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Pressure-Treated Wood with Barrier Membranes FAQs

What are barrier membranes and how do they help provide corrosion resistance?

Barrier membranes have typically provided moisture protection for decks and other applications. When applied correctly, they act as a barrier between pressure-treated wood and metal connectors. In addition to eliminating direct contact, barrier membranes also reduce the electrochemical reaction (which requires moisture) from occurring between the two surfaces. The electrochemical reaction is what causes corrosion to occur. It is important to note, however, that the barrier membrane does not provide protection for fasteners installed through the membrane into the wood.

Can I use any additional type of barrier membrane and get the same corrosion resistance performance?

The barrier membrane tested in Simpson's study (see [T-PTBARRIER](#)) was Grace Vycor® Deck Protector™. No other barrier membrane testing has yet been performed by Simpson Strong-Tie. Other barrier membranes may be evaluated.

What are the advantages of using a barrier membrane?

Because of the increased corrosion rates caused by many of the alternative pressure-treated wood chemicals, additional corrosion protection for connectors and fasteners is required. One way to ensure additional corrosion protection is to increase the amount of zinc coating on connectors and fasteners. Simpson Strong-Tie's ZMAX®(G185) or Hot-Dip Galvanized (HDG) products have increased levels of zinc and are the minimum recommendation for use with many of the new pressure treatments.

Testing indicates that ACQ-D (Carbonate) and CA-B treated woods used in conjunction with Grace Vycor Deck Protector barrier membrane are less corrosive than CCA-C treated wood. Because the barrier lowers the connector corrosion levels, the advantage of using a barrier membrane is that in some cases it allows you to use a connector with less zinc – such as Simpson's standard G90 galvanized connectors. It is important to note that Hot-Dip Galvanized nails are still required as a minimum, even when using G90 connectors in conjunction with Grace Vycor Deck Protector. See Simpson's technical bulletin, [T-PTBARRIER](#) for details.

What types of applications are suitable for using barrier membranes with pressure-treated wood?

For interior dry applications, Simpson's standard G90 galvanized connectors can be used in conjunction with Grace Vycor Deck Protector as an alternative to ZMAX (G185) galvanized connectors. Examples of interior dry applications include wall sill plate and wall ledgers installed in wall and ceiling cavities of enclosed buildings. See [T-PTBARRIER](#) for specific recommendations.

Is the use of barrier membranes a major change to Simpson's original product recommendations with pressure-treated wood?

No, barrier membranes are an alternative option for providing additional corrosion resistance in certain applications (there is no requirement to use a barrier). Simpson Strong-Tie still recommends the use of stainless steel fasteners, anchors and connectors with treated wood as the most effective solution to corrosion risk. Simpson's ZMAX (G185) connectors and Hot-Dip Galvanized fasteners (per ASTM standards) are also recommended as the minimum for corrosion resistance with several

types of pressure-treated wood. See [T-PTBARRIER](#) and [T-PTWOOD](#).

How did this new product alternative come about?

Grace Construction Products, a worldwide manufacturer of barrier membrane technologies, presented Simpson Strong-Tie with its corrosion testing research, which evaluated the performance of applying a barrier membrane between a connector and pressure-treated wood. The testing was based on the company's self-adhering barrier membrane product, Grace Vycor® Deck Protector™. (For additional product information, visit www.na.graceconstruction.com/deckprotector/.)

As a part of Simpson's continuing effort to provide additional cost effective solutions, Simpson conducted its own independent testing to substantiate Grace's findings (see "[What type of research and testing was conducted to determine the effectiveness of barrier membranes with pressure-treated wood?](#)" below). The research indicates that Grace Vycor Deck Protector can be an option in providing additional corrosion resistance when applied between pressure-treated wood and metal connectors.

How should barrier membranes be used with pressure-treated wood?

Barrier membranes should be applied with the adhesive side on the wood. When using a barrier membrane, always use Hot-Dip Galvanized fasteners. See Simpson's technical bulletin, [T-PTBARRIER](#) for more application information.

How important is it to use Hot-Dip Galvanized fasteners with Grace Vycor Deck Protector?

It is extremely important that Hot-Dip Galvanized fasteners (per ASTM A153 standards) be used in conjunction with Grace Vycor Deck Protector. Whether using the barrier membrane with Simpson's standard G90 galvanized connectors, ZMAX (G185) connectors, or Hot-Dip Galvanized connectors, you must always use Hot-Dip Galvanized fasteners.

Can Grace Vycor Deck Protector be used with stainless steel connectors and fasteners?

Stainless steel connectors and fasteners should not be used with Grace Vycor Deck Protector.

What type of research and testing was conducted to determine the effectiveness of barrier membranes with pressure-treated wood?

Barrier membrane corrosion testing was conducted by Grace Construction Products in conformance with ASTM G59 "Standard Test Method for Conducting Potentiodynamic Polarization Resistance Measurements." Simpson also conducted barrier membrane corrosion testing in general conformance with the American Wood Preservers' Association Standard E-12-94 "Standard Method of Determining Corrosion of Metal in Contact with Treated Wood" to substantiate Grace Construction's testing.

All test samples used steel coupons with a Hot-Dip Galvanized coating conforming to ASTM A653 class G90 (0.90 oz/ft² of zinc total both sides.) The tested pressure-treated woods included Chromated Copper Arsenate Type C (CCA-C), Alkaline Copper Quat Type D Carbonate (ACQ-D Carb) and Copper Azole Type B (CA-B). The ACQ-D and CA-B treatments used an ammonia carrier.

Do barrier membranes extend the service life of connectors when used with treated wood?

Due to the many variables involved in actual field applications, Simpson cannot provide estimates on service life of connectors, anchors or fasteners. Simpson suggests that all users perform periodic inspections of connectors and fasteners to ensure their strength is not being adversely affected by corrosion. In some cases, it may be necessary to have a local building professional perform such inspections.

What type of connectors and fasteners does Simpson Strong-Tie recommend for use with pressure-treated wood?

See [T-PTWOOD](#).

Where can I find the most recent information about pressure-treated wood?

For the most recent information about corrosion and pressure-treated wood, visit Simpson Strong-Tie's Product Use information, www.strongtie.com/info.

Printed January 21, 2007 from <http://www.strongtie.com/productuse/BarriersFAQs.html>
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