

System Specifications

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Acrylic Roof Coating System for Existing, Aged, Smooth and Granulated Modified Bitumen and Asphaltic BUR Systems

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Acrylic Roof Coating System for Existing, Aged, Smooth and Granulated Modified Bitumen Membrane and Asphaltic BUR Systems

Part 1 – General

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This specification is a guide for coating and restoration of existing, aged, smooth and granulated Modified Bitumen (MB) and asphaltic BUR roof systems utilizing the Mule-Hide Acrylic Roof Coating System and accessory products.

1.1 Scope of Work

- A. Contractor will provide all labor, equipment and Mule-Hide labeled materials necessary to install a Mule-Hide Acrylic Roof Coating System.
- B. Mule-Hide's most current Product Data Sheets and installation instructions shall be followed in conjunction with this specification.
- C. Contractor to complete all necessary repairs to the existing roof system to restore it to a watertight condition using similar materials prior to installing the Acrylic Roof Coating System.

1.2 Related Sections

- A. Related sections may or may not be applicable to this specification
- B. Section 07 62 00: Sheet metal Flashing and Trim: Metal flashing and counterflashing installation and requirements.
- C. Section 22 30 00: Plumbing Specialties: Roof drains, scuppers, gutters and downspout installation and requirements.

1.3 References

- A. ASTM 6083 Standard Specification for Liquid Applied Acrylic Coating Used In Roofing
- B. NRCA Roofing and Waterproofing Manual
- C. Underwriters Laboratories Building Materials Directory
- D. CRRC (Cool Roof Ratings Council)

1.4 Submittals

- A. Submit Product Data Sheets (PDS) confirming physical and performance properties of each product used in the system.
- B. Submit Safety Data Sheets (SDS) for each product used in the system
- C. Submit a roof survey including roof type, measurements and descriptions of the condition of the seams, penetrations, drains, gutters, known leaks and a moisture scan or test cuts with an indication of moisture content. Photographs of all conditions should be included in the submission.
- D. Submit a sample copy of the requested warranty type.

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1.5 Quality Assurance

- A. Manufacturer Qualifications: Mule-Hide Products Co., Inc. shall provide a roofing system that meets or exceeds the criteria listed in this section.
- B. Contractor must be a Mule-Hide Warranty Eligible Contractor approved for the installation of the products utilized in this system specification.
- C. Supplier shall retain batch samples of all coating products used in the system for a minimum of 5 years.
- D. Prior to work commencing, the Mule-Hide Warranty Eligible Contractor shall submit a fully completed Roof Coating System Warranty Application to the Mule-Hide Technical Department. Included shall be an accurately dimensioned roof drawing plus photos of any unusual flashing details or roof conditions.
- E. Contractor shall furnish all insurance, licenses, permits and certifications as required by local authorities and/or the property owner.
- F. Contractor shall ensure that all work performed at the site shall be in accordance with National Roofing Contractors Association (NRCA) Low Slope Roofing Manual recommendations and all other pertinent guidelines issued by the NRCA in reference to other types of construction present at the job site.

1.6 Delivery, Storage and Handling

- A. All products delivered to the job site shall be in their original unopened containers or wrappings and clearly labeled with the manufacturer's name, product identification and date of manufacture.
- B. Store all materials in a dry, clean area protected from the elements and damage. Place all stored materials on pallets and cover with a tarpaulin. Keep out of direct contact with sunlight.
- C. All liquid products and caulks shall be stored at temperatures between 60° F and 80° F. All water based products must be prevented from freezing. Products that have frozen can no longer be used and must be replaced with new materials.
- D. All flammable materials shall be stored in a cool, dry area away from open flames and sparks. Follow precautions outlined on containers or supplied by the material manufacturer/supplier.
- E. All materials determined as being damaged (confirmed by Mule-Hide) due to improper storage on the job site are to be replaced with new materials.

1.7 Job Conditions

- A. The roof must be clean, dry and free of areas of ponding water, ice, snow, rain or dew, oils, grease, particulate matter or other debris.
- B. Roof must be inspected for the following existing conditions:
 - 1. Ridges, blisters, or other membrane or system defects
 - 2. Peeling and chalking of previous coatings
 - 3. Poorly attached vents or other projections
 - 4. Open seams and side laps
 - 5. Insufficient slope, damaged membrane or insulation
 - 6. Areas of ponding water – areas of dirt/debris accumulation
 - 7. Broken or improperly flashed pipes
 - 8. Broken or missing drain components
 - 9. Loose or damaged perimeter edge metal

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- 10. Deteriorated, damaged or loose flashings
- 11. Damaged or wet insulation or substrates
- C. All deficiencies must be properly corrected prior to the installation of the new Acrylic Roof Coating System.
- D. The contractor shall follow and comply with all safety regulations as recommended by OSHA.
- E. Any unusual or concealed condition discovered during the preparation of the existing roof surface or installation of the Acrylic Roof Coating System is to be reported to the owner and Mule-Hide immediately in writing. Work is to be halted until the owner has responded with a solution to the problems.
- F. All local building codes and requirements should be followed where applicable. It is the roofing contractor's sole responsibility to determine and ensure that the roofing system selected complies with all local codes and requirements.
- G. All air intake ventilation equipment should be shut off and all ductwork openings should be temporarily sealed during product application.

