

Self-Adhered PVC Membran

The roofing industry is seeing an increase in environmental, health, and safety concerns. These issues may determine the type of products or components used in constructing roof systems. As an example, the use of solvent-based adhesives in adhered roof covers is subject to ever more stringent environmental regulations and limitations. Some jurisdictions limit the use of hot asphalt and open flames for safety reasons. Self-adhered roof membranes have been developed to overcome these issues through the use of a

factory-applied adhesive layer. The first North American self-adhered, PVC-based roof membrane was installed in 1999, and it continues to perform problem free. The formal market introduction of the vinyl self-adhered membrane occurred in 2004.

The challenge with creating a self-adhered, vinyl-based roof was to find an adhesive package that worked well with both the membrane and the various standard roof substrates. This specially formulated adhesive package is applied in the factory under ideal, controlled conditions. The pressure-sensitive adhesive backing is pro-

tected by a polyester release liner until installation. The adhesive film is applied to the back of the membrane in two strips, leaving approximately a ½- to 1-in edge along one length and a 3-in-wide welding edge along the other length. Constructing the sheet in this manner facilitates application and allows the contractor to install the



Photo 2 — Aligning membrane selvage edge

Photo 1 — Rolling out membrane

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KEEPING BUILDING OCCUPANTS AND THE ENVIRONMENT SAFE

By Joe Schwetz

membrane in either of the two following methods:

After rolling out and positioning the initial roll of membrane (*Photo 1*), the succeeding rolls are aligned (*Photo 2*) so that the 3-in-wide welding edge overlaps the preceding membrane, allowing for the membrane to be welded.

1. Fold the sheet in half lengthwise, peel the release liner off (*Photo 3*), and then carefully fold or push the membrane back onto the substrate

(*Photo 4*). Press the membrane onto the substrate. Fold back the other half of the membrane, and repeat the process.

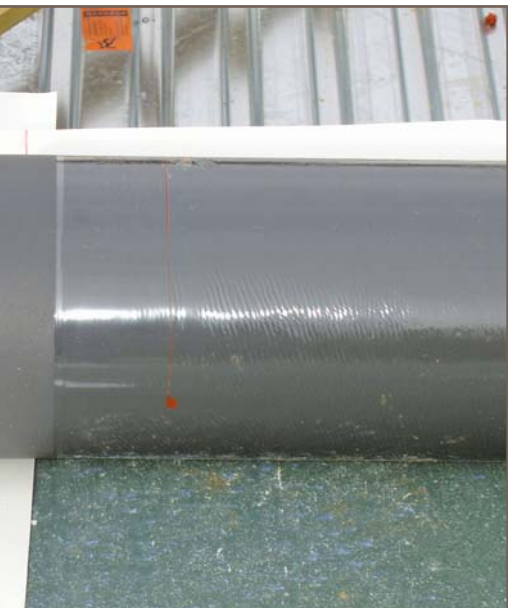


Photo 4 — Folding down membrane

Photo 3 — Removal of backing from membrane



Photo 5 — Rolling membrane with weighted roller

2. Place the rolls of membrane on the substrate, weigh down one corner, and then carefully start peeling the release liner from the bottom of the membrane, being sure not to move the roll off line. Press the membrane onto the substrate. Repeat the process for the other half of the roll of membrane.

Using a weighted roller (75 to 100 pounds), press the roof membrane onto the substrate (Photo 5) and finish by heat welding the seam overlap.


The advantages of a self-adhered vinyl roofing membrane include no odors, fumes, or open flames on the roof, and—most important—no volatile organic compounds. These membrane systems are ideal for roofing projects over occupied spaces (particularly schools and hospitals), where odors and VOC solvents may be particularly problematic. Such products also eliminate the fire hazard inherent in solvent-based adhesives. Additionally, many solvent-based adhesives are considered hazardous goods for shipping purposes, necessitating specialized, costly shipping.

Self-adhered membranes provide a number of timesaving benefits:

- The elimination of buckets of adhesives facilitates inventory, shipping, and handling.
- The application of the membrane is very quick and easy.
- Productivity is up to 50% faster than for traditional solvent-based adhesives, and there is no time lost waiting for the adhesive to dry or set up.
- Time and money are saved by not having to dispose of empty pails at the end of the project.

As with any adhered application, the substrate must be clean, dry, and free of any debris or contaminants. Dirt or debris on the substrate can affect the adhesion of the membrane by impeding contact to the substrate, which may cause adhesive and

cohesive failure where the contamination is. Self-adhered membranes *do* have low temperature restrictions. Most membranes should be installed only when substrate and ambient temperatures are 50°F and rising. This will restrict where and when the self-adhered membrane may be installed. As noted previously, once laid, the membrane must be rolled with a heavy roller to ensure intimate contact with the substrate. Self-adhered PVC membranes can be used on most common substrates, but best results are achieved on coated gypsum-based cover boards and coated glass-faced isocyanurate insulation boards.

In summary, with VOC issues, odors, and safety concerns, a self-adhered vinyl roof offers a viable alternative for an adhered roofing system. 

Joe Schwetz

Joe Schwetz is the national technical manager for Sika Sarnafil, a division of Sika Corp., Canton, MA. He has worked in the roofing industry for over 25 years in various research and development, technical, and managerial capacities. He is active in various technical standards- and code-development bodies and chairs the ASTM committee for PVC roofing.

