



Helix® Low-Rise Adhesive

Helix Low-Rise Adhesive is a two-component, construction-grade, polyurethane foam adhesive designed to adhere approved roof insulations, thermal barriers, cover boards and fleece-backed single-ply membranes to acceptable substrates. Helix Adhesive is VOC, CFC, HCFC and solvent free.

Helix Adhesive is applied in continuous ribbons or beads spaced 4", 6" or 12" on center depending on the project and code requirements.

Helix Adhesive is a completely new product in the industry and not a relabeled, existing adhesive. Helix Adhesive is gray in color, which is unique in the industry and aid in identifying Mule-Hide as the manufacturer.

Packaging

The Helix Adhesive is available packaged in cartridges (twin-pack tubes), tanks or pony drums.

1. A **cartridge** is a twin-pack consisting of one tube of Part A and one tube of Part B bound together. The cartridge is designed to fit the most of the dispensing guns currently available in the market. Mule-Hide offers a cordless non-branded dispensing gun. Cartridges are sold in cartons. Each carton contains (4) Cartridges and (6) Cartridge Static Mix Tips.
2. **Tank** packaging consists of two tanks, one labeled Part A (Component A) and one labeled Part B (Component B). Each tank is supplied in a separate box. A Helix Gun Assembly (a 25' dual-hose with attached spray gun), petroleum packet, wrench, 10 Tank Static Mix Tips and additional instruction sheet) is included in the Part A box. The Part B box only contains the Part B Tank. Helix Gun Assemblies and additional Tank Static Mix Tips may be purchased separately.
3. **Pony** drum packaging consists of a 15-gallon plastic container. Part A has a red label and lid where Part B has a blue label and lid. The ponies are designed to fit onto dispensing carts that are easily moved across the roof. Use the Mule-Hide Helix static mixing tips for this application.

Cartridge Packaging



Tank Packaging



Coverage Rates

Based on 3/4" bead spacing	Cartridges per carton	Tanks per set (Part A & Part B)
12" o.c.	Approximately 600 sf. <i>(150 sf. per cartridge)</i>	Approximately 3,000 sf.
6" o.c.	Approximately 300 sf. <i>(75 sf. per cartridge)</i>	Approximately 1,500 sf.
4" o.c.	Approximately 200 sf. <i>(50 sf. per cartridge)</i>	Approximately 1,000 sf.

Rough surfaces reduce the coverage rates.



Helix®

Acceptable Substrate Surfaces



Pony Packaging

Approved Substrates / Surfaces

1. **Concrete** (*poured in place or precast*)
 - a. Adhesion tests recommended.
 - b. Any asphalt residue found on the existing concrete must be primed with CAV-GRIP.
2. **Lightweight Concrete**
 - a. Adhesion tests required.
3. **Gypsum**
 - a. Adhesion tests recommended.
 - b. New gypsum must be confirmed by the contractor to be thoroughly dry. Old gypsum decks having any asphalt residue must be primed with CAV-GRIP. Adhesion tests are recommended.
4. **Cementitious Wood Fiber** (*Tectum*)
 - a. Adhesion tests recommended for aged decks.
5. **Wood** (*plywood, OSB or plank*)
 - a. Minimum deck thickness must be 19/32 (5/8) inches.
6. **Painted, galvanized or acoustical steel decks**
 - a. Steel decks may require pressure washing to remove processing oil residue.
 - b. Acoustical steel decks should have the flutes filled with fiberglass or other suitable fill insulation (to be approved by the building owner/designer) and tacked in place with either duct tape or other adhesive prior to applying the Helix Adhesive.
7. **Weathered, Smooth BUR** (*minimum type III or IV surfaced*)
 - a. Surfaces must be clean, dry and in sound condition.
 - b. Adhesion tests are recommended.
8. **Gravel surfaced BUR**
 - a. Insulation only may be attached to a properly prepared graveled BUR (contact Mule-Hide Tech Dept.).
 - b. Adhesion tests are required.
9. **Mineral Cap Sheet/Granulated Mod Bit Cap Sheet**
 - a. Cleaning (pressure washing) of the cap sheet recommended prior to application of the Helix Adhesive.
10. **Weathered, Smooth Mod Bit Cap Sheet**
 - a. Cleaning (pressure washing) of the cap sheet recommended prior to application of the Helix Adhesive.
 - b. Adhesion tests are required.
 - c. New sanded cap sheet is not an acceptable substrate.
11. **Mule-Hide F5 Air & Vapor Barrier**
12. **Carlisle 725TR Air and Vapor Barrier/Temporary Roof**
13. **Coming soon – TPO Single Ply**
 - a. Must be cleaned with 115 Cleaner and primed with Si TPO Primer.
 - b. Adhesion tests are required.

