

System Specifications

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Acrylic Roof Coating System For Metal Roofing Systems

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Part 1 – General

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This specification is a guide for coating and restoration of metal roofs utilizing the Mule-Hide Acrylic Roof Coating and accessory products.

1.01 Scope of Work

- A. Contractor will provide all labor, equipment and Mule-Hide labeled materials necessary to install an 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 replace any severely rusted panels with similar materials prior to installing the Acrylic Roof Coating System.
- D. When inspecting a metal roof and creating an estimate of materials needed to complete the project, do not assume a deck having a profile (such as an "R-panel, 4-inch RIB panel, standing seam panel, etc.) as a flat surface. The contractor is solely responsible for determining the additional surface of the panel created by the profile. Each different style of panel will create different amounts of surface area that must be included when determining the amount of coating necessary to coat the metal roof at a uniform thickness.
- E. 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.

1.02 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.

1.03 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)

1.04 Submittals

- A. Submit Product Data Sheets (PDS) confirming physical and performance properties of each product used in the system.

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- 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, fasteners, penetrations, drains, gutters, known leaks and a moisture scan or test cuts with an indication of moisture content. Photographs of all should be included in the submission.
- D. Submit a sample copy of the requested warranty type.

1.05 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 Acrylic 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.

1.06 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.

1.07 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. Damage to the metal panels or flashings
 - 2. Loose or missing fasteners
 - 3. Peeling and chalking of previous coatings

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- 4. Poorly attached or damaged vents or other projections
- 5. Open seams, end laps, deteriorated, damaged or loose metal flashings
- 6. Areas of ponding water – areas of dirt/debris accumulation
- 7. Broken or improperly flashed pipes
- 8. Loose or damaged perimeter edge metal or panels
- 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.
- H. All equipment should be grounded during operations.

1.08 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 Coating is permitted as necessary.
- D. No products with a "Flash Point" below 100°F shall be permitted due to associated fire hazard.
- E. 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.
- F. No asphalt or vegetable based oils may be used in the production of any product included in this specification.
- G. Materials should be maintained at a minimum temperature of 50°F for 24 hours prior to the application to ensure the optimal application qualities.
- H. Do not apply coatings during or just before rain, inclement weather or on frost covered or wet surfaces.
- I. 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.

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1.10 Warranty

Mule-Hide Roof Coating System Warranties are available for commercial projects when approved by Mule-Hide and installed in compliance with Mule-Hide's published specifications and details. System warranties are only available when applied for and installed by Mule-Hide Warranty Eligible Contractors. 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, 15, or 20-year Roof Coatings 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
 - 1. 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, the fees and additional information is available on the applicable warranty application.
- D. Mule-Hide's Acrylic Roof Coatings NDL System Warranty for Commercial Buildings
 - 1. Mule-Hide offers a 10, 15, or 20-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.

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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.

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

Warranty Type	Cleaner	A-125 Metal Roof Primer	Seams and Fasteners	A-300 Base Coat	A-300 Top Coat
10- year System	Clean with 115 Cleaner applied with low pressure sprayer then power washed	0.5 gallons/square (8 wet mils, 2.8 dry mils) in one coat on all rusted metal areas	A-200 Flashing applied @ 1 gal/100 linear feet of seams and applied @ 1 gal/ 300-400 fasteners	1 coat @ 1.0 gal/100 sf (16 wet mils, 8 dry mils)	1 coat @ 1.0 gal/100 sf (16 wet mils, 8 dry mils)
15-year System	Clean with 115 Cleaner applied with low pressure sprayer then power washed	0.5 gallons/square (8 wet mils, 2.8 dry mils) in one coat on all rusted metal areas	A-200 Flashing applied @ 1 gal/100 linear feet of seams and applied @ 1 gallon/ 300-400 fasteners	1 coat @ 1.0 gal/100 sf (16 wet mils, 8 dry mils)	1 coat @ 1.5 gal/100 sf (24 wet mils, 12 dry mils)
20-year System	Clean with 115 Cleaner applied with low pressure sprayer then power washed	0.5 gallons/square (8 wet mils, 2.8 dry mils) in one coat on all rusted metal areas	Liqui-Flash applied @ 1 gal/100 linear feet of seam and applied @ 1 gallon/ 350-450 fasteners	1 coat @ 1.0 gal/100 sf (16 wet mils, 8 dry mils)	2 coats @ 1.0 gal/100 sf (16 wet mils, 8 dry mils per coat)

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-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 exceed the requirements of ASTM 6083. Mule-Hide A-300 Finish is a stain resistant acrylic based elastomeric coating. It exhibits exceptional exterior durability