1.8 Precautions

- A. Coatings require mixing immediately prior to application. All containers shall be thoroughly mixed with a mechanical mixing device for a minimum of 5 (five) minutes each. Coatings shall be mixed no more than 1 (one) hour prior to use.
- B. The acrylic products are water based. Avoid freezing at all times.
- C. Remixing of Acrylic Roof Coatings is permitted as necessary.
- D. No products with chlorinated "Toxic Exempt" solvents including perchloroethylene, 111 trichloroethane or methylene chloride or isocyanates shall be utilized due to the associated health hazards to workers and building occupants.
- E. No asphalt or vegetable based oils may be used in the production of any product included in this specification.
- F. Materials should be maintained at a minimum temperature of 50°F for 24 hours prior to the application to ensure the optimal application qualities.
- G. Do not apply coatings during or just before rain, inclement weather or on frost covered or wet surfaces.
- H. The roof surface must be a minimum of 35° F to ensure that frozen condensation is not present on the roof surface. The roof surface should not exceed a maximum of 100°F to avoid blisters and pinholes.

1.09 Protection of Building and Adjacent Areas

- A. It is the sole responsibility of the installing contractor to protect all surfaces adjacent to the surfaces to be coated including but not limited to, windows, doors, equipment and wall surfaces, either from overspray, brushing or rolling of the coatings being installed.
- B. All roof top air intake equipment should be turned off and all openings should be sealed to prevent any fumes from entering the building.
- C. When spraying, parking lots adjoining the building should be blocked off sufficiently to protect vehicles from wind borne overspray.

1.10 Warranty

Mule-Hide Roof Coatings NDL System Warranties ("System Warranties") are available for commercial projects when approved by Mule-Hide and installed in compliance with Mule-Hide's published

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specifications and details. System Warranties are only available when applied for and installed by Mule-Hide Warranty Eligible Contractors. System Warranties are not available for residential projects. The Roof Coatings Material-Only Limited Warranty is available for both residential and commercial projects. Mule-Hide defines a residential project as a single-family dwelling.

- A. Roof Coatings Warranty Application forms must be fully completed and submitted to the Mule-Hide Technical Department prior to beginning the project. Issuance of a warranty will be dependent upon completion of the project to the satisfaction of Mule-Hide and payment of any required warranty fees. Mule-Hide reserves the right to decline to issue any warranties for projects completed before the submittal of the proper Warranty Application to Mule-Hide.
- B. Mule-Hide's Acrylic Roof Coating Material-Only Limited Warranty
 1. Mule-Hide offers a 10 or a 15-year Roof Coating Material-Only Limited Warranty for residential projects and commercial projects. This warranty covers leaks due to manufacturing defects only and does not include coverage for labor costs, leaks due to workmanship of the installed products, leaks caused by movement or deterioration of the existing roof surface to which the Acrylic Roof Coating System has been applied, leaks caused by other substrate conditions, other components not supplied by Mule-Hide and does not cover the appearance, cleanliness, discoloration or staining of the coating for any reason.
 2. Mule-Hide does not perform inspections of the installation before issuing the Roof Coatings Material-Only Limited Warranty. A Mule-Hide Warranty Application and the appropriate fee (if required) must be submitted to Mule-Hide to obtain this warranty. Proof of purchase (invoices) is required. See the Mule-Hide Roof Coatings Material-Only Limited Warranty sample for specific terms and conditions. This warranty is not transferrable.
- C. Mule-Hide's 20-year Premium Material-Only Warranty
 - a. Available to warranty eligible contractors only. This warranty covers labor associated with leaks directly caused by product defects. This does not include coverage for labor costs associated with leaks due to workmanship of the installed products or other items noted above. Available for both residential and commercial projects, fees and additional information is available on the applicable warranty application.
- D. Mule-Hide's Acrylic Roof Coating NDL System Warranty for Commercial Buildings
 1. Mule-Hide offers a 10 or 15-year Roof Coatings NDL System Warranty. The Roof Coatings NDL System Warranty is available through Mule-Hide Warranty Eligible Contractors only for commercial projects. This warranty is not available for residential projects. This warranty covers leaks due to manufacturing defects, premature weathering and the contractor's workmanship of the installed product. This warranty does not cover leaks due to movement or deterioration of the existing roof surface to which the Acrylic Roof Coating System has been applied, leaks caused by other substrate conditions, components not supplied by Mule-Hide and does not cover the appearance, cleanliness, discoloration or staining of the coating for any reason.
 2. See the Mule-Hide Sample Roof Coatings NDL System Warranty for specific terms and conditions. Please contact the Mule-Hide Technical Department for information and requirements regarding the Mule-Hide Roof Coatings System Warranty Program.

