



Product Data Sheet

LOW-VOC BONDING ADHESIVE

PRODUCT DESCRIPTION

Low-VOC Bonding Adhesive is a high strength solvent-based contact adhesive that allows bonding of EPDM and TPO membrane to various porous and non-porous substrates. It is specially formulated using a blend of VOC exempt and non-exempt solvents to meet the < 250 g/l VOC content requirements of the OTC Model Rule for Single Ply Roofing Adhesives. Low-VOC Bonding Adhesive is easily applied with a 9" (228 mm) medium nap roller to create a strong bond between the membrane and approved substrate.

This product does not comply with the following California counties' VOC regulations: Alameda, Contra Costa, El Dorado, Los Angeles, Marin, Napa, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Mateo, Santa Clara, Solano, Sonoma, and Tehama. These areas require the use of Mule-Hide Low-VOC 1168 Bonding Adhesive.



BASIC USES

Mule-Hide Bonding Adhesive is used for bonding (cured) flashings and membranes to a variety of substrates.

TYPICAL PHYSICAL PROPERTIES

Typical values*	
Base Material	Synthetic Rubber
Color	Yellow
Solids	22%
VOC:	250 g/l max
Flash Point	0° F (-17° C) Closed Cup
Brookfield Viscosity	3,500 Centipoises
Avg Net Weight	8 lbs. / gallon (0.96 kg/l)
Packaging	5 Gallon Pails & 1 Gallon Cans
Shelf Life	1 Year

LEED Information	
Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
VOC Content	< 250 g/l

*General properties. Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification or specification range for any particular property of this product.

PACKAGING

Packaged in 5 gallon pails and 1 gallon cans

BENEFITS & SUPPLEMENTAL STATEMENTS

- High strength adhesive with quick bonding characteristics
- Ease of application with a medium nap roller
- Provides excellent adhesion between TPO or EPDM membranes and a variety of substrates
- Extended open time

CODE APPROVALS/COMPLIANCE

A variety of Factory Mutual Ratings and Underwriter Laboratory Classifications are available. Contact Mule-Hide Technical Department for additional information.

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COVERAGE RATES

Coverage for Low-VOC Bonding Adhesive is approximately 60 ft² (5.6 square m) per gallon (finished surface.) A 5-gallon pail should cover no more than 300 square feet (28 m² of finished area. This coverage rate is an average and may vary due to conditions on the job site. Porous wall substrates such as masonry block may require two coats of bonding adhesive. In these cases, allow the first coat of adhesive to flash off completely prior to applying the second coat of adhesive at the required coverage rate of 60 square feet per gallon.

INSTALLATION TEMPERATURE

If adhesive is stored below freezing temperatures, restore to room temperature for a minimum of 24 hours prior to use. Keep adhesive warm (60°F to 90°F, 15°C to 32°C) for ease of application.

INSTALLATION INSTRUCTIONS

Surface Preparation

The surface, on or against which adhesive is to be applied, shall be clean, smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease. Depressions greater than 1/4" (6 mm) should be feathered; using epoxy, mortar or other approved patching material. All sharp projections shall be removed by sweeping, blowing or vacuum cleaning.

Mixing

Stir Low-VOC Bonding Adhesive thoroughly once per day until all settled polymers are dispersed and the adhesive is a uniform yellow color. During mixing, scrape the sides and bottom of the pail until the adhesive is a uniform yellow color with no dark streaks. Keeping the adhesive warm, as well as using an air-operated mixing paddle, will aid in the mixing process.

Application

1. Allow membrane to relax for half an hour or longer. Allowing the membrane to relax will result in the roof's surface having a smoother appearance. This is especially true for sheets that have folds or creases.
2. After the Low-VOC Bonding Adhesive has been thoroughly mixed, apply to the substrate and membrane using a 9" (228 mm) medium nap roller. Application shall be continuous and uniform, avoiding globs or puddles that could result in solvent blisters. Heavy "wet" areas can be re-rolled to break the skin, allowing the solvents to flash off. The solvents in Low-VOC Bonding Adhesive must be allowed to flash-off until the adhesive does not string or transfer to a dry finger touch, but remains tacky. This is called the "tack test". It's recommended to continually monitor the adhesive for flash-off after the application of the adhesive. **Install the membrane after the adhesive passes the tack test to avoid trapped solvent blisters. In hot weather, flash-off time can occur in as little as 5 minutes or less. Temperature, sun, shade or humidity can affect flash-off time.** Any coated area, which has been exposed to rain, should be allowed to dry and then recoated. **Do not apply adhesive to seam areas or use with taped products.**
3. Roll the membrane onto the adhesive-coated substrate while avoiding wrinkles. Immediately brush down the bonded portion of the sheet with a stiff-bristle push broom to achieve maximum contact. For wall applications, use a neoprene type hand roller after brooming to ensure maximum contact. If blisters occur from trapped solvent, allow the solvent to naturally dissipate for 4 or 5 days and then re-roll or re-broom the membrane so it lays flat.

