



SUMMARY SPECIFICATION

TPO – BALLASTED ROOFING SYSTEM

This Summary Specification is a brief overview of Mule-Hide Product's specification and requirements for a Ballasted Mule-Hide Reinforced TPO Roofing System and is intended for use as a submittal in a bid package. Specifier's and Mule-Hide Warranty Eligible Applicators must comply with Mule-Hide Product's specifications and requirements prior to design or bid.

Part 1 General

1.01 Description

The Mule-Hide Ballasted Reinforced TPO Roofing System utilizes a (maximum) 12' wide, scrim reinforced Mule-Hide TPO membrane in thickness of 45, 60, or 80 mil. Approved insulation is loosely laid to the substrate, and the TPO membrane is loosely laid over the insulation. The entire roof assembly is then covered with rock ballast, pavers, or a combination of both. The adjoining sheets are overlapped approximately 3" and seamed together with a min 2" wide heat weld.

1.02 Quality Assurance

- A. The roofing system must be installed by a Mule-Hide Warranty Eligible Applicator in accordance with installation guidelines and detail drawings as approved by Mule-Hide. Prior written approval from the Mule-Hide Warranty Department is required for all deviations from Mule-Hide's published specifications and details.
- B. Projects requesting a Labor and Material Warranty will be inspected by a Mule-Hide Representative to verify that Mule-Hide's installation and material requirements have been met.
- C. Mule-Hide roofing systems offer a variety of Underwriters Laboratories (UL), Factory Mutual (FM) and other ratings. Consult the appropriate approval guides and Mule-Hide Products for specific code approvals.

1.03 Submittals

- A. To ensure compliance with Mule-Hide's warranty requirements contact the Mule-Hide Warranty Department if any of the following conditions exist.
 1. Specified wind speed warranty greater than 55 MPH.
 2. Building height is greater than 60'
 3. Projects located in coastal or high wind zones.
 4. Pressurized buildings
 5. Cold Storage or Freezer Buildings
 6. Membrane exposed to chemicals

- B. Submit a completed Warranty Application form to Mule-Hide prior to bidding. Also include fastener pullout testing results as required for non-standard substrates.
- C. All projects must have a Mule-Hide warranty application number assigned prior to inspection.

1.04 Product Delivery, Storage, and Handling

- A. Deliver materials to the job site in original, unopened containers, with the manufacturer's name, brand name and installation instructions.
- B. Store all materials in a dry, clean area protected from the elements, as per manufacturer's recommendations.

1.05 Job Conditions

- A. All existing wet or damaged roofing materials must be removed and replaced with new materials.
- B. All existing phenolic insulation and sprayed-in-place urethane roofs must be removed.
- C. The specifier must determine the use and placement of vapor retarders. Consult ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) publications.
- D. Coordinate work between all trades to avoid traffic over completed sections of roofing.

1.06 Warranty.

Fees are required for all Labor and Material (System) Warranties. System Warranties must be obtained through a Mule-Hide Warranty Eligible Applicator. All projects requesting a System Warranty must be inspected by a Mule-Hide Representative. Components of the roofing system must be supplied by Mule-Hide. Warranty covers only Mule-Hide supplied materials. Sample warranties are available upon request. Contact Mule-Hide Warranty Department for warranty requirements.

Part 2 Products

2.01 General

- A. The components of this roofing system are to be manufactured, supplied, or approved in writing by Mule-Hide Products.

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2.02 Membrane

Mule-Hide White, Gray, or Tan, reinforced 45, 60, or 80-mil thick Thermoplastic Polyolefin (TPO) membrane is used for this system. The membrane is available in a variety of widths up to 12' and in lengths of 100'. Refer to our Product Data Sheet for physical properties and other information.

2.03 Related Materials

Mule-Hide products include: Reinforced and Non-Reinforced Flashings, Bonding Adhesives, TPO Cut-Edge Sealant, TPO Coated Metal, Membrane fasteners and discs, Thermoplastic One-Part Pourable Sealer, All-Purpose Bar, TPO Walkway Roll, Universal Single Ply Sealant, and other components.

Part 3 Execution

3.01 General

- A. Work should begin at the highest point of the roof level and proceed to the lowest point. Work should be completed on a daily bases including flashings, terminations, and daily seals.
- B. Prepare the existing roof deck or substrate according to Mule-Hide design guides and full-system specifications prior to applying the new roofing system.

3.02 Roof Deck Criteria

- A. A proper substrate shall be provided by the building owner. The structure shall be able to withstand normal construction loads and live loads.
- B. Substrate must allow for drainage so that all water is removed within 48 hours after a rain.
- C. Roof deck must be capable of supporting a ballasted roofing system.

3.03 Substrate Preparation

- A. Re-cover projects - All wet or damaged materials must be removed and replaced with new materials.
- B. Substrate must be clean, level, and smooth so that the insulation lays flat. Fresh applications of bitumen based roof cement must be removed or covered.

3.04 Installation

Refer to the applicable Product Data Sheets and Safety Data Sheets for cautions and warnings.

A. Insulation Attachment

Roof insulation is loosely laid in place over existing substrate.

B. Membrane Installation and Hot Air Welding

Place membrane over substrate with minimum 3" overlap at lap seams and positioned so that laps will shed water. Allow membrane to relax. Hot-air weld seams with automatic welder to achieve a minimum 2" wide heat weld. Hand welded field seams are not allowed. Ballast membrane with washed river rock at a minimum rate of 10 lbs per square foot or concrete pavers at a minimum rate of 22 lbs per square foot.

C. Additional Membrane Securement

The membrane must be secured at the perimeter of each individual roof area, projection, and any angle change that exceeds 2" per lineal foot. Consult Mule-Hide's published detail drawings.

D. Membrane Flashing

All existing base flashings are to be removed or covered with a suitable material. Install new membrane flashings as per manufacturer's details and guidelines. Flashings must be terminated along top edge as per appropriate Mule-Hide detail.

E. Other Related Work

1. Walkways should be provided in areas where regular rooftop traffic is expected. Walkways are considered a maintenance item and are excluded from the Mule-Hide warranty.
2. Mule-Hide TPO Walkway Rolls are to be installed over clean, dry surfaces, with a minimum 6" spacing over field seams. Hot air weld the perimeter of the Walkway Roll to the field membrane.
3. Concrete pavers may be used if installed over one layer of HP Protection Mat.
4. Copings, counter flashing and other metal work shall be fastened to resist wind uplift and prevent buckling. Metal should be sealed to prevent moisture infiltration.

This summary specification represents the applicable information available at time of publication. Mule-Hide reserves the right to change this information at any time. Contact Mule-Hide Products or visit our website at www.mulehide.com for the latest updates, changes, or modifications to this summary specification.