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Mule-Hide Roof Coatings Material-Only and System warranties require the following minimum application rates:

Warranty Type	Cleaner	Seams	A-300 Base	A-300 Finish*
10- year	Clean with 115 Cleaner applied with low pressure sprayer then power washed	A-200 brush applied @ 1.0 gal/100 linear feet of seams or A-300 Base @ 1.5 gal/100 sf (24 wet mils, 12 dry mils) with fabric embedded followed by a second coat of A-300 Base at same rate	1 coat @ 1.5 gal/100 sf (24 wet mils, 12 dry mils)	1 coat @ 1.5 gal/100 sf (24 wet mils, 12 dry mils)
15-year	Clean with 115 Cleaner applied with low pressure sprayer then power washed	A-200 brush applied @ 1.0 gal/100 linear feet of seams or A-300 Base @ 1.5 gal/100 sf (24 wet mils, 12 dry mils) with fabric embedded followed by a second coat of A-300 Base at same rate	1 coat @ 1.5 gal/100 sf (24 wet mils, 12 dry mils)	2 coats @ 1.0 gal/100 sf (16 wet mils, 8 dry mils per coat)
20-year	Clean with 115 Cleaner applied with low pressure sprayer then power washed	A-200 brush applied @ 1.0 gal/100 linear feet of seams or A-300 Base @ 1.5 gal/100 sf (24 wet mils, 12 dry mils) with fabric embedded followed by a second coat of A-300 Base at same rate	1 coat @ 1.5 gal/100 sf (24 wet mils, 12 dry mils)	2 coats @ 1.5 gal/100 sf (24 wet mils, 12 dry mils per coat)

*A-310 is an acceptable finish coat in material and system warranties.

Part 2 Products

2.1 General

- A. The components of the Mule-Hide Acrylic Roof Coating System shall be products manufactured or supplied by Mule-Hide Products Co., Inc.
- B. Components other than those supplied or manufactured by Mule-Hide may be submitted for review and acceptance by Mule-Hide's Technical Department. Any product requested for review and acceptance must be submitted prior to the job start. Mule-Hide's acceptance of any other product is based solely on chemical compatibility and published performance data provided by the component manufacturer. Other components may be considered on a job-

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by-job basis and must be approved in writing by Mule-Hide's Technical Department. Mule-Hide offers no warranty or guarantee for the performance or suitability of any component not supplied or manufactured by Mule-Hide.

2.2 Products

The primary product comprising the Acrylic Roof Coating System shall be the Mule-Hide A-300 Finish coating that meets or exceeds the requirements of ASTM 6083. Mule-Hide A-300 Finish is a stain resistant acrylic based elastomeric coating. It exhibits exceptional exterior durability and UV stability, superior flexibility in low temperature environments and high reflectivity. Refer to the Mule-Hide Product Data Sheets for physical properties and additional information.

2.3 Accessory Products

The following Mule-Hide materials must be used to install Mule-Hide Acrylic Roof Coating Systems. Mule-Hide will not warrant any application where another manufacturer's product is substituted for a Mule-Hide product. All products listed below are physically and chemically compatible with each other.

- A. 115 Cleaner - a biodegradable detergent wash suitable for cleaning and preparing metal, smooth BUR, modified bitumen, EPDM, TPO, aged, Hypalon (CSPE) and aged PVC roof systems.
- B. A-125 Metal Roof Primer - a modified acrylic, high solids, zinc-rich primer which totally encapsulates existing rust and inhibits the development of new rust. A-125 provides excellent adhesion for subsequent coats on metal substrates.
- C. A-300 Base - is a stain resistant, 100% acrylic elastomeric base coat intended for application to uncorroded metal, modified bitumen, asphalt BUR, PVC, EPDM, Hypalon, polyurethane foam and concrete roofs. A-300 Base is tinted gray to speed dry time and provides the applicator with visual confirmation of proper coverage when applying the bright white top coat of A-300 Finish. A-300 Base requires a top coating of A-300 Finish.
- D. A-300 Base-RA - is a stain resistant, 100% acrylic elastomeric base coat that may be used as an alternative base coat over an asphaltic BUR or Mod Bit surface that has aluminum coating residue that cannot be removed. Must be installed at the same rates as A-300 Base.
- E. A-310 Finish – a 100% Acrylic based, heavy bodied elastomeric roof coating designed for all common roof substrates. Delivering the highest solids content of Mule-Hide's acrylic coatings, A-310 forms a seamless and flexible layer of protection for your roof. May be used as an alternate for the A-300 when using same application rates
- F. A-200 Flashing Grade – a highly flexible acrylic based elastomeric flashing grade sealant. Primary use of this product is in the waterproofing and sealing of fasteners, seams, penetrations and end lap joints on existing roofs. Mule-Hide does not require the use of fabric with its A-200 product. A-200 is a brushable or extrudable material.
- G. MP Liquid Sealant - a single component, non-shrink, polyurethane sealant/filler used for filling/topping pitch pans.
- H. Polyester Reinforcing Fabric – A stitch bonded polyester product that offers unusual combination of high strength properties with good elongation for excellent thermal stress force accommodations used to reinforce corners, flashings, and severely deteriorated seams. Mule-Hide recommends a soft polyester that will readily conform to surface

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irregularities and are much easier to handle. Rolls of polyester reinforcing fabric are available in various widths and up to 324 feet long.