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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. 115 Cleaner is packaged as a concentrate. The recommended dilution rates are 2 oz. per gal. for heavy-duty cleaning and 4 oz. per gal. for very heavy-duty cleaning.
- 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 coating 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 topcoat of A-300 Finish. A-300 Base requires a top coating of A-300 Finish.
- D. **A-200 Flashing** – 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 in existing roofs. Mule-Hide does not require the use of fabric with its A-200 product. A-200 is a brushable or extrudable material.
- E. **MP Liquid Sealant** – a single component, non-shrink, polyurethane sealant used for filling/topping pitch pans and sealing fasteners, seams and endlaps.
- F. **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 irregularities and are much easier to handle. Rolls of polyester reinforcing fabric are available in various widths and are up to 324 feet long.
- G. **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 ¼". 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

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- 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 $\frac{3}{4}$ " 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 $\frac{1}{2}$ " 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 should 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.
- B. Adhesion Tests
 - 1. The decision to perform adhesion tests should be determined at the time of the pre-inspection. Any metal roof systems having an existing coating covering the roof surface shall be required to have adhesion tests performed. While adhesion tests are not always needed when coating a bare metal roof, they are required when the metal panels are pre-painted or are covered with an existing coating applied that will not be removed. 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 there is an existing coating which is asphalt or aluminum, all layers must be removed or the roof is not acceptable for the Acrylic Roof Coating System. Adhesion tests are required after cleaning.
 - b. If the roof surface has been coated with an acrylic coating that is in good condition, with no areas of rust showing, the application of the primer may not be required. Adhesion tests should be performed with and without the primer. 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.
 - c. Factory painted roof panels should have adhesion tests performed as the finish may be Kynar. Acrylic will not bond well to a Kynar finish. The best solution for Kynar coated panels is a Mule-Hide SEBS or SEBS+ Roof Coating System.
 - 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 without A-125 Primer (on roofs with existing acrylic coating only)
 - 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) approximately 8" wide by 8" long.
 - d. Immediately embed the polyester reinforcing fabric strip into the coating centering it in the coating but leaving about 3" – 4" of the strip laying loose past the edge of the coating. Do not embed the entire length into the coating. Dry brush the fabric into

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- the coating to ensure complete embedment and leaving no voids, air pockets or wrinkles. Allow to dry a minimum of 1 (one) hour.
- e. When dry apply a second coat of the A-300 Base coating at the same application 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".
 - i. If any tests fail, repeat the adhesion test using the A-125 Metal Roof Primer.
4. Performing adhesion tests with the A-125 Metal Roof Primer
 - a. Brush apply a coat of the A-125 Metal Roof Primer. The primer is applied at an application rate of .5 gallon per 100 square feet (8 wet mils). Allow the primer to dry a minimum of 2 hours prior A-300 Base coating at an application rate of 1 gallon per 100 square feet (16 wet mils, 8 dry mils) approximately 8" wide by 8" long.
 - b. Immediately embed the polyester reinforcing fabric strip into the coating centering it in the coating but leaving about 3" – 4" of the strip laying 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. Allow to dry a minimum of 1 (one) hour.
 - c. When dry, apply a second coat of the A-300 Base coating at the same application rate as the first coat.
 - d. Repeat this procedure for each adhesion test.
 - e. Allow the coating to dry a minimum of 4 to 5 days before conducting the tests.
 - f. 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-125 Metal Roof Primer separates from the roof surface, the test is a "fail".
 5. If any tests fail, contact Mule-Hide Technical Department to discuss further options/remedies.
 6. Adhesion test failures may disqualify the roof as acceptable for application of the Acrylic Roof Coating System.
 7. 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 the manufacturer prior to starting work.
- B. The roof assembly must be structurally sound and free of damaged panels, buckling, or loose or damaged metal flashings. Defects shall be remedied prior to the installation of the Acrylic Roof Coating System.
- C. No areas shall retain water at any time. Drains or crickets/saddles must be installed as to allow positive drainage of the roof surface.
- D. Fasteners shall be inspected and tightened where loose. Replace any missing or stripped fasteners with new fasteners of a slightly larger diameter. Stitch-fasten deflected metal panels and loose seams to ensure a secure substrate eliminating all gaps.

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- E. Existing flashings shall be properly terminated per NRCA guidelines. Defective terminations shall be remedied. Damaged flashings shall be replaced prior to installation of the Acrylic Roof Coating System.
- F. Curbs and penetrations must not interrupt the flow of water off the roof. If such conditions are present, install crickets to divert water around the penetrations.
- G. The existing roof system should be dry and free of any leaks prior to the application of the roof coating system. It is the installing contractor's responsibility to repair or replace damaged roof panels, other metal roof components and verify the existing metal roof system is leak free.
- H. Aluminum roof coating is not an acceptable substrate for many roof system applications. If the existing roof surface contains aluminum coating that cannot be removed, the project is not acceptable for application of the Acrylic Roof Coating System.

