

System Specifications

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SEBS+ Roof Coating System For Various Existing Roof Systems

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System Specifications

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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 SEBS+ 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 SEBS+ 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 damaged, excessively deteriorated or wet areas of existing roofing materials with similar materials prior to installing the SEBS+ Roof Coating System.
- D. When inspecting an existing roof system and creating an estimate of materials needed to complete the project, the contractor is solely responsible for all necessary repairs to the existing roof to provide a sound, watertight roof system prior to coating the roof with the new materials.
- E. Coverage rates indicated in this specification **Do Not** include calculations for waste. When installing liquid products, the contractor must include a waste factor when calculating quantities of material necessary to meet the project requirements.
- F. White coatings may have a significant cooling effect on roof surfaces. It is recommended that the building envelope should be evaluated to ensure that the insulation and vapor barrier are sufficient to prevent condensation on interior surfaces.

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. NRCA Roofing and Waterproofing Manual
- B. Underwriters Laboratories Building Materials Directory
- C. 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.
- B. Submit Safety Data Sheets (SDS) for each product used in the system

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- C. Submit a roof survey including roof type, measurements and descriptions of the condition of the roof including but not limited to: seams, fasteners, penetrations, drains, gutters, known leaks and a moisture scan or test cuts with an indication of moisture content. Photographs of all conditions that require repairs prior to the application of the coating 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 SEBS+ Roof Coating System Warranty Application to the Mule-Hide Technical Department. Included shall be an accurately dimensioned roof drawing.
- 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. Materials exposed to lower temperatures affect the workability and performance of the product. Products shall be restored to the above temperature prior to use.
- 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, Aluminum coatings, particulate matter or other debris.
- B. All pre-existing roofing must have sufficient slope (min 1/4 inch per foot) to prevent ponding water.
- C. Roof must be inspected for the following existing conditions:
 - 1. Damage to the roof surface or flashings
 - 2. Ridges, blisters or other membrane or system deficiencies
 - 3. Peeling and chalking of previous coatings
 - 4. Poorly attached or damaged vents or other projections

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5. Open seams and/or side laps
 6. Areas of ponding water – areas of dirt/debris accumulation
 7. Broken or improperly flashed pipes
 8. Loose or damaged perimeter edge metal
 9. Check for moisture within the existing system. If moisture is suspected or present, obtain a moisture survey.
- D. All deficiencies must be properly corrected prior to the installation of the new SEBS+ Roof Coating System.
 - E. Removal and replacement of areas containing moisture is required.
 - F. The contractor shall follow and comply with all safety regulations as recommended by OSHA.
 - G. Any unusual or concealed condition discovered during the preparation of the existing roof surface or installation of the SEBS+ 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.
 - H. 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.
 - I. All air intake ventilation equipment must be shut off and all ductwork openings should be temporarily sealed during product application.
 - J. All equipment must 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. Avoid entraining air when mixing. Do not mix at high speeds.
- C. Remixing of Mule-Hide SEBS+ Roof Coating and SEBS Primer 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 coating when ambient temperature is within 5°F of the dew point.
- I. Do not apply coatings during or just before rain, inclement weather or on frost covered or wet surfaces.
- J. 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 must be turned off and all openings must be sealed to prevent any fumes from entering the building.

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- C. When spraying, parking lots adjoining the building should be cleared of vehicles and blocked off sufficiently to protect vehicles from wind borne overspray.

1.10 Warranties

Mule-Hide SEBS+ Roof Coating System and Material Only Warranties are available for commercial roof projects when approved by Mule-Hide and installed in compliance with Mule-Hide's published specifications and details. System warranties are only available when installed and applied for by Mule-Hide Warranty Eligible Contractors. Mule-Hide defines a residential project as a single-family dwelling.

- A. 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. SEBS+ Roofing Material-Only Limited Warranty

1. Mule-Hide offers a 10 and 15-year Roofing Material-Only Limited Warranty ("Warranty"). The Warranty covers only the Mule-Hide SEBS+ Roof Coating materials (or portion thereof) determined by Mule-Hide to be defective and resulting in roof leaks. This Warranty does not cover workmanship or other components not supplied by Mule-Hide. Mule-Hide does not perform inspections of the installation before issuing an SEBS+ Roofing Material-Only Limited Warranty.
2. A Mule-Hide Warranty Application must be submitted to Mule-Hide to obtain this warranty. Proof of purchase is required.