- I. Mule-Hide #301 Fibrated Emulsion Roof Coating – a fibrated asphalt based, clay emulsion roof coating used to prepare existing roof surfaces coated with aluminized coating that cannot be removed. #301 Fibrated Emulsion Roof Coating is recommended over surfaces with alligating.
- J. Mule-Hide #311 Non-Fibrated Emulsion Roof Coating - a non-fibrated asphalt based, clay emulsion roof coating used to prepare existing roof surfaces coated with aluminized coating that cannot be removed. #311 Non-Fibrated Emulsion Roof Coating is recommended over smooth surfaces without alligating.
- K. Walkway Granules – Mule-Hide Walkways granules are colored EPDM granules available in gray or safety yellow used with the Acrylic Roof Coating to provide a non-slip surface over a Mule-Hide Acrylic Roof Coating in areas of foot traffic or service areas.

2.4 Equipment

- A. Spray Equipment (optional) – Mule-Hide recommends the following minimum requirements for spraying Mule-Hide Acrylic Coating products. It is important to make sure all equipment and hoses are properly cleaned and stored after each use.
 - 1. Pump: Airless Spray Rig with a minimum material output of 2 gallons per minute at 3000 psi
 - 2. Hoses: Maximum of 300' of high-pressure material hose. Hose inside diameters (ID) are available ½" to ¾". Whip hose length should be one ID size smaller than rest of hose length.
 - 3. Spray Gun: Airless Spray Gun. Gun must be equipped with swivel for handling ease. Gun must also be equipped with a "Reverse-A-Clean" nozzle.
 - 4. Spray Tips: .025" - .035" orifice size is recommended, with a wide-angle fan pattern. Ideal orifice size will vary with the weather conditions. Always have spray tips at project site within the recommended orifice size range. Always use wet film gauge to determine the proper mil thickness has been applied.
- B. Miscellaneous equipment includes ¾" to 1-1/4" nap, lint free, 9" roller covers and rollers, 6 ft handles, 4" double wide chip brushes, roofers' trowels, scissors for cutting fabric and ½" power drill with mixing attachment.
- C. Miscellaneous hand and power tools may be required to complete any repairs to the existing roof.

Part 3 Execution

3.1 Examination

- A. Prior to bidding the project, a pre-inspection of the roof shall take place with the Warranty Eligible Contractor and a Mule-Hide representative (local Territory Manager) to review the conditions of the roof and determine if the roof is suitable for the application of a Mule-Hide Acrylic Roof Coating System. If there are concerns for wet areas of insulation, Mule-Hide requires a moisture scan of the entire roof. This should be followed up with core cuts to confirm the actual condition. Any area found to contain more than 15% moisture content should be removed and replaced with similar materials. Smooth Mod Bit roofs require adhesion tests. The Mule-Hide representative may waive the adhesion tests for granulated Mod Bit if determined to be in good condition.

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B. Adhesion Tests

1. The decision to perform adhesion tests should be determined at the time of the pre-inspection. Any smooth or granulated Modified Bitumen (Mod Bit) roof system having an existing coating covering the roof surface shall be required to have adhesion tests performed. While there is no actual ASTM test method for field testing of adhesion for roof coatings, many manufacturers will reference ATSM D903 or ASTM D3359. Mule-Hide follows ASTM D903 and ASTM D6083 with the following modifications:
 - a. If the existing coating is multiple layers of aluminum, all layers must be removed or the roof is not acceptable for the Acrylic Roof Coating System without the application of an asphalt emulsion. Adhesion tests are required after cleaning.
 - b. Contact Mule-Hide Technical Department for additional guidelines to determine if a primer is needed. Adhesion tests must be submitted to Mule-Hide for review prior to starting the project.
2. There shall be a minimum of two (2) tests performed or a minimum of one (1) test per 100 squares (10,000 square feet) of roof surface. If the roof is divided up into several sections, then each section shall be addressed as an individual roof and the minimum test requirements shall be followed for each section.
3. Performing adhesion tests
 - a. Thoroughly clean an area a minimum of 12" square (12" by 12").
 - b. Pre-cut several strips of polyester reinforcing fabric 2" wide and 8" to 10" long.
 - c. Brush apply a coat of the A-300 Base at a rate of 1 gallon per 100 square feet (16 wet mils, 8 dry mils) approximately 8" wide by 8" long.
 - d. Immediately embed the polyester reinforcing fabric strip into the A-300 Base centering it in the coating but leaving about 3" – 4" of the strip lying loose past the edge of the coating. Do not embed the entire length into the coating. Dry brush the fabric into the coating to ensure complete embedment and leaving no voids, air pockets or wrinkles.
 - e. Apply a second coat of the A-300 Base at the same rate as the first coat.
 - f. Repeat this procedure for each adhesion test.
 - g. Allow the coating to dry a minimum of 4 to 5 days before conducting the tests.
 - h. When conducting the test, lift the loose fabric and pull slowly straight up. If the fabric separates from the coating, leaving the coating still adhered to the roof membrane; the test is a "pass". If the A-300 Base separates from the roof surface, the test is a "fail".
4. If any tests fail, contact Mule-Hide Technical Department to discuss further options/remedies.
5. Adhesion test failures may disqualify the roof as acceptable for application of the Acrylic Roof Coating System.
6. Mule-Hide requires the contractor schedule with the local Mule-Hide Territory Manager to observe the adhesion tests.

