

Technical Memorandum

One of the most common questions about WrapShield SA Self-Adhered WRB/Air Barrier and RevealShield SA Self-Adhered is “does it require primer?” The simple and short answer is NO—NEVER. Why? VaproShield has spent years developing an innovative, proprietary, and vapor-permeable adhesive technology. VaproShield manufactures this exclusive formula and applies it to our high-performance WRB and AB self-adhered sheet membranes.

Advancements in Adhesive Technology

Over the past decade there has been a tremendous evolution in adhesive technology. Pressure-sensitive adhesives (PSA) are being used in countless industries, often completely replacing mechanical fasteners. The automotive industry, for example, now relies on advanced adhesive technologies to attach components that previously required welds or rivets. The construction industry has seen advancements in adhesive technology too. However, some manufacturers still rely on primers to achieve short term adhesion testing requirements. More on these primers later in this bulletin.

Long term (or permanent) adhesion of a WRB/AB material to the wide variety of substrates utilized in today’s buildings cannot be adequately evaluated or accurately measured by a simple laboratory pull test. VaproShield WRB/AB self-adhered materials are often applied to exterior gypsum sheathing, poured-in-place concrete columns, steel framing, and wood framing—all on the same building! In addition, VaproShield self-adhered materials are applied to many rigid insulation products. Over the last decade, millions of square feet have been installed with excellent success and long-term performance.

Longevity is Required

WRB/ABs must perform in dynamic environments that last 50-100 years; therefore, evaluation requires a more sophisticated analysis than a simple pull test. Test results without the dwell or time between the initial application and testing are meaningless. Temperature is

another variable that drastically changes the behavior of an adhesive. In the case of PSA’s, the pressure applied during installation is an important variable as well. **To state that a material does not meet a standard without divulging all pertinent data and facts regarding the test parameters is irresponsible and misleading.**

The viscoelastic behavior of most adhesives varies with temperature, time, and substrate porosity. Initial tack, shear resistance, temperature range, bonding and debonding behavior all must be evaluated when designing an adhesive. In addition, the effect on vapor permeability must be carefully considered, as well as the ease of application for the installing tradesmen.

VaproShield’s proprietary, pressure-sensitive adhesive technology was designed to allow limited repositioning of the material prior to applying pressure, in order to aid installers in applying the material, often in tough jobsite conditions. The ability to reposition material during installation improves the quality and speed of the installation process. While PSA technology is not new, recent advancements in polymer chemistry have introduced new formulations that provide excellent performance in a wide range of applications. While other adhesives rely on primers to achieve adhesion, **VaproShield’s advanced PSA technology eliminates the need for primer.**

Why Eliminate Primer?

Why is the elimination of a primer important? The obvious answer is cost, including both the cost of the primer and the cost of labor to install it. Waiting for primer to dry (including on multiple coats) can significantly add to overall labor costs. **By completely eliminating primer, a self-adhered WRB/AB material can be installed faster and more efficiently.** In addition, eliminating primers can also limit the need for respirators and protective clothing often required for workers when volatile chemicals are present.

Our competition would have you believe the following: “Jobsites are the real world where the products must perform. Jobsites are neither reliably dry nor reliably dust or dirt free. The optimal results obtained in the lab will not directly translate to the field. While any membrane might be sticky enough to stick to a given substrate without

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primer, it will stick to whatever it comes into contact with first. In most cases, that is the dust and the dirt. Because the dust and dirt are not bonded to the substrate, neither is the membrane truly stuck to the substrate.

This is the role of primer. Primers prepare the surface for the proper adhesion of the membrane by consolidating all the dust and dirt, allowing intimate contact between the adhesive and the substrate."

In VaproShield's opinion, the role of primer is not to consolidate dust and dirt. Rather, primer provides help for an adhesive that is not properly suited for the task on its own. Although jobsites in the real-world are never dry, dust, or dirt free, slathering sticky chemicals all over a building just to get the WRB/AB material to adhere is not the solution. Excess dirt and dust can be blown, brushed, or wiped off faster, easier, cheaper, and without exposing tradesmen and the public to toxic chemicals. Consider the following label from a typical "Low VOC Primer" currently used by the competition. Fig. 1 and Fig. 2.

Even water-based primers have some toxic components that pose potential health hazards to the tradesmen installing the materials. Another well-kept little secret that the competition does not discuss is the effect of primer on vapor permeability. Application of a primer to the substrate can cause significant degradation of the vapor permeability of the substrate material. This in turn can result in drastically diminished drying capacity over the life of the building.

The Real Question to Ask

The question any building professional should be asking is...

"Do I really want this toxic stuff all over my building if I don't need it?"

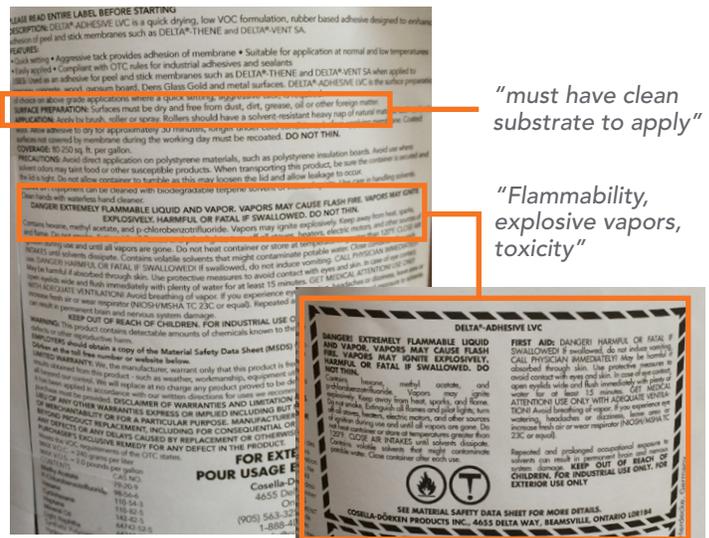
Both WrapShield SA Self-Adhered and RevealShield SA Self-Adhered have been approved by ABAA for many years. VaproShield has millions of square feet installed on high-profile projects all across North America. Review our project profiles at VaproShield.com and check the references listed on each profile. Take a minute to review comprehensive Testing Data, conducted by reputable and well-known certified testing agencies in the Building Enclosure Industry.

Many competitors use decades-old technology, while at VaproShield we innovate, test, refine and update our WRB/Air Barrier technology—offering you the most advanced and high-performing products on the market.



"Flammability"

Fig.2



"must have clean substrate to apply"

"Flammability, explosive vapors, toxicity"

Fig.2