C. SEBS+ Roof Coating System Warranty

1. This 10 or 15-year warranty is available through Mule-Hide Warranty Eligible Contractors only for commercial roofing 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 substrate issues such as (but not limited to) movement or deterioration. See the Mule-Hide Sample SEBS+ Roof Coating System Warranty for specific terms and conditions.
2. A Mule-Hide Warranty Application must be submitted to Mule-Hide to obtain this warranty. Proof of purchase is required.

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

Warranty term	Substrate	Prep	Seams	Base coat	Finish coat	Total
10-Years	Smooth Asphalt or Modified Bitumen	115 Cleaner and pressure washing	SEBS Seam Sealer for seams. SEBS+ coating and reinforcing fabric to reinforce curbs, penetrations, or waterways	1 coat @ 1.5 gallons per square	1 coat @ 1.5 gallons per square	3gal/sq.
	Granular Modified Bitumen	115 Cleaner and pressure washing	SEBS Seam Sealer for seams. SEBS+ coating and reinforcing fabric to reinforce curbs, penetrations, or waterways	1 coat @ 2.0 gallons per square	1 coat @ 2 gallons per square	4gal/sq.
	Aged TPO or Hypalon	115 Cleaner and pressure washing	SEBS Seam Sealer for seams. SEBS+ coating and reinforcing fabric to reinforce curbs, penetrations, or waterways	1 coat @ 1.25 gallons per square	1 coat @ 1.25 gallons per square	2.5gal/sq.
15-Years	Smooth Asphalt or Modified Bitumen	115 Cleaner and pressure washing	SEBS Seam Sealer for seams. SEBS+ coating and reinforcing fabric to reinforce curbs, penetrations, or waterways	1 coat @ 2 gallons per square	1 coat @ 2 gallons per square	4gal/sq.
	Granular Modified Bitumen	115 Cleaner and pressure washing	SEBS Seam Sealer for seams. SEBS+ coating and reinforcing fabric to reinforce curbs, penetrations, or waterways	1 coat @ 2 gallons per square	2 coat @ 1.5 gallons per square	5gal/sq.
	Aged TPO or Hypalon	115 Cleaner and pressure washing	SEBS Seam Sealer for seams. SEBS+ coating and reinforcing fabric to reinforce curbs, penetrations, or waterways	1 coat @ 1.5 gallons per square	1 coat @ 1.5 gallons per square	3gal/sq.

Part 2 - Products

2.1 General

- A. The components of the Mule-Hide SEBS+ 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

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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 SEBS+ Roof Coating System shall be the Mule-Hide SEBS+ Roof Coating that meets or exceeds the requirements of ASTM D6083. This product is a solvent-borne thermoplastic rubber coating exhibiting a high degree of weather resistance and high solar reflectance. 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 SEBS+ 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 asphalt BUR, modified bitumen, aged TPO and aged Hypalon (CSPE) roof systems.
- B. SEBS Primer- A solvent-borne, zinc rich, rust inhibiting primer in an aromatic hydrocarbon vehicle. SEBS Primer should be applied to areas of solid or significant rust. The SEBS Primer is applied in one coat at an application rate of 1.25 gallons (20 wet mils/8 dry mils) per 100 square feet.
- C. SEBS Seam Sealer- A solvent-borne thermoplastic rubber sealant and caulk, intended for flashing, sealing and repairing metal roof seams and fasteners. Available in 3 and 5 gallon pails as well as 55 gallon drums.
- D. SEBS 1 Sealant – a high performance, multi-purpose thermoplastic elastomer based roofing sealant. It exhibits excellent adhesion to most surfaces, is available in multiple colors and packaged in 10 oz. tubes. May be used as an alternative to SEBS Seam Sealer for flashing, sealing and repairing metal roof seams and fasteners.
- E. Polyester Reinforcing Fabric – These are stitch bonded polyester products that offer unusual combination of high strength properties with good elongation for excellent thermal stress force accommodations. Mule-Hide recommends a soft polyester fabric that will readily conform to surface irregularities and are much easier to handle.