3.3 Surface Preparation

- A. Mechanically remove all loose coatings and/or patching material as is possible. Wire brush, sandblast or mechanically abrade until the substrate is smooth and rust free.
- B. The roof surface shall be cleaned with Mule-Hide 115 Cleaner in accordance with Mule-Hide's most current Product Data Sheet.
- C. Dilute the 115 Cleaner at a rate of 2 oz. per gal. for heavy-duty cleaning or at rate of 4 oz. per gal. for very heavy-duty cleaning. Apply 115 Cleaner at an approximate rate of 200-250 sq. ft. per gallon. It should be applied to the roof surface in sufficient quantity to wet the surface for a minimum of 15 minutes without drying.
- D. Avoid contact with painted surfaces or vinyl siding. Areas that are heavily contaminated or working in hotter temperatures may require additional cleaner applied 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.
- E. 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. Check the roof by spot wiping cleaned areas with a clean, white rag. Any residue appearing on the rag will indicate the area must be rinsed a second time. Heavy accumulation of residue on the rag may require a second cleaning of those areas.
- F. 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.
- G. Any metal panels, flashings, vents, ridge caps or other metal components, if found to be damaged, weakened or corroded to the point of compromising the metal roof system must be replaced.

3.4 Application

- A. Primer (all rusted metal surfaces)
 - 1. All rusted metal surfaces intended to be coated with acrylic coatings or sealants must first be primed with Mule-Hide A-125 Metal Roof Primer (A-125).
 - 2. Apply A-125 to rusted surfaces at a rate of 0.5 gallons per 100 square feet (approximately 8 wet mils or 2.8 dry mils). If more product is required to cover fully, 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 once coat can result in surface splitting and blistering due to trapped moisture.

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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.
- B. Seams and End Laps
1. All metal panel side seams and endlaps (void of caulks, tapes or asphalt) shall be sealed with Mule-Hide A-200 Flashing. A-200 Flashing is applied 2 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 applied in one coat is 120 wet mils. Applying A-200 Flashing thicker than 120 wet mils could result in surface splitting due to trapped moisture. If a thicker application of A-200 Flashing is desired, the A-200 Flashing should be applied in multiple coats.
 2. Metal panel side seams and endlaps which have been repaired using repair tapes that cannot be removed must be sealed with polyester reinforced fabric embedded and covered with the A-300 Base Roof Coating.
 - a. The overlap of the polyester reinforcing fabric and the A-300 Base over the repair material must extend a minimum of 3-1/2 inches beyond the edges of the repair materials. The A-300 Base Roof Coating should be feathered a minimum of 1 inch beyond the polyester reinforcing fabric.
 - b. All rolls of polyester reinforcing fabric are up to 324 feet long and available in several different widths. Apply the A-300 Base Roof Coating at 1.5 gal/100 sf (24 wet mils, 12 dry mils) and immediately embed the polyester reinforcing fabric. Dry brush the fabric smooth to ensure no wrinkles or voids exist. Allow to dry a minimum of 1 (one) hour. When dry, apply a second coat of A-300 Base Roof Coating over the fabric at an application 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) prior to applying the A-300 Roof Coating
 3. Existing repairs to metal panel side seams and made with asphalt mastic, or urethane, silicone or acrylic caulks must be removed. Once fully removed and the surface of the metal cleaned, the seams shall be checked for gaps. Gaps greater than 1/4" wide shall be stitch fastened together with fastener spacing not to exceed 12" on center to ensure a continuous substrate eliminating gaps. Seams are then sealed with Mule-Hide A-200 Flashing 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 applied in one coat is 120 wet mils. Applying A-200 Flashing thicker than 120 wet mils could result in surface splitting due to trapped moisture. If a thicker application of A-200 Flashing is desired, the A-200 Flashing should be applied in multiple coats.
 4. End laps in good condition, not showing signs of expansion/contraction shall be sealed with A-200 Flashing 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 applied in one coat is 120 wet mils. Applying A-200 Flashing thicker than 120 wet mils could result in surface splitting due to trapped moisture. If a thicker application of A-200 Flashing is desired, the A-200 Flashing should be applied in multiple coats.
 5. End laps showing signs of movement must be sealed with polyester reinforcing fabric embedded and covered with the A-300 Base Roof Coating. The overlap of the polyester reinforcing fabric and A-300 Base Roof Coating on both sides of the end lap must extend a minimum of 3-1/2 inches on either side of the seam. Additional fasteners to secure loose panels may be required.
 - a. The overlap of the polyester reinforcing fabric and the A-300 Base Roof Coating over the repair material must extend a minimum of 3-1/2 inches beyond the edges of the

