 Section 7.4, Water-Vapor Permeance
  - ASTM E 96

Fire Resistance:

- Fire Hazard Classification:
  - ASTM E 84 Surface burning characteristics Max. Flame Spread Index: 20 Max. Smoke Developed Index: 55

Physical/Chemical Properties:

- Water Vapor Permeance:
  - ≤ 1.0 perm (57ng/Pa•s•m^2) (ASTM E 96, Desiccant method)
  - > 10 perms (1,144ng/Pa•s•m^2) (ASTM E 96, Water method)
- Fungi Resistance:
  - No growth (ASTM C 1338)
- Corrosivity:
  - No unusual aspect of corrosion such as pitting, cracking and adhesive cure inhibition (ASTM C 665)

Quality Assurance: CertainTeed was the first fiber glass insulation manufacturer to have its manufacturing plants, R&D center and corporate headquarters registered to ISO 9001-2000 standards.

5. INSTALLATION

For most areas, vapor retarders should be installed on the warm-in-winter side of the insulation (toward the interior). For some warm and humid areas, the vapor retarder should be installed facing the exterior. MemBrain is not intended to be used as an exterior vapor retarder. Check local practice and/or building codes.

Installation in wood framing: Same as polyethylene sheeting.

Please see MemBrain Smart Vapor Retarder Installation Instructions For Wood Framing (30-28-083) and MemBrain Smart Vapor Retarder Installation Instructions For Steel Framing (30-28-089).

6. AVAILABILITY AND COST

Manufactured and sold throughout the United States. For availability and cost, contact your local contractor, retailer or distributor, or call CertainTeed Sales Support Group in Valley Forge, PA at 800-233-8990.

7. WARRANTY

This product is covered by a limited one-year warranty against manufacturer's defects.

8. MAINTENANCE

Not required.

9. TECHNICAL SERVICES

Technical assistance can be obtained from either the local CertainTeed sales representative, or by calling CertainTeed Sales Support Group in Valley Forge, PA at 800-233-8990.

10. FILING SYSTEMS

Additional product information is available upon request.

HEALTH & SAFETY PARTNERSHIP PROGRAM NAIMA North American Insulation Manufacturers Association

PRODUCTS MANUFACTURED UNDER AN ISO 9001:2000 QUALITY SYSTEM ISO 9001:2000 CSQB 961005

CertainTeed Since 1904 100

A Saint-Gobain Company

SAINT-GOBAIN INSULATION

BUILDINGGREEN 2003 TOP-10 GREENSPEC® PRODUCT

ENERGY STAR PARTNER

MEMBRAIN™
The SMART Vapor Retarder

MemBrain™ Smart Vapor Retarder Sheeting Installation Instructions For Wood Framing

MemBrain™ Smart Vapor Retarder (SVR) is to be used as a vapor retarder over unfaced fiber glass insulation in regions where vapor retarders are required. Please consult local and regional building code requirements to determine which geographical regions require vapor retarders.

MemBrain™ SVR sheeting should be installed in all insulated walls and ceilings, including cathedral ceilings. In most areas of the country, MemBrain should be installed on the 'warm in winter' side of the wall cavity. MemBrain is not intended to be used as an exterior vapor retarder.

Instructions for installation on exterior walls with unfaced fiber glass insulation.

1. Start at a corner of the room where an uninsulated interior wall or door jamb meets an insulated outside wall. Lay the MemBrain SVR roll on the floor, with the end touching the bottom of the uninsulated wall or jamb.

2. Unroll the MemBrain SVR along the insulated wall, until the next corner is reached. Cut the film perpendicular to the insulated wall so that overall length is about 8"-12" longer than the wall.

3. With the 3" offset edge parallel with the top of the insulated wall, place one corner of the cut sheet at the top left or right corner of the wall. The factory cut edge should be covering the top edge of the top sill plate. The cut edge of the sheet should wrap around inside corner at least 4". Ensure that the folded material is facing the room (the print across top header will be facing out). Anchor this corner with staples.

4. Working towards the opposite corner, pull the sheet tight, and staple the offset edge to the top sill plate. Staples should be at least 12"-24" apart.

5. After stapling to the opposite corner, allow the folded sheet to unfold to the floor. (See Figure 1.)

6. Pull the sheet downward and staple to the bottom sill plate. Then staple at 12"-24" intervals along each stud. Effort should be made to minimize wrinkles along the stud surfaces to make drywall installation easier.

7. With a razor knife, trim around outside edge of windows and doors (sill plate, trimmers and headers) so that the SVR material covers the entire framing. Staple to the framing at 6"-12" intervals around the perimeter of the window or door. To trim around outlet boxes, cut to inside edge and stretch around outside of box to form a seal.

8. Repair any cuts or tears more than 4" long using 2" wide cellophane tape (Scotch 610 or equivalent).

9. Should you have to use more than one piece of MemBrain SVR per wall, make sure the pieces overlap by at least 3".

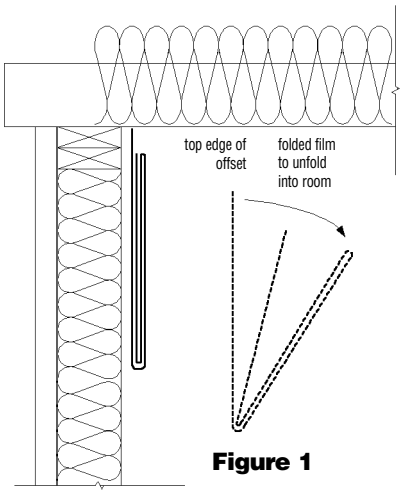


Figure 1

Instructions for installation on ceilings.

1. Measure the pieces to be installed as per above.

2. Install as above, standing on one side and carefully staple across the room.

3. When installing the next piece, make sure the pieces overlap by at least 3".

Reverse in Spanish

CertainTeed
A Saint-Gobain Company
P.O. Box 860 • Valley Forge, PA 19482
www.certainteed.com

30-28-083