2.4 Equipment

- A. Spray Equipment (optional) – Mule-Hide recommends the Graco 733 or Graco 833 with 3/4" hose to 5/8", 25' whip with mastic gun and 635 tip. In cold weather, attach one or more Graco Viscon in-line heaters in order to raise material temperature to a minimum 70°F and maximum 130°F at the spray tip. Please contact Mule-Hide Technical Department for more detailed information.
- B. Miscellaneous equipment includes 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 1/2" power drill with mixing attachment.
- C. Miscellaneous hand and power tools may be required to complete any repairs to the existing roof substrate.

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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 SEBS+ Roof Coating System.
- B. Mule-Hide requires a moisture scan of the entire roof submitted on Mule-Hide's Moisture Scan Report. This should be followed up with core cuts to confirm the actual condition.
- C. The existing roof assembly must be structurally sound, watertight, dry and free of shrinkage, buckling, unacceptable ponding conditions, encapsulated moisture, open seams, open or damaged flashings, loose terminations or other serious defects. Do not install the SEBS+ Roof System over moisture saturated substrates or insulation.
- D. During the pre-inspection the following items should be reviewed and noted if deficiencies exist:
 - 1. Type and condition of the existing roof system. Following are approved roof system types for consideration of this spec.
 - a. Existing aged (5 years or older) TPO and Hypalon single-ply membranes.
 - b. Existing, aged (3 years or older) smooth BUR or Mod Bit or granulated Mod Bit.
 - 2. Roof surfaces which have been coated with the following coatings/treatments are not eligible for consideration for warranty by Mule-Hide.
 - a. Emulsion, Acrylic, Silicone, Aluminum, or Epoxy coatings.
 - b. Roofs with aluminum coating may be considered only if all of the aluminum coating is removed, and adhesion tests performed and passed after removal. If the adhesion tests fail, the roof is not acceptable to install the SEBS+ Roof Coating System.
 - 3. If the existing roof system is a PVC, EPDM, gravel surfaced or coal tar pitch BUR membrane, it is **not** an acceptable substrate for this system.
 - 4. Condition and deficiencies in the parapet and curb flashings, penetrations, drainage system, and terminations of the existing roof system.
 - 5. Buildup of debris or vegetation.
 - 6. Insect or animal damage.
 - 7. Evidence of ponding.
 - 8. Evidence of building movement.
 - 9. Determination of any leak sources.
 - 10. Surface contaminants on surfaces left in place that could affect the adhesion of the new materials.
- E. Adhesion Tests
 - 1. The decision to perform adhesion tests should be determined at the time of the pre-inspection. Any existing 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 membrane roof, they are required when the roofs 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:
 - 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 SEBS Primer
 - a. Thoroughly clean an area a minimum of 12" square (12" by 12").

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- b. Pre-cut several strips of polyester reinforcing fabric 2" wide and 8" to 10" long.
 - c. Brush apply a coat of the SEBS+ Roof Coating at an application rate of 1.25 gallons per 100 square feet (20 wet mils/9 dry 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 the coating to ensure complete embedment and leaving no voids, air pockets or wrinkles.
 - e. Allow the SEBS+ Roof Coating Coat to dry about one hour. Apply a second coat of the SEBS+ Roof 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 surface, the test is a "pass". If the SEBS+ Roof Coating separates from the roof surface, the test is a "fail".
4. Performing adhesion tests with the SEBS Primer
 - a. Brush apply a coat of the SEBS Primer at an application rate of 1.25 gallon per 100 square feet (20 wet mils/8 dry mils) approximately 8" wide by 8" long.
 - c. Immediately embed the polyester reinforcing fabric strip into the primer centering it in the primer but leaving about 3" – 4" of the strip laying loose past the edge of the primer. Do not embed the entire length into the primer. Dry brush the fabric into the primer to ensure complete embedment and leaving no voids, air pockets or wrinkles.
 - d. Allow the SEBS Primer to dry about 1 hour. Apply a second coat of the SEBS Primer at the same application rate as the first coat.
 - e. Repeat this procedure for each adhesion test.
 - f. Allow the SEBS Primer to dry a minimum of 4 to 5 days before conducting the tests.
 - g. When conducting the test, lift the loose fabric and pull slowly straight up. If the fabric separates from the primer, leaving the primer still adhered to the roof membrane, the test is a "pass". If the primer separates from the roof surface, the test is a "fail".
 5. If adhesion tests only pass with the use of the primer, the entire roof surface must be primed.
 6. If any tests fail, contact Mule-Hide Technical Department to discuss further options/remedies.
 7. Adhesion test failures may disqualify the roof as acceptable for application of the SEBS+ Roof Coating System. Contact Mule-Hide Technical Department related to failed adhesion tests.
 8. 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 initial 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 shrinkage, buckling, unacceptable ponding conditions, encapsulated moisture, open seams, open or damaged flashings, loose terminations or other serious defects. Do not install the SEBS+ Roof Coating System over any saturated substrates or insulation.
- C. Defects and leaks shall be remedied prior to the installation of the SEBS+ Roof Coating System. Follow the original manufacturer's repair methods, refer to the NRCA Repair Manual for Low-Slope Membrane Roof Systems for individual condition repairs of defects or contact Mule-Hide

