



## Self-Adhering TPO



SA-TPO is a 60 mil white TPO membrane laminated to a pressure-sensitive adhesive. It is packaged in 10' x 50' or 10' x 100' rolls. There is no lead time on this product, and it can be top loaded with other TPO or EPDM orders shipped from Carlisle, Penn., Senatobia, Miss., and Tooele, Utah.

### Application

SA-TPO is applied by peeling away the split release liner to expose the adhesive and then using a 70-pound roller to activate the adhesive to ensure a positive bond to the substrate. SA-TPO requires no adhesives or primers.

There is a 2" adhesive-free selvage edge along one side of the roll to allow for heat welding seams. End laps are butted together and stripped in with standard TPO membrane. Flashings can be either standard TPO membrane adhered to the substrate with approved bonding adhesive or SA-TPO following Mule-Hide's standard details for SA-TPO.

- SA-TPO may only be installed when outside temperatures are at least 50°F.
- A static electric charge may develop when removing the poly release liner. To avoid possible ignition, lids must be closed on any flammable products and a fire extinguisher should be readily available.

Approved Substrates/Surfaces	Unapproved Substrates/Surfaces
Polyisocyanurate insulation	Wood fiberboard
HD polyisocyanurate insulation	Lightweight insulating concrete
DensDeck®	Gypsum concrete
Securock®	Cementitious wood fiber
OSB	
Plywood	
Metal	
Clean concrete	

*Reference TPO Specifications for additional information.*



**Why Distributors value Mule-Hide SA-TPO**

- Provides a Mule-Hide labeled solution for a niche market
- A solution that does not require the use of bonding adhesives and associated fumes
- Strengthens the “one stop shop” position for ABC Supply

**Why Contractors value Mule-Hide SA-TPO**

- Good solution for occupied buildings
- Fully adhered, no VOC solution
- Saves labor because no glue used to install the membrane
- A solution that does not require the use of bonding adhesives and associated fumes
- Provides an opportunity to up-sell clients who are environmentally sensitive

**Why Architects value Mule-Hide SA-TPO**

- Fully adhered, no VOC solution
- A solution that does not require the use of bonding adhesives and associated fumes
- Provides UL and FM rated systems

**Why Building Owners value Mule-Hide SA-TPO**

- A solution that does not require the use of bonding adhesives and associated fumes
- Lessens disruption to business because of the labor savings
- Provides a solution for environmentally sensitive owners



# Self-Adhering TPO

## FAQs

### Does SA-TPO weld differently than standard TPO?

Yes, Mule-Hide SA-TPO membrane does act slightly different when welded compared to standard TPO membrane. Although the automatic welder settings should remain the same as if welding standard TPO, the weld itself is slightly different when pulled apart for testing. The weld in a SA-TPO membrane does not separate at the scrim between the white and black layers, but rather, it separates within the white layer of the bottom sheet. This may appear as a faulty weld to those who are expecting to see the membrane separate at the scrim. The SA-TPO seam probes the same as standard TPO.

### I don't trust the weld because it does not separate at the scrim. How can it be strong enough for the system?

Although the heat-welded seam in an SA-TPO roofing system is strong, the peel strength of the SA-TPO seam weld is less than the peel strength in a standard TPO heat-welded seam. The forces placed on the seams in a fully adhered system are different than the forces placed on a mechanically attached seam. A fully adhered seam primarily experiences shear forces while a mechanically attached seam experiences peel forces. Shear forces pull across the width of the seam while peel forces pull away from the seam. Welds placed in peel must have superior strength to welds placed in shear. The weld in an SA-TPO roofing system is not as strong as the weld in a standard TPO roofing system because it doesn't need to be.

### If the seam doesn't need to be as strong, why can't I just use seam tape like in an EPDM system?

TPO membranes are meant to be hot air welded. Mule-Hide believes that, although a seam can be weaker in a fully adhered roofing system, a taped seam does not provide the strength needed to hold a reinforced TPO membrane together. EPDM membrane, where taped seams are preferred, is much more elastic than TPO which helps to dissipate the shear forces exerted on the seam tape. Furthermore, the minimum width seam tape Mule-Hide approves in its systems is 3" wide. The selvage edge on SA-TPO membrane is only 2" wide, which does not provide the lap necessary to utilize seam tapes even if they were approved.