Special Conditions

1. Fresh type III or IV asphalt and asphalt that has not been previously exposed (non-oxidized, glossy surfaced) must be primed with CAV-GRIP.
2. Adhesion tests to determine proper adhesion are required over existing roof coatings.

Unapproved Substrates / Surfaces

The following substrates are not approved for use with Helix Adhesive:

1. Existing PVC single-ply membranes
2. Existing EPDM single-ply membranes
3. Existing acrylic or aluminum coatings
4. New smooth modified bitumen with a sand finish



Approved Insulations, Cover Boards, Thermal Barriers

Helix Low-Rise Adhesive is compatible with the following:

1. **High Density Wood Fiberboard**
 - a. Maximum sheet size is 4' x 4'.
2. **Polyisocyanurate**
 - a. Maximum sheet size is 4' x 4'.
3. **Extruded Polystyrene (XPS)**
 - a. Mule-Hide recommends the use of STYROFOAM™ Brand DECKMATE™ Plus FA flat or tapered insulation (available in 2' x 8' sheets).
 - b. Other XPS brands may require a primer or scoring of the surface (contact Mule-Hide Tech Dept. before proceeding).
 - c. 4' x 8' sheets must be cut into 2 pieces (4' x 4').
4. **Expanded Polystyrene (EPS)**
 - a. Maximum sheet size is 4' x 4'.
 - b. Fleece backed membranes (not black EPDM) may be installed directly over a minimum 1.5 lb density EPS.
 - c. UL and FM codes require an overlay of polyisocyanurate insulation or an acceptable cover board (DensDeck Prime or Securock).
5. **DensDeck Roof Board**
 - a. Mule-Hide recommends the use of DensDeck Prime when installing fully adhered systems.
6. **USG Securock[®] Brand Gypsum-Fiber Roof Board**
 - a. Mule-Hide recommends the use of Securock Brand Gypsum-Fiber Roof Board.
7. **Oriented Strand Board (OSB)**
 - a. When used as a cover board for fully adhered systems placed rough side up.

Specifications

Specifications

The following specifications have been updated to reflect the approved use of Helix Adhesive:

Membrane	Application Method	Helix for Insulation	Helix for Membrane	New Specification
TPO	Fully Adhered	X		
TPO Fleece Back and Fleece Back Plus	Fully Adhered	X	X	
TPO Fleece Back over TPO Single-Ply	Fully Adhered	X	X	X
EPDM	Fully Adhered	X		
PVC and PVC KEE HP	Fully Adhered	X		X
PVC and PVC KEE HP Fleece Back	Fully Adhered	X	X	X
SAMB	Fully Adhered	X		
APP	Fully Adhered	X		



Why Contractors value Mule-Hide Helix Low-Rise Adhesive

- Provides roofing solutions previously unavailable through Mule-Hide.
- Saves labor when attaching to a concrete deck.
- Cuts paperwork required to obtain system warranties with foam adhesives.
- Provides roofing systems with better hail resistance.
- Provides a non-penetrating attachment method over sensitive interiors.
- Large network of Mule-Hide and vendor field personnel to perform adhesion tests.
- Provides a low-rise foam adhesive with a Mule-Hide label.

Why Architects value Mule-Hide Helix Low-Rise Adhesive

- Provides roofing solutions previously unavailable through Mule-Hide.
- Provides roofing systems with better hail resistance.
- Provides design solutions for high uplift requirements.
- Provides a non-penetrating attachment method for sensitive interiors.
- Provides a non-thermal bridging option to roof attachment.

Why Building Owners value Mule-Hide Helix Low-Rise Adhesive

- Provides roofing solutions previously unavailable through Mule-Hide.
- Provides roofing systems with better hail resistance.
- Provides a non-penetrating attachment method for sensitive interiors.
- Provides a non-thermal bridging option to roof attachment.



Application of Helix Low-Rise Adhesive Cartridge



Application of Helix Low-Rise Adhesive Tanks



1. Does Helix Adhesive look different than the other products on the market?

Helix Adhesive is gray, which is unique in the industry.

2. How cold can it be when I use Helix Adhesive?

The substrate and ambient temperature must be above 32°F when using Helix Adhesive. If temperatures are below 50°F, the adhesive must be kept warm before use.

3. Can I full spray or splatter pattern Helix Adhesive?

No. Helix Adhesive is applied in 3/4" wide beads or ribbons spaced 4", 6" or 12" on center depending on the conditions of the project.

4. Does Mule-Hide have all of the rated systems with Helix that it had before with other foam manufacturers?

Not automatically. Since Helix is a completely new product and not just an existing product relabeled, testing is required before it can retain the listings previously held with other manufacturers. Our vendor has expended, and will continue to spend, a great deal to get the listings we had before plus additional listings. The testing process is at the mercy of the regulating bodies' schedule and work flow. There is a logical progression of testing that must be followed to ensure the proper requirements are met.