3.2 Existing Conditions and Remedies

- A. Prior to the commencement of work, the roof shall be re-inspected and any conditions not included in the roof survey shall be added and noted. All new information must be communicated to Mule-Hide prior to starting work.
- B. The existing roof assembly must be structurally sound, watertight and free of blisters, shrinkage, buckling, unacceptable ponding conditions, encapsulated moisture, delaminating of plies, lifting seams, open or damaged flashings, loose terminations or other serious

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defects. Do not install the Acrylic Roof Coating System over moisture saturated substrates or insulation.

- C. Defects shall be remedied prior to the installation of the Mule-Hide Acrylic Roof Coating System. Repairs should be made with materials similar to the existing roof cover. Follow original manufacturers repair methods, refer to the NRCA Repair Manual for Low-Slope Membrane Roof Systems for individual condition repairs of defects or contact the Mule-Hide Technical Department for recommendations.
- D. No areas shall retain water more than 48 hours or at a depth exceeding 1/4" at any time. Areas of ponding must be corrected by installing additional insulation and new membrane or with the installation of additional drains. New insulation and similar membrane materials must be installed in compliance with the original manufacturer's specifications matching the existing roof system. If the original manufacturer's specifications are not available, contact the Mule-Hide Technical Department to discuss repair recommendations. Completed repairs must provide positive drainage of the roof surface.
- E. Areas of light ponding (must evaporate within 48 hours as defined by the NRCA) may be addressed by reinforcing the areas with A-300 Base and 40" wide sheets of polyester reinforcing fabric covering the ponding area. Apply 1 coat of A-300 Base at 1.5 gal/100 sf (24 wet mils, 12 dry mils) and immediately embed the 40" wide fabric using a brush to make sure there are no wrinkles. Allow to dry a minimum of 1 (one) hour. When dry, apply a second coat of A-300 Base at 1.5 gal/100 sf (24 wet mils, 12 dry mils). Allow 12 hours to dry before starting the A-300 Base Coat application.
- F. Existing insulation, membrane and all fasteners shall be inspected for insulation damage, membrane damage and fastener back out. Replace as necessary according to the original manufacturer's specifications, NRCA guidelines or Mule-Hide's similar specifications.
- G. Any wet insulation must be removed and replaced with similar new insulation and new membrane installed in the same manner as the membrane removed. Mule-Hide recommends roof scans be completed followed with core cuts to confirm the condition of the insulation and substrate.
- H. Existing flashings shall be properly terminated according to NRCA guidelines or the original membrane manufacturer's specifications. Defective terminations shall be remedied. Damaged flashings shall be replaced with similar materials prior to installation of the Acrylic Roof Coating System.
- I. Curbs and penetrations must not interrupt the flow of water off the roof. If defects are present, install crickets to divert water around the penetrations.
- J. If the existing roof surface contains multiple layers of aluminum coating that cannot be removed, the project is not acceptable for application of the Acrylic Roof Coating System unless the existing system is covered with an asphalt emulsion.
 - 1. Coating over existing aluminum coating that cannot be removed requires the application of either Mule-Hide #301 Fibrated Emulsion Roof Coating or Mule-Hide #311 Non-Fibrated Emulsion Roof Coating prior to applying A-300 Base.
 - a. Clean the existing surface with 115 Cleaner in accordance with Mule-Hides most current Product Data Sheet (PDS).
 - b. After the roof has thoroughly dried, apply the emulsion roof coating at a rate of 1-3 gallons per 100 square feet, depending on the roughness of the substrate.
 - c. Allow emulsion to dry a minimum of 48 hours before applying the A-300 Base.
 - 1. The emulsion must be thoroughly dry and firm enough to take foot traffic without damage prior to being coated.
 - 2. Drying time will be longer, 3 to 7 days, in cool and/or damp weather.

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3. Test for dryness in slowest drying areas by rubbing surface with a wet finger. Emulsion is dry if no staining occurs on your finger and the emulsion does not distort under pressure.

