

10 or 15 Year Warranty Design Summary

"The name trusted in roofing since 1906"



TPO Fleece Back- Fully Adhered

Revision Date: May 13, 2019

All products specified for this roofing system must be manufactured or approved by Mule-Hide Products Co. This criteria is limited to buildings of 100' in height or less, located in urban or suburban exposure areas. Not applicable for coastal or high wind areas.

Membrane / Adhesive Type / Other

- 0.045" or 0.060" or 0.080" thick Mule-Hide Reinforced TPO Fleece Back
- Mule-Hide Helix® Max Low-Rise Adhesives, Aqua Base 120 Bonding Adhesive.
- 45-mil membrane, crease all 'T' joints as shown in Detail MHT-UN-105A.
- 60-mil or 80-mil membrane, overlay all "T" joints with TPO Non-Reinforced Flashing Membrane with heat welded seams as shown in Detail MHT-UN-105B.
- All Field/Wall seam transitions on all membrane thicknesses must be overlaid with TPO Non-Reinforced Flashing Membrane with heat welded seams as shown in Detail MHT-UN-105C.
- All End Laps must be stripped in with 6" wide reinforced TPO. See Detail MHT-UN-104E.
- Base flashing can be flashed with Standard (non-fleece back) membrane.
- All field seams must be heat welded.

Deck Type / Typical Fastener - Refer to Specifications for minimum pullout criteria.

Standard Roof Deck (4)	Insulation Fastener (1)	Insulation Plate (5)
Steel (22 gauge or heavier)	Mule-Hide DP (#12)	Mule-Hide 3" Metal Stress Plates
Structural Concrete (3,000 psi)	Mule-Hide HDP (#14) (2)	Mule-Hide 3" Metal Stress Plates
Plywood (Min 15/32" thick)	Mule-Hide DP (#12)	Mule-Hide 3" Metal Stress Plates
Wood Plank (Min 1-1/2" thick)	Mule-Hide DP (#12)	Mule-Hide 3" Metal Stress Plates
Fibrous Cement & Gypsum (2)(3)	TL Fasteners by Tru-Fast	3" TL Galvalume Insulation Plate by Tru-Fast

Notes:

- Heavier gauge fasteners may be required to meet Factory Mutual or code requirements.
- Other fasteners may be considered, submit request to Mule-Hide prior to bidding.
- Pullout testing is required, must exceed 300 pounds with TL Fastener.
- Contact Mule-Hide Technical Department for other roof decks or non-standard roof decks.
- 2.4" Seam Plates are NOT approved for use to fasten insulation.

Slope Requirement/Drainage

- Positive drainage required (no ponding 48 hours after a rain)
- 1/4" per horizontal foot preferred
- 1/8" slope with sufficient number of drains and crickets/saddles may be considered

Construction Type

- New Construction
- Reroof – Full tear off of existing roofing down to deck
- Recover – Over existing roofing system or existing insulation (all wet materials removed)

Insulation/Overlayment - Mechanical Attachment into Standard Roof Decks*

Insulation Type or Overlay	Fasteners per 4' x 8' board		
	Field	Perimeter	Corner
Approved Polyisocyanurate - Min 2" thick (top layer)	8	12	16
Approved Polyisocyanurate - Min 1.5" up to 2" thick	12	18	24
HD Fiberboard - Min 1/2" thick- Installed over Approved Insulation	16	24	32
Dens Deck Prime - Min 1/4" thick - Installed over Approved Insulation	12	18	24
OSB - Min 7/16" thick - Installed over Approved Insulation	17	25	32
Approved OSB/Polyisocyanurate Composite - Min 2" thick	17	25	32

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TPO – FULLY ADHERED

*NOTES:

1. Thicknesses stated are for single layer of material.
2. Consult Specification Manual for list of approved insulations for use under overlayment.
3. Polyisocyanurate less than 1.5" in thickness requires approved overlayment.
4. Insulation fastening density shall not be less than 1 per 2 square feet on fibrous cement and gypsum decks.
5. Certain codes may require additional fastening requirements.
6. Mule-Hide defines perimeter areas as a minimum of 8 feet. Corners areas are the intersections of the perimeter areas.
7. Factory Mutual defines perimeter areas as the lesser of 0.1 times the building width or 0.4 times the building height. Corners areas are the intersections of the perimeter areas.
8. System warranties require the use of Mule-Hide labeled components, products supplied by Mule-Hide or approved in writing by Mule-Hide prior to the start of the project.

Insulation/Overlayment - Adhesive Attachment

1. **Mule-Hide Helix® Max Low-Rise Adhesives.** Refer to the specifications and appropriate Helix® Max Product Data Sheet for acceptable insulations, substrates, and bead spacing.

Metal Accessories

1. All Metal copings, gravel stops, fascia, and drip aprons must be installed according to Mule-Hide approved details.
2. Conventional metal edge details that require flanges to be 'stripped in' may use TPO Cover Tape or White EPDM Cured Cover Tape (Mate-Line Tape).
3. All Metal Scuppers must have welded (soldered) seams.
4. Metal accessories provided by Mule-Hide will be included in System warranties.

Other Requirements

1. No 'As-Built' projects. All projects are to be reviewed and approved prior to installation.
2. Shop drawings must include all pertinent details.
3. Contact Mule-Hide Technical Department for specific code requirements such as Florida NOA, Factory Mutual (FM) or Underwriters Laboratory (UL).

NOTES:

1. **This is a summary of the Mule-Hide TPO Fleece Back Fully Adhered System Specification, as written in the Mule-Hide TPO Specification Manual. Refer to Mule-Hide TPO Specification Manual for complete specification and details.**
2. **The information contained in this document is general information. Requirements may be different for each specific job based on the conditions of each building. Always contact Mule-Hide Technical Department to review the specific job conditions prior to bidding the project.**