REVIEW CURRENT MULE-HIDE SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

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Precautions

1. Review the applicable Material Safety Data Sheet for complete safety information prior to use.
2. Low-VOC Bonding Adhesive must be stored in original, unopened containers at temperatures between 60°F (15°C) and 90°F (32°C). Jobsite storage in excess of 90°F (32°C) may affect product shelf life.
3. Prolonged exposure to below freezing temperatures will cause the adhesive to thicken and solidify in the can. Should the Low-VOC Bonding Adhesive be stored at temperatures lower than 25°F (-4°C), restore to room temperature for a minimum of 24 hours prior to use. Adhesive will perform as intended once it is returned to a liquid state. When temperatures are expected to be consistently below 40°F (4°C), a heated enclosure or hot box is required for storage. Keep the adhesive warm (60-90°F) for ease of application.
4. Low-VOC Bonding Adhesive is **EXTREMELY FLAMMABLE** -It contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at locations distant from material handling point and flashback. All containers should be grounded when material is transferred from one container to another. A red caution label is required when shipping. A fire extinguisher should be available. In case of fire, use water spray, foam, dry chemical or carbon dioxide. Do not use a solid stream of water because it can scatter and spread the fire.
5. Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately. During application, efforts must be made to prevent fumes from entering the building via air ventilation ducts. Do not place open containers or mix adhesive near fresh air intake units. When possible, shut down or seal off the closest units.
6. If swallowed, **DO NOT INDUCE VOMITING**. Call a physician immediately.
7. Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water. Contact physician if irritation persists. **Note:** Permeation resistant gloves (that meet ANSI/ISEA 105-2005) are recommended to be worn when using this product to protect hands from irritating ingredients.
8. Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
9. Do not thin Low-VOC Bonding Adhesive. Thinning will affect performance. Excessively thick or gelled material should be discarded.
10. These materials are sensitive to ambient moisture and heat will accelerate the effect of moisture. Opened containers of bonding adhesive should be used within 48 hours. Adhesive will begin to thicken after this point, making it difficult, and eventually impossible, to control adhesive thickness.
11. Adhesive must be allowed to flash-off but not become over dry. If membrane is mated with the substrate prior to the adhesive being dry, blistering will occur. If membrane is mated with the substrate after the adhesive has over-dried, loose or unadhered areas will occur. Thin application of adhesive increases risk of over-drying.
12. Coverage rates are an average and may vary due to jobsite conditions.
13. **KEEP OUT OF THE REACH OF CHILDREN**

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STORAGE & HANDLING

Job site storage in excess of 90°F (32°C) may affect product shelf life. Should the Low-VOC Bonding Adhesive be stored at temperatures lower than 60°F (15°C), restore to room temperature prior to use.

Prolonged exposure to below freezing temperatures will cause the adhesive to thicken and solidify in the can. Should the Low-VOC Bonding Adhesive be stored at temperatures lower than 25°F (-4°C), restore to room temperature for a minimum of 24 hours prior to use. Adhesive will perform as intended once it is returned to a liquid state. When temperatures are expected to be consistently below 40°F (4°C), a heated enclosure or hot box is required for storage. Keep the adhesive warm (60-90°F) for ease of application.

PROTECTION & SAFETY

Mule-Hide maintains Material Safety Data Sheets on all of its products. Material Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers. Mule-Hide's Material Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Mule-Hide products in your facilities.

ADDITIONAL INFORMATION

The information given on this PDS is subject to change without notice. Always check the Mule-Hide website at www.mulehide.com for the latest information, changes and updates or contact Mule-Hide Products Company at 800-786-1492.

DISCLAIMER

The statements provided concerning the material shown are intended as a guide for material usage and are believed to be true and accurate at the time of printing. No statement made by anyone may supersede this information, except when done in writing by Mule-Hide Products Co., Inc. Since the manner of use is beyond our control, Mule-Hide does not authorize anyone to make any warranty of merchantability or fitness for any particular purpose or any other warranty, guarantee or representation, expressed or implied, concerning this material. This product may be eligible for a Mule-Hide warranty, please check the Mule-Hide website at www.mulehide.com or contact Mule-Hide directly at 800-786-1492 for details. Buyer and user accept the product under these conditions and assume the risk of any failure, any injury person or property (including that of the user), loss or liability resulting from the handling, storage or use of the product whether or not it is handled, stored or used in accordance with the directions or specifications. Mule-Hide must be notified in writing of any claims and be given the opportunity to inspect the alleged failure before repairs are made.