3.3 Surface Preparation

- A. Mechanically remove all loose coatings and/or patching material as is possible. Wire brush to remove any areas of scaly rust on any metal surfaces to be coated. Remove all debris, dirt and other loose contaminants from the roof surface prior to cleaning. Aluminum roof coatings must be removed.
- B. The roof surface shall be cleaned with Mule-Hide 115 Cleaner in accordance with Mule-Hide's most current Product Data Sheet. Do not dilute the 115 Cleaner. Apply direct to the roof with a mop, pump sprayer or other suitable low-pressure sprayer at a rate of .25 gallon to .5 gallon per 100 square feet. Avoid contact with painted surfaces or vinyl siding. Allow wet contact with the roof surface for a minimum of 15 minutes. Areas that are heavily contaminated or working in hotter temperatures may require an increased application rate from .5 gallon to 1 gallon per 100 square feet. Rewet the membrane with additional cleaner if needed. Agitate roof surface with stiff bristle broom or orbital scrubber. Heavily contaminated areas may require multiple cleanings with scrubbing to obtain a clean membrane.
- C. Rinse the roof surface with clean water and a minimum 2000 psi power washer until no 115 Cleaner residue remains. Allow roof to dry completely prior to system installation. Spot check the dried membrane with a clean rag by wiping the surface of the membrane to determine if any residue remains. If the cloth shows signs of residue (dirt or chalk) then repeat the rinsing of the membrane. A second cleaning application may be required.
- D. The contractor must be careful not to damage the existing membrane or inject water into the system while cleaning.
- E. Check local building ordinances for acceptable disposal of the rinse water. Many areas do not permit discharge into sewer systems or water containment areas. Compliance with local building codes and ordinances is the sole responsibility of the contractor.
- F. All repairs to the existing roof surface made with similar Mod Bit or BUR asphalt products must be allowed to cure before coating. Cure time for new exposed asphalt is 60 days. Cure time of asphalt based roof mastics is 90 days. Asphalt roof mastics with less than a 90-day cure may cause cracking of the Acrylic Roof Coating System.

3.4 Application

- A. Primers (rusted metal only)
 1. All cleaned rusted metal intended to be coated with acrylic coatings or sealants must first be primed with Mule-Hide A-125 Metal Roof Primer.
 2. Apply A-125 to rusted surfaces at a rate of 0.5 gallons per 100 square feet (approximately 8 wet mils, 2.8 dry mils) until there is no visible rust. If more product is required to cover rust, the additional product should be applied in multiple coats not exceeding 0.5 gallons per 100 square feet per coat. Applying A-125 at rates higher than 0.5 gallons per 100 square feet in one coat can result in surface splitting and blistering due to trapped moisture.
 3. Mule-Hide recommends 12 hours cure time between coats or the product should be sufficiently dry that foot traffic will not damage the coating.
 4. Base coats and/or finish coats should always be applied within 72 hours of each coat to minimize or prevent containment that would require additional cleaning.

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- B. It is recommended that all details including but not limited to: curbs, parapets, penetrations, drains, scuppers, pitch pans, valleys, waterways, pipes, and light ponding areas are properly prepared as follows prior to coating the roof:
1. Seams
 - a. All fully intact Modified Bitumen seams (including but not limited to seams, end laps and edges of all flashings) shall be sealed with Mule-Hide A-200 Flashing Grade. A-200 Flashing Grade is applied 3 inches wide at a minimum thickness of 60 wet mils over the entire length of each seam with a 4" brush. The maximum thickness of A-200 Flashing Grade applied in one coat is 120 wet mils. Applying A-200 Flashing Grade thicker than 120 wet mils could result in surface splitting due to trapped moisture. If a thicker application of A-200 Flashing Grade is desired, the A-200 Flashing Grade should be applied in multiple coats.
 - b. Open seams should be re-adhered together following NRCA guidelines. If asphalt roof mastic is used, exposed mastic must be allowed to cure for a 90-day period prior to applying acrylic products. Once repaired, seams may be sealed with A-200 as noted above.
 - c. An option to sealing seams is to strip open seams and end laps with Mule-Hide A-300 Base and a minimum 6" wide polyester reinforcing fabric. After cleaning the surface with 115 cleaner, the A-300 Base shall be applied at an application rate of 1.5 gal/100 sf (24 wet mils, 12 dry mils) and extending 4 inches out from each side of the seam edge. Immediately embed the polyester reinforcing fabric and dry brush the fabric smooth to eliminate wrinkles and voids. Allow to dry a minimum of 1 (one) hour. Apply an additional coat of A-300 Base over the fabric at the same rate of 1.5 gal/100 sf (24 wet mils, 12 dry mils) to fully encapsulate it. Allow to dry till the next day (minimum of 12 hours) before coating the roof surface with the A-300 Base.
 - d. The methods above for sealing seams and end are used as the basis for all other stripping and flashing applications, if not specified, the application rates, overlaps and minimum reinforcements from this section should be used.
 2. Flashings and Penetrations
 - a. After cleaning, corners of curbs and parapets are sealed with A-200 Flashing Grade at a minimum thickness of 60 wet mils. A-200 Flashing Grade is applied 6 inches wide at a minimum thickness of 60 wet mils over the entire width and height of each corner with a 4" brush. The maximum thickness of A-200 Flashing Grade applied in one coat is 120 wet mils. Applying A-200 Flashing Grade thicker than 120 wet mils could result in surface splitting due to trapped moisture. If a thicker application of A-200 Flashing Grade is desired, the A-200 Flashing Grade should be applied in multiple coats. Allow to dry till the next day (minimum of 12 hours) prior to applying A-300 Base.
 - i. An optional repair method is to strip corners and end laps with Mule-Hide A-300 Base and a minimum 6" wide polyester reinforcing fabric. After cleaning the surface with 115 cleaner, the A-300 Base shall be applied at an application rate of 1.5 gal/100 square feet (24 wet mils, 12 dry mils) and extending 4 inches out from each side of the seam. Immediately embed the polyester reinforcing fabric and dry brush the fabric smooth to eliminate wrinkles and voids. Allow to dry a minimum of 1 (one) hour. When dry, apply an additional coat of A-300 Base over the fabric at the same rate as the first coat. Allow to dry till the next day (minimum of 12 hours) before coating the roof surface with the A-300 Base. Corners need to be reinforced similar to seam stripping only in a vertical application.