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- repair materials. The A-300 Base Roof Coating should be feathered a minimum of 1 inch beyond the polyester reinforcing fabric.
- b. All rolls of polyester reinforcing fabric are up to 324 feet long and available in several different widths. Apply the A-300 Base Roof Coating at 1.5 gal/100 sf (24 wet mils, 12 dry mils) and immediately embed the polyester reinforcing fabric. Dry brush the fabric smooth to ensure no wrinkles or voids exist. Allow to dry a minimum of 1 (one) hour. Apply a second coat of A-300 Base Roof Coating at 1.5 gal/100 sf (24 wet mils, 12 dry mils) and allow to dry till the next day (minimum of 12 hours) prior to applying the A-300 Base Roof Coating.
6. Repairs to seams and end laps made with asphalt mastic, urethane, silicone or acrylic caulks that cannot be removed must be sealed with polyester reinforcing fabric embedded and covered with the A-300 Base Roof Coating.
- a. The overlap of the polyester reinforcing fabric and the A-300 Base Roof Coating over the repair material must extend a minimum of 3-1/2 inches beyond the edges of the repair materials. The A-300 Base Roof Coating should be feathered a minimum of 1 inch beyond the polyester reinforced fabric.
 - b. All rolls of polyester reinforcing fabric are up to 324 feet long and available in several different widths. Apply the A-300 Base Roof Coating at 1.5 gal/100 sf (24 wet mils, 12 dry mils) and immediately embed the polyester reinforcing fabric. Dry brush the fabric smooth to ensure no wrinkles or voids exist. Apply a second coat of A-300 Base Roof Coating over the fabric at an application 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) prior to applying the A-300 Base Roof Coating.
- C. All fasteners shall be sealed with Mule-Hide A-200 Flashing after the roof has been primed. Fasteners shall be completely covered by the sealant. One gallon will cover and seal approximately 300-400 fasteners.
1. All fasteners shall be checked and tightened as necessary.
 2. All fasteners that have been stripped or neoprene washers are missing or damaged shall be replaced with new oversized fasteners with neoprene washers.
- D. Flashings and Penetrations
1. Flashings are sealed using A-300 Base Roof Coating and polyester reinforcing fabric, similar to reinforcement on a repaired seam. All penetrations (pipes, curbs, scuppers, and wall transitions) are sealed in the same manner.
 2. Flashings and penetrations that cannot be sealed utilizing polyester reinforcing fabric due to their shape or location shall be sealed with A-200 Flashing
 3. All flashings and details shall be completed prior to the installation of the A-300 Base Roof Coating.
- E. When requesting 20-yr warranties, the A-200 Flashing shall be replaced with the MP Liquid Sealant for flashings, penetrations, seams, end laps and fasteners.
1. Apply the MP Liquid Sealant at the rate of 150 linear feet per gallon over seams and endlaps.
 2. One gallon of MP Sealant will cover and seal approximately 350 – 450 fasteners.
 3. When using the MP Liquid Sealant with polyester reinforcing fabric, apply the MP Liquid Sealant 1/8" thick, embed the fabric, dry brush to remove any wrinkles or voids and apply an additional coat at 1/8" thick. Allow to dry till the next day (a minimum of 12 hours) prior to applying A-300 Base Roof Coating.
- E. Pitch pans may be filled/topped off with the MP Liquid Sealant.
- F. Waterways, Valleys, and Areas which Retain Water
- These areas must not exceed the limitations identified in 3.2 Existing Conditions and Remedies section. If these areas exist on the roof and cannot be remedied, the use of a Mule-Hide Acrylic Roof Coating system is not recommended.

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G. Base Coat

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 Roof Coating 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. A-300 Base Roof Coating can be damaged if it rains before the product has sufficiently dried. 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 Roof Coating at an application rate of 1.0 gal/100 sf (16 wet mils, 8 dry mils). Allow to dry till the next day (minimum of 12 hours drying time).

H. A-300 Finish Application

- a. Make sure all surfaces to receive the A-300 Finish coating have been properly covered with the A-300 Base Roof Coating and have dried sufficiently.
- b. 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.
- c. 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.
- d. 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.
- e. 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.
- f. 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.
- h. Use a wet film thickness gauge during installation to confirm application rates.
- i. 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). Use a gray colored coating with gray granules or the yellow colored coating with the safety yellow granules.

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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.

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