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Technical Department for recommendations. New asphalt or flashing cement must cure for a min 30-days.

- D. No areas shall retain water more than 48 hours or at a depth exceeding 1/4" at any time. Drains must be installed as to allow positive drainage of the roof surface. Retained water may not cover more than 5% of the roof surface. Areas of ponding (must evaporate within 48 hours as defined by NRCA) may be eliminated by filling with insulation and installing new materials similar to the existing roof system before installing the SEBS+ Roof Coating System if it is not possible to install drains.
- E. 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.
- F. Existing insulation, membrane and all fasteners shall be inspected for insulation damage, membrane damage and fastener back out. Should any of these conditions exist, contact Mule-Hide Technical Department to determine a proper repair procedure.
- G. Existing flashings shall be properly terminated per NRCA and Mule-Hide guidelines. Defective terminations shall be remedied. Damaged flashings shall be replaced prior to installation of the SEBS+ Roof Coating System.
- H. Any wet insulation must be removed and replaced with similar new insulation and new similar materials installed in the same manner as original membrane removed. Mule-Hide recommends following NRCA published guidelines for completing repairs and replacement of any area containing damaged or wet insulation or substrate. Depending on the extent of wet insulation, a complete replacement of the existing roof system may be required. Mule-Hide requires moisture scans be completed followed with core cuts to confirm the condition of the insulation and substrate.
- I. The existing roof system should be tested to ensure the roof assembly is 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 or leaking materials and verify the existing roof system is leak free prior to installing the SEBS+ Roof Coating System.
- J. If the existing roof surface has been previously coated, adhesion tests must be performed. See section 3.1.E Adhesion Tests.

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 contaminants from the roof surface prior to cleaning. Any roof surface that has been coated with aluminum coating must have the aluminum coating removed from the surface.
- B. Aged Built-Up Roof Membranes and Modified Bitumen (Smooth or Granulated)
 - 1. Remove all loose and poorly embedded granules by use of a wet vacuum (preferred method), power broom, hand broom, power vacuum, and/or other suitable means. If using power or hand brooms, a vacuum of the roof surface is required after brooming to remove any remaining loose dust, dirt or debris
 - 2. Remove all wet insulation under existing roof membranes. Clean and dry the area and install new, similar, compatible insulation, or apply polyurethane foam insulation to the level of the adjacent existing membrane.
 - 3. Roofs with aluminum coating may be considered only if all of the aluminum coating is removed, and adhesion tests performed and passed after removal. If the adhesion tests fail, the roof is not acceptable to install the SEBS+ Roof Coating System.
 - 4. Repair all BUR and Modified Bitumen roof membrane defects, such as blisters, ridges, splits, punctures, open seams and felt delamination, by cutting, removing, nailing or properly adhering new material to form a solid substrate. BUR repairs shall be made using hot process BUR or modified bitumen products. Modified Bitumen repairs shall be made with