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- b. Curbs shall have all seams/edges of flashings sealed with A-200 Flashing Grade. A-200 Flashing Grade is applied 3 inches wide at a minimum thickness of 60 wet mils over the entire length of each seam with a 4" brush. The maximum thickness of A-200 Flashing Grade applied in one coat is 120 wet mils. Applying A-200 Flashing Grade thicker than 120 wet mils could result in surface splitting due to trapped moisture. If a thicker application of A-200 Flashing Grade is desired, the A-200 Flashing Grade should be applied in multiple coats.
 - c. Scuppers are flashed using A-200 Flashing Grade installed a minimum of 2" into the throat of the scupper and 3" minimum onto the wall or deck.
 - d. Pipe flashings in sound condition, after priming if metal, are flashed with A-200 Flashing Grade applied with a brush or trowel approximately 60 wet mils thick around the pipe base extending from the base of the pipe out approximately 3". Pipe flashings that are not in sound condition, after priming if metal, are flashed using a two-piece wrap of polyester reinforcing fabric installed in A-300 Base.
 - i. Apply a base coat of A-300 Base up the sides of the pipe flashing to the point of termination of the existing pipe flashing and around the base of the pipe extending a minimum of 3". Application of the A-300 Base shall be at a rate of 1.5 gal/100 sf (24 wet mils, 12 dry mils).
 - ii. Apply the vertical pipe wrap fabric around the pipe with relief cuts at the base to allow "fingers" to extend a minimum of 1" onto the deck. Dry brush the fabric to embed the fabric into the coating and remove any wrinkles or voids.
 - iii. The base flange wrap is installed on the deck, with a hole cut tight to the base of the pipe and a minimum of 3" coverage from the base of the pipe. Dry brush the fabric to embed the fabric into the coating and remove any wrinkles or voids.
 - iv. After embedding the fabric, allow the A-300 Base to dry for a minimum of 1 (one) hour. When dry, apply a second coat of the A-300 Base at the same application rate as the first coat fully encapsulating the fabric. Allow the coating to dry till the next day (minimum of 12 hours) prior to applying additional coats of the Acrylic Coating.
 - e. Pitch pans requiring filler may be topped with MP Liquid Sealant.
 - f. Drains shall have A-300 Base applied at 1.5 gal/100 sf (24 wet mils, 12 dry mils) around the drain sufficient to fully embed a 40" x 40" piece of polyester reinforcing fabric with the fabric turned into the drain approximately 1 inch minimum. Always make sure the clamping ring is removed prior to flashing a drain. Do not cover the drain opening. Once the fabric is embedded, dry brush the fabric to remove any wrinkles or voids. Allow to dry a minimum of 1 (one) hour. When dry, apply a second coat of A-300 Base over the fabric at the same rate as the first coat. Once the A-300 Finish coats have been applied and have dried, the clamping rings may be reinstalled.
 - g. Flashings and penetrations that cannot be sealed utilizing polyester reinforcing fabric due to their shape or location shall be sealed A-200 Flashing Grade. Apply with a brush or trowel 60 – 120 mils thick and taper all edges. Allow 24 hours before top coating.
3. Waterways and Valleys
 - a. Waterways and valleys shall be reinforced with A-300 Base and a 40" wide sheet of polyester reinforcing fabric centered in the waterway or valley. Apply 1 coat of A-300 Base at 1.5 gal/100 sf (24 wet mils, 12 dry mils) and immediately embed the 40" wide fabric using a brush to make sure there are no wrinkles. Allow to dry a minimum of 1 (one) hour.

