

# Technical Guide

*"The name trusted in roofing since 1906"*



## GUIDELINES FOR APPLICATION OF HydroBOND Water-Based PVC Bonding Adhesive

March-2016

HydroBOND is a water-based adhesive designed to adhere PVC standard, PVC fleece back and PVC KEE fleece back roofing membranes to flat roofing surfaces (maximum slope of 2:12) that are clean, dry and water absorbent. HydroBOND adhesive can only be used when ambient temperatures are 40°F and rising. Temperatures must remain above 32°F for 72-hours after application (curing period). Drying time will be extended during periods of cool or humid weather. HydroBOND can be applied directly to the substrate with an airless sprayer or by rolling with a medium nap roller.

**HydroBOND is a single-sided, WET lay-in adhesive with no flash-off time. Adhesive must remain wet during the application process.**

**Not for use with PVC KEE standard membranes (smooth back)**

### Roller Application Method

1. Prepare the membrane by positioning the roll. Unroll completely to achieve the required overlap. Roll up the membrane in preparation for adhesive application. Do not use the "barn door" method when applying HydroBOND as this may result in long open times allowing the adhesive to dry. HydroBOND is designed as a one-sided, WET lay-in adhesive with no flash-off time and the adhesive must not dry during the application process.
2. HydroBOND water based, one-sided, wet lay-in adhesive can be applied with a medium nap roller to the approved substrate. The coverage rates outlined in this application instruction must be followed. Exceeding the maximum coverage rates will reduce HydroBOND's performance. Remember, HydroBOND is a wet lay-in adhesive and care must be taken to ensure the adhesive does not dry before the membrane is placed.
3. Once the adhesive is applied using the medium nap roller, roll the membrane in place. Applying the adhesive 3-4' at a time ahead of the roll is recommended to prevent drying of the adhesive.
4. Immediately broom the membrane starting from the center of the sheet and working out to the sides of the sheet using a soft bristle push broom to work out any air bubbles. Immediately after brooming, roll the adhered membrane in two directions in a cross ways pattern using a 100-lb. (45 kg) split steel membrane roller. Brooming and rolling are required and must be accomplished immediately after rolling the membrane into the wet adhesive.

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### Spray Application Method

#### Equipment

1. The spray gun should be recommended by the manufacturer for use with the airless sprayer. Use of an extension wand can make spraying more comfortable and keep overspray away from the operator.
2. A spray tip size of .027–.035" (.68–.88 mm) should be the minimum orifice opening, however, the tip size can be increased to .045" (1.1 mm) for greater output. Use a fan pattern of 10–12" (25.4–30.5 cm) wide held one foot (30.5 cm) above the substrate works well.

#### Spray Gun

1. An airless sprayer able to generate 3000 PSI (211 kg/cm<sup>2</sup>) and a minimum of 1.5 GPM (5.6 L/min) is required to apply the HydroBond adhesive. Larger units will allow for longer hose runs and increased production. A minimum of ½" (12.7 mm) diameter hose for pumping HydroBond is required. This can reduce to a 3/8" (9.5 mm) whip 10' (3.1 m) long leading up to the gun. Always check with the equipment manufacturer for their recommendations. HydroBOND's high viscosity may clog the filters of the airless sprayer and it is recommended that all filters in the spray rig and spray gun be removed. When the filters are removed it is important to keep debris out of the adhesive container to prevent clogging at the spray tip. Always read the spray equipment manufacturer's product literature, labels and other information completely before use.

#### Coverage Rate

1. The coverage rate will be influenced by the speed of the operator as well as ambient conditions, wind, overspray, etc. To achieve the required 100–133 ft<sup>2</sup>/gal (2.47–3.27 m<sup>2</sup>/L) coverage the thickness of the adhesive should be approximately 12–16 mils wet. Counting the pails used is helpful to confirm coverage rates.
2. Mechanically mix HydroBond before spraying to achieve smooth consistency with no lumps. Run the spray pump at the lowest pressure setting possible to achieve a good spray pattern, reducing overspray, bounce back and minimizing cleanup. HydroBond adhesive should not be applied more than 3-4' (0.9–1.2 in front of the roll of membrane. The membrane should be rolled/pulled into place as soon as possible. Immediately broom the membrane starting from the center of the sheet and working out to the sides of the sheet using a soft bristle push broom to work out any air bubbles. Immediately after brooming, roll the adhered membrane in two directions in a cross ways pattern using a 100 lb. (45 kg) split steel or membrane roller. Brooming and rolling are required and must be accomplished immediately after rolling the membrane into the wet adhesive.
3. Care must be taken to ensure no adhesive is applied overlapping material that will be heat welded. It is easier to clean the overspray off the lap area while the adhesive is still wet prior to welding. Dried adhesive requires solvent cleaning. Some airless sprayers have pressure roller attachments where the adhesive is pumped through the spray gun to a slotted, medium nap roller. This is a good option for windy days.