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- Modified Bitumen products. Cutback products shall not be used. Ensure the adjoining roof materials around these defects are clean and dry. New asphalt or flashing cement must cure for a min 30-days.
5. Evaluate the existing roof system as to its resistance to wind uplift and ensure methods are taken to meet code or other mandated wind uplift criteria.
- C. Aged (5 years or older) TPO or Hypalon membranes
1. Remove all wet insulation under existing roof membrane. Clean and dry the area and install new similar compatible insulation to the level of the adjacent existing membrane.
 2. Remove all loose or damaged roof membrane and replace with new similar products properly adhering to form a solid substrate. Make sure the adjoining roofing materials around these defects are dry and clean.
- D. 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 0.25 to 0.50 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. Agitate roof surface with stiff bristle broom or orbital scrubber. Do not walk on sloped roofs where the 115 Cleaner has been applied as the surface may be slippery until thoroughly rinsed clean.
- 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 with the Mule-Hide 115 Cleaner.
- 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 flashings, vents or other metal components, if found to be damaged, weakened or corroded to the point of compromising the roof system, must be replaced.
- H. While the SEBS+ Roof Coating System is resistant to staining from light rust, those metal components showing areas of solid or significant rust must be primed with the SEBS Primer. When using SEBS Primer, allow 4 – 6 hours drying time prior to application of the SEBS+ Roof Coating.
- I. Areas of residual light ponding water (as defined in 3.2.D) must be reinforced with polyester reinforcing fabric. Apply the SEBS+ Roof Coating at the application rate of 1.5 gallons (24 wet mils/10 dry mils) per 100 square feet and immediately embed the fabric. Dry brush the fabric smooth. Allow approximately 1 hour of drying time. Apply an additional 1.5 gallons (24 wet mils/10 dry mils) per 100 square feet and allow to dry until the next day (minimum of 12 hours). After drying, the application of the SEBS+ Roof Coating over the roof surface may begin.

3.4 Application

- A. Seams and Flashings
1. All membrane field seams shall be checked. Open seams shall be repaired following the NRCA Repair Manual and Mule-Hide standard details. Upon completion of repairs, all seams shall be sealed with Mule-Hide SEBS Seam Sealer applied at a thickness of 1/8" and extended a minimum of 1" to either side of seam. Allow the SEBS Seam Sealer to dry until the next morning (minimum of 12 hours) prior to applying the SEBS+ Roof Coating.
- B. Flashings and Penetrations
1. Flashings are sealed using Mule-Hide SEBS+ 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.

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2. Flashings and penetrations that cannot be sealed utilizing polyester reinforcing fabric due to their shape or location shall be coated with just the SEBS Seam Sealer. Apply with a brush or trowel 1/8" thick to 1/4" thick and taper all edges. Allow to dry until the next day (minimum of 12 hours) prior to applying the Mule-Hide SEBS+ Roof Coating.
 3. All flashings and details shall be completed prior to the installation of the Mule-Hide SEBS+ Roof Coating.
- C. SEBS+ Roof Coating Application
1. Make sure all roof surfaces to receive the roof coating, are clean, free of any contamination or debris and are dry. Make sure all prep work is completed and dry prior to starting coating of the roof surface.
 2. Thoroughly stir all containers of Mule-Hide SEBS+ Roof Coating prior to application. Do not thin this product. Do not apply this product over damp or wet surfaces.
 3. Mule-Hide requires a minimum application of two coats of the SEBS+ Roof Coating either by spraying or by rolling.
 4. Apply the first coat of the Mule-Hide SEBS+ Roof Coating at the application rate as determined by the warranty requirements. See Section 1.10 Warranties for applicable rates. 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. Allow coating to dry. Typical drying time between coats at recommended installation temperature range is 2 to 4 hours.
 5. Apply the second coat of the SEBS+ Roof Coating at the same application rate as the first coat. The second coat of the SEBS+ Roof Coating should be applied perpendicular (90 degrees) to the direction the first coat was applied. 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. Protect unintended surfaces from overspray. Each coat should be applied perpendicular (90 degrees) to the direction the previous coat was applied. 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 during installation to confirm application rates.
 8. See Section 1.10 for information on wet/dry film thickness requirements for the various warranties available from Mule-Hide.
 9. Maximum drying time between coats for any of the components listed shall not exceed 72 hours. Products left exposed longer than 72 hours may require cleaning before applying the next coating

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 SEBS+ Roof Coating System it is the Contractor's responsibility to include material calculations for waste.

END OF SECTION