### One of your competitors offers a SA-TPO system with peel-and-stick seaming so I don't have to buy a hot air welder. Why doesn't Mule-Hide?

Look closely at the competitor's requirements for their SA-TPO systems with peel-and-stick seaming. Mule-Hide believes the increased installed costs associated with these additional requirements exceed the cost of a hot air welder needed to install the Mule-Hide system.

Here are just some of the **competition's requirements**:

- The peel-and-stick seaming entails a 6"-wide strip of adhesive on the bottom sheet AND another 6"-wide strip of adhesive on the top sheet. Resulting in **TWO layers of seam tape** at every side lap.
- Their detailing still requires hot air welding in many instances, which would **necessitate the contractor to have a hot-air welder on hand.**
- **Contractors must install a mechanically attached "anchor sheet"** when installing directly to wood decks, single layers of insulation or any job larger than 50 squares. In fact, anchor sheets are even required on the competition's SA-TPO roofing systems utilizing heat-welded seaming. Mule-Hide does not require the use of "anchor sheets."
- SA-TPO membrane with peel-and-stick seaming is only available in 5'-wide sheets, leaving **twice as many seams** as a roof using Mule-Hide 10'-wide SA-TPO rolls.

TALKING POINTS  
**FAQs****How can I be competitive with SA-TPO membrane when the price is nearly 2-1/2 times more than standard TPO?**

It is true that SA-TPO membrane is considerably more expensive than standard TPO membrane. However, the true benefits of installing SA-TPO roofing systems lie in the significant reduction in material costs and labor costs because bonding adhesives can be eliminated. Another intangible benefit is the elimination of fumes associated with bonding adhesives. Depending on the type of bonding adhesive used, approximately 24-40% of the total material costs of a 100-square fully adhered project with one layer of 1-1/2" Poly ISO. When factoring out the cost of adhesives, the material costs of a SA-TPO roofing system on the same 100 square project are just 14-46% higher than a fully adhered standard TPO roofing system, far less than the 250% premium paid for the membrane alone. When VOC compliance is required, the material cost to install SA-TPO over standard TPO is just 14-23%, making SA-TPO a viable option to using expensive VOC-compliant adhesives when the labor savings are factored in.

**Can I install SA-TPO all year round?**

SA-TPO must be installed when the exterior temperature is at least 50°F. SA-TPO membrane must be stored at 60°F to 80°F prior to use.

**What is the target market for SA-TPO?**

SA-TPO appeals to design professionals and building owners who are environmentally conscience or who cannot tolerate any fumes inside of the building such as schools, hospitals, etc.

**Why was the original formulation of Self-Adhering TPO removed from the marketplace by Carlisle Construction Materials (CCM)?**

Mule-Hide Self-Adhering TPO was re-released approximately two years ago. The initial SA-TPO product was removed from the market by CCM because of issues with meandering buckling or ridging not associated with insulation joints, otherwise known as "mole runs". Mole runs have been a common problem in the self-adhering market. Most manufacturers believe mole running is a problem created by failures in the adhesive applied to the back of the membrane. CCM research determined the mole run problem could be a membrane issue and not an adhesive issue. Consequently, CCM slightly modified the TPO formulation and reintroduced the product.

**Why can't I just broom it like a normal fully adhered TPO system?**

The adhesive on the SA-TPO sheet is pressure-sensitive. The amount of pressure exerted when just using a broom will be insufficient to properly activate the adhesive. Mule-Hide requires rolling with a 70 pound roller to ensure proper adhesion.

**Do I need to allow the SA-TPO membrane to relax longer before installing?**

No. All Mule-Hide TPO membranes must be allowed to relax a minimum of 15 minutes with temperatures are above 60°F or 30 minutes when temperatures are below 60°F.