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### Coverage Rates

Substrate	Roller (SF / Gallon)	Spray (SF / Gallon)
<b>Smooth Back Membrane application rates (PVC only, not for use with PVC KEE)</b>		
Polyiso – Paper or Glass Facer	100 sf / gal (2.47 m <sup>2</sup> / L)	133 sf / gal (3.27 m <sup>2</sup> / L)
Dens Deck Prime or SECUROCK		
Plywood		
<b>Fleece Back Membrane application rates (PVC or PVC KEE fleece back membranes)</b>		
Polyiso – Paper or Glass Facer	100 sf / gal (2.47 m <sup>2</sup> / L)	133 sf / gal (3.27 m <sup>2</sup> / L)
Dens Deck Prime or SECUROCK		
Plywood		
Concrete or Cellular deck	100 sf / gal (2.47 m <sup>2</sup> / L)	100 sf / gal (2.47 m <sup>2</sup> / L)

### Vertical Flashings (PVC standard, not for use with PVC KEE standard)

It is recommended that vertical flashings be adhered with Low-VOC PVC Bonding Adhesive whenever possible. If Low-VOC PVC Bonding Adhesive cannot be used, then our HydroBOND adhesive can be used as a two sided contact adhesive for vertical flashings.

1. Follow the coverage rates listed above for the specific surface and membrane. Using a 9" medium nap roller, apply the HydroBond as a two-sided application using approximately half the application on the substrate and half the application on the membrane.
2. Let the adhesive dry until the adhesive strings when touched with a dry finger. This may take as long as 10-15 minutes on a warm day or more than 30 minutes in cool temperatures.
3. Once the adhesive has developed strings as described above, set the membrane in place ensuring full contact with the substrate. Roll the membrane with a 3"-wide silicone roller to ensure full adhesion. Once adhered, the membrane flashing should be mechanically secured along the top edge. The mechanical attachment must be completed before the end of the work day. Roll the membrane a second time after mechanical attachment to ensure proper adhesion and contact.

REVIEW CURRENT MULE-HIDE SPECIFICATIONS AND DETAILS FOR SPECIFIC APPLICATION REQUIREMENTS.

### Installation tips when using HydroBOND as a two-sided flashing adhesive

- Care must be taken when setting the flashing to avoid bridging greater than ¾" at angle changes; a light fold is acceptable, hard creasing of the PVC membrane must be avoided.
- The base flange of wall flashings should be welded as soon as possible to limit excessive bridging.
- HydroBond adhesive can only be used when temperatures are 40°F and rising, must be stored above 40°F and should not be used when temperatures are expected to fall below 40°F (5°C) during the 72-hour initial curing period.

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### Using HydroBOND on steel roof slopes (greater than 2:12)

1. HydroBond may be used on slopes greater than 2":12" with prior approval from Mule-Hide Products. HydroBond has a 72-hour initial curing period so it is necessary to secure the membrane to prevent moving or sliding. This can be accomplished by installing the membrane rolls parallel to the roof slope from the top of the slope downward and installing fasteners in the top lap immediately after the rolls are set into the adhesive.
2. When roofing from the top down, only the top sheet needs to be secured as successive sheets can be immediately welded to the secured sheet, preventing them from sliding. The membrane must be laid out in such a manner to avoid laps that buck water. Care must be taken to ensure no adhesive is applied overlapping material that will be heat-welded.
3. When Fleece BACK membrane is used, securement can be provided by installing the field sheets perpendicular to the roof slope and fastening the end-laps. End-laps are then overlaid using 8'-wide coverstrip welded to the membrane.
4. HydroBond adhesive can only be used when temperatures are 40°F and rising, must be stored above 40°F and should not be used when temperatures are expected to fall below 40°F (5°C) during the 72-hour initial curing period.