5. What do I do if I need a listed system and it's not offered with Helix Adhesive?

You can always use the foam manufacturer tested in the listing. Mule-Hide will issue a labor and material warranty on qualifying systems. If Mule-Hide has a listing utilizing the Helix Adhesive and the contractor uses a different manufacturer without prior approval from Mule-Hide, a warranty will not be issued.

6. What do I do if I can't get all of the asphalt off of the deck before installing Helix Adhesive?

Helix Adhesive does not stick to new, or previously unexposed, asphalt that has a shiny appearance. Whenever shiny asphalt is encountered, the asphalt must be primed with CAV-GRIP prior to the installation of Helix Adhesive.

7. How much more expensive is it to attach insulation with Helix Adhesive versus fasteners?

Material costs to adhere insulation to a roof deck using Helix Adhesive is much more expensive than using screws. As a general rule, material costs to use Helix Adhesive is around 5 to 6 times more expensive than using screws when one layer of insulation is installed. Unlike mechanically fastening insulation where only the top layer is fastened, each individual layer must be adhered when using Helix Adhesive. However, some of the major benefits to using Helix Adhesive can greatly reduce costs in other areas of the project, such as:

- Reduced labor compared to pre-drilling into a concrete roof deck.
- Elimination of tear-off costs by adhering directly to an existing roofing system.
- The ability to adhere directly to the roof deck without installing an insulation layer.

8. Does it matter what kind of tip I use on the gun or cartridge?

Yes, absolutely! Each manufacturer designs mixing tips to create the desired 1:1 ratio based on the properties of their product. You must use Helix mixing tips when using the Helix Gun Assembly or Cartridges. Failure to use Helix mixing tips results in off-ratio mixing and the Helix Foam will not properly rise.

9. What membranes can be adhered with Helix Adhesive?

Only fleece-back membranes can be adhered using Helix Adhesive. Currently, Mule-Hide offers TPO, PVC, and PVC KEE HP in fleece back configurations.

10. What is the shelf life of Helix Adhesive?

Helix Adhesive has a shelf life of approximately 12 months when stored in an upright position at 50°- 90°F in its original unopened container. Storage temperatures above the recommended range shorten shelf life. Do not store in direct sunlight or temperatures higher than 90°F, such as using it for tarp weight on a roof. Helix Adhesive should be stored in a covered, secure location. Keep from freezing. Product stored below 50°F must be given sufficient time (minimum 24 hrs.) for the adhesive to warm up prior to use.



11. Can I adhere directly to an existing PVC single-ply membrane with Helix Adhesive?

No. PVC is not an approved substrate for Helix Adhesive. In addition, Helix is not approved for attachment to existing EPDM single-ply membranes, acrylic or aluminum coatings.

12. Who does adhesion tests?

It is recommended that adhesion tests be done by Mule-Hide. Adhesion tests are scheduled through Mule-Hide Territory Managers.

13. What is a positive adhesion test?

Helix Adhesive tests are simple "shovel" tests. The existing substrate is prepared in the same manner as the specification and then a piece of the specified insulation is adhered using Helix Adhesive. Once cured, the insulation is pried off of the substrate with a shovel. A positive adhesion test is when the board breaks before the insulation peels off of the substrate. If specific uplift values are required, fully metered and measured pull tests can be performed based on ANSI/SPRI IA-1 Field Test Standards.

14. Why are some adhesion tests "recommended" and others are "required"?

Low-rise foam adhesives have performed well for nearly two decades. Over the past two decades, experience in the market has created an industry accepted list of best practices. Mule-Hide recommends adhesion tests on those substrates that have a lengthy history in the market with known characteristics. Mule-Hide requires adhesion tests on substrates that do not have an established history in the market or have critical variables that, if left unaddressed, will adversely affect the bond of Helix Adhesive. As always, good roofing practice dictates that adhesion tests should be done on all projects to ensure a quality bond using foam adhesives, regardless of whether they are recommended or required.

15. Will I have to fill out two warranty applications like I did before when I used foam adhesives in my Mule-Hide roofing system?

In the past, Mule-Hide would issue labor and material warranties on projects that used Millennium One Step™, INSTA STIK™ and OlyBond 500™ adhesive. However, the contractor would receive two warranty documents: the Mule-Hide roofing system warranty and a separate adhesion warranty from the foam manufacturer. This arrangement put additional steps into the process for both the contractor and Mule-Hide. When the contractor uses Helix Adhesive, only one warranty application and one warranty document will be required. Separate warranty documents are necessary on projects requiring a listed system using Millennium, INSTA STIK and OlyBond adhesive until Helix Adhesive is approved for those listings.

16. Why do I have to use Dow STYROFOAM™ Brand DECKMATE™ Plus FA Insulation for extruded insulation?

Our tests have shown that foam adhesives do not stick well to the smooth surface of extruded polystyrene insulation. DECKMATE Plus FA has a planed surface which increases adhesion.

