

DuPont™ Tyvek® DrainWrap™ vs. GreenGuard® RainDrop™

TECH TALK

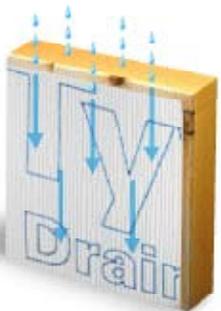
DuPont™ Tyvek® DrainWrap™ is an innovative weather resistive barrier that combines the unique properties of DuPont™ Tyvek® combined with an additional drainage system into a single product.



In areas with substantial exposure to wind-driven rain, Tyvek® DrainWrap™ can enhance drainage behind claddings including:

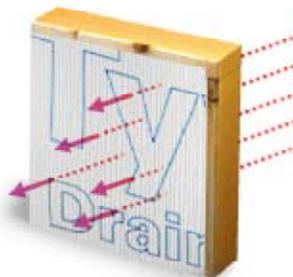
- primed wood, all six sides
- fiber cement siding
- foam board applied over flat substrates

The unique, nonwoven fiber structure helps resist air infiltration and water intrusion to help prevent drafts and keep energy bills low.



DuPont™ Tyvek® DrainWrap™ is engineered with vertical grooves to promote outstanding bulk water drainage in wall systems by helping channel moisture safely to the outside.

The breathable structure allows moisture vapor to pass through to promote drying in wall systems helping prevent the formation of mold and mildew.



This unique product features vertical grooves on the surface to provide superior bulk water drainage and water holdout in wall systems by channeling the water safely to the outside. This drainage system can help enhance the performance of a wall system by limiting the potential for the wetting of components, which is especially important during heavy inclement weather conditions or in areas with substantial exposure to wind-driven rain.

Defining the Difference

DuPont™ Tyvek® DrainWrap™ is a unique, nonwoven, non-perforated sheet made by spinning extremely fine, continuous high-density polyethylene (HDPE) fibers that are then fused together to form a strong uniform web. It resists air infiltration and water intrusion, yet is engineered to readily allow moisture vapor to diffuse through the sheet promoting drier wall systems and helping prevent mold and mildew.

GreenGuard® RainDrop™ is a coarse, woven polypropylene slit film that has a sequence of larger filaments intended to promote drainage. Because this open woven structure is inherently poor at resisting air and water penetration, a thin fragile film layer is coated over the weave. This layer can be easily compromised during manufacturing and with routine handling, resulting in small holes that reduce the ability to resist air and water penetration.

A quality weather resistive membrane must have high water holdout, high air resistance, moderate to high vapor permeability and excellent durability. GreenGuard® RainDrop™ simply doesn't measure up to these requirements. On the other hand, Tyvek® DrainWrap™ provides the best balance of these properties, combined with the added attribute of surface drainage.



The miracles of science™

Figure 1: Relative Drainage Rates

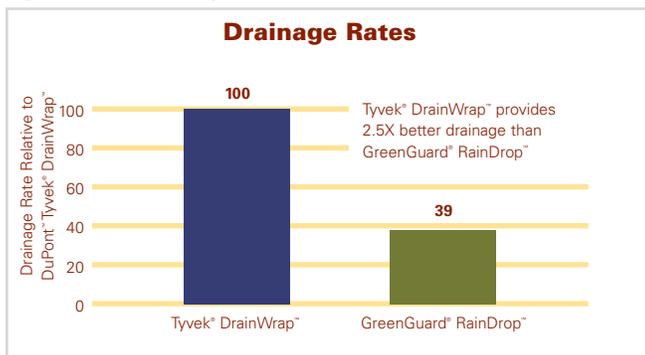
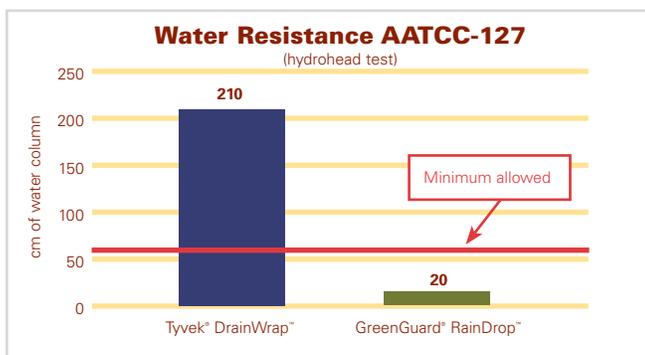