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- b. When dry apply a second coat of A-300 Base at the same rate as the first coat. Allow 12 hours to dry before starting the A-300 Base Coat application.
 4. Application over Blistered Areas
 - a. Blisters which occur in the cap ply of the Mod Bit which exposes the existing insulation must be repaired using like materials prior to the installation of the A-300 Base.
 - a. If there are additional waterproofing plies below the cap sheet, the blisters can be removed and the area left can be treated similar to a seam with A-200 Flashing Grade.
 - c. The step-off of the plies shall be treated with A-200 Flashing Grade feathered to provide a smooth transition to the area removed prior to the installation of the A-300 Base.
- C. Base Coat Application
 1. Make sure all roof surfaces to receive the roof coatings, are clean, free of any contamination or debris and are dry.
 2. Make sure all repairs to the existing roof have been properly completed and repairs have been allowed to dry/cure as indicated above.
 3. Thoroughly stir all containers of A-300 Base prior to application. Do not thin this product. This product is water based. Dry time will be longer in humid conditions. Weather conditions may extend cure time. Do not apply A-300 Base if rain is forecasted within 4 hours. Do not apply this product over damp or wet surfaces, including dew.
 4. Begin the roof application by applying 1 coat of A-300 Base at an application rate of 1.5 gal/100 sf (24 wet mils, 12 dry mils). Allow to dry till the next day (minimum of 12 hours drying time).
- D. A-300 Finish Application
 1. Make sure all surfaces to receive the A-300 Finish coating have been properly covered with the A-300 Base and have dried sufficiently.
 2. Thoroughly stir all containers of A-300 Finish prior to application. Do not thin this product. This product is water based. Dry time will be longer in humid conditions. Weather conditions may extend cure time. Do not apply A-300 Finish if rain is forecasted within 4 hours. A-300 Finish can be damaged if it rains before the product has sufficiently dried. Do not apply this product over damp or wet surfaces, including dew.
 3. Mule-Hide recommends applying the A-300 Finish in two coats for best results when a finished application rate greater than 1.5 gal/100 sf (24 wet mils, 12 dry mils) is required.
 4. Apply a coat of A-300 Finish at the application rate as determined by the warranty requirements. See Section 1.10 Warranties for application rates. Longer warranties may require additional coats. Do not distribute excessive amounts onto the roof surface prior to rolling. Do not over roll as a textured finish will result. Allow coating to dry. Typical drying time between coats at ambient temperature is 12 hours.
 5. Apply a second coat (when required by the warranty requirements) of A-300 Finish at the same application rate as the first coat. The second coat should be applied perpendicular (90 degrees) to the direction the first coat was applied to ensure even coverage. Material is fast drying. Do not distribute excessive amounts onto the roof surface prior to rolling. Do not over roll as a textured finish will result.
 6. If spraying, use a multi-pass technique for each coat to obtain even results. Each coat should be applied perpendicular (90 degrees) to the previous coat. Protect unintended surfaces from overspray. It is not recommended to use a spray application if any wind is occurring.
 7. Use a wet film thickness gauge during installation to confirm application rates.

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8. See Section 1.10 for information on wet/dry film thickness requirements for the various warranties available from Mule-Hide.
- E. Walkway Areas
1. Walkways may be constructed over newly installed acrylic roof coatings with the use of the Mule-Hide Walkway granules and additional A-300 Finish coating.
 2. Create outlines for the walkways by taping these areas off with masking or painters tape.
 3. Apply a fresh coat of A-300 Finish at a rate of .75 to 1.0 gallons per 100 square feet (12 to 16 wet mils, 6 - 8 dry mils). Use a gray colored coating with gray granules or the yellow colored coating with the safety yellow granules.
 4. As soon as the A-300 Finish is applied immediately broadcast the granules into the wet coating at a minimum rate of 15 lbs. per 100 square feet. Make sure the granules completely cover the new coating.
 5. As soon as the granules are broadcast, remove the tape. Do not wait for the A-300 Finish to dry.
 6. Do not let the A-300 Finish skin over before applying the granules as the granules will not adhere to the A-300 Finish. The A-300 Finish must be wet.
 7. Allow the coating to dry till the next day. Once dry, vacuum the loose granules to prevent the excess from going into drains or gutters.
 8. Over time, walkway surfaces may wear, but can easily be repaired or resurfaced by applying additional A-300 Finish Roof coating and new granules.

NOTE: Walkways are maintenance items not covered by Mule-Hide warranties. Additional coating and granules and their application are the responsibility of the building owner.

3.5 Protection

Always follow OSHA guidelines for proper safety clothing and equipment when spraying products.

3.6 Clean-Up

Remove all containers, equipment, and debris from the rooftop and project site upon project completion. Refer to each individual Product Data Sheet for clean-up of each individual product.

Note: When estimating materials necessary to complete an Acrylic Roof Coating System it is the Contractor's responsibility to include material calculations for waste.

END OF SECTION