Figure 2: Water Holdout*



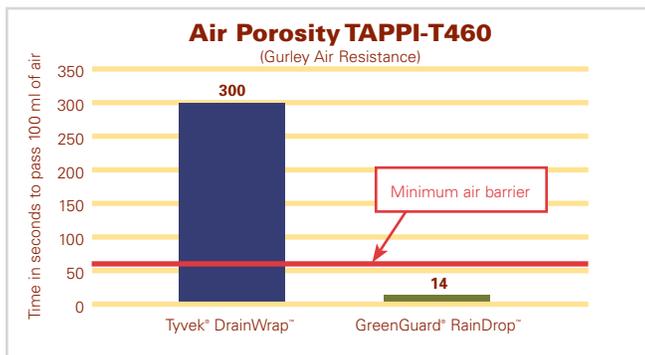
*The minimum value established by code for this test method is 55 cm.

Figure 3: Moisture Vapor Permeability*



*The minimum value established by code for this test method is 5 perms. The minimum desired value is based on studies showing that at levels below 20 perms the natural drying rate of components starts to be impacted negatively.

Figure 4: Air Porosity*



*The minimum air barrier is the approximate minimum Gurley value required to meet criteria established in ASTM 1677.

* All testing was conducted by an independent laboratory with commercially available rolls of DuPont Tyvek DrainWrap and GreenGuard RainDrop.

DuPont Tyvek DrainWrap Outperforms the Competition

In a series of tests conducted by an independent laboratory using standardized methods and commercially available rolls of the product, Tyvek DrainWrap consistently outperformed GreenGuard RainDrop.

Relative Drainage Rates

As shown in Figure 1, Tyvek DrainWrap provides 2.5X better drainage than GreenGuard RainDrop. Tyvek DrainWrap maintains a constant drainage rate—even after repeated wetting and drying cycles.

Water Holdout

As shown in Figure 2, Tyvek DrainWrap provides more than 13X greater water holdout compared to GreenGuard RainDrop. This superior water holdout helps protect the wall cavity from water that gets behind the cladding.

Moisture Vapor Permeability

In Figure 3, the Moisture Vapor Transmission Rate (MVTR) of Tyvek DrainWrap is almost 6X that of GreenGuard RainDrop. This increased moisture vapor permeability promotes drier wall systems, thereby decreasing the potential for rot and harmful mold and mildew growth.

Air Porosity

Good air resistance improves the comfort level of a home and ultimately translates to energy savings. As shown in Figure 4, Tyvek DrainWrap has more than 100X the air resistance of GreenGuard RainDrop. In addition, Tyvek DrainWrap is approved as a Type 1 air barrier.

Choose Tyvek DrainWrap

It is easy to see that Tyvek DrainWrap outperforms GreenGuard RainDrop in every critical measure of a secondary weather barrier. Choosing Tyvek DrainWrap is an important way you can help enhance the performance of a wall system. For more than 25 years, the DuPont Tyvek Weatherization Systems products have made millions of homes more energy efficient and comfortable because of the extra level of protection that DuPont Tyvek offers. The introduction of Tyvek DrainWrap expands the utility of the best comprehensive weather resistive barrier on the market.

Our Specialist Network

A national group of over 160 highly-trained field representatives is available to assist you with your installations. From the latest updates on building codes, to on-site consulting and training, your local DuPont Tyvek Specialist will help make sure the job gets done right.



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