

30-Year Warranty Design Enhancements

"The name trusted in roofing since 1906"



TPO Fleece Back – Fully Adhered

Revision Date: May - 2021

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.

Membrane / Adhesive Type / Other

1. 0.080" thick Mule-Hide TPO Fleece Back Reinforced Membranes.
2. Mule-Hide Helix® Max Low-Rise Adhesive
3. The use of Mule-Hide factory Fabricated accessories is required
4. All 'T' joints overlaid with TPO Non-Reinforced Flashing Membrane with heat welded seams. See detail MHT-UN-105B
5. Field/Wall seam transitions must be overlaid with TPO Non-Reinforced Flashing Membrane with heat welded seams. See detail MHT-UN-105C
6. All End Laps must be stripped in with 6" wide reinforced TPO. See Detail MHT-UN-104E.
7. Base flashing can be flashed with Standard (non-fleece back) 60-mil membrane.
7. All field seams must be heat welded.

Deck Type / Typical Fastener – Contact Mule-Hide Technical Department for minimum pullout criteria

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

NOTES:

1. Heavier gauge fasteners may be required for Factory Mutual, code, or wind warranties.
2. Other fasteners may be considered, submit request to Mule-Hide prior to bidding.
3. Requires fastener pull test.
4. Contact Mule-Hide Technical Department for other roof decks or non-standard roof decks.
5. 2.4" Seam Plates are NOT approved for use to fasten insulation.

Slope Requirement/Drainage

1. Positive drainage required (no ponding 48 hours after a rain)
2. 1/4" per horizontal foot preferred
3. 1/8" slope with sufficient number of drains and crickets/saddles may be considered

Construction Type

1. New Construction
2. Reroof - All existing roofing materials removed
3. Recover – Contact Mule-Hide Technical Department

Insulation Type or Overlay – Mechanical Attachment*	Fasteners per 4' x 8' board		
	Field	Perimeter	Corner
Approved Polyisocyanurate - Min 2" thick (top layer) - Min 20 psi	8	12	16
Approved Polyisocyanurate - Min 1.5" up to 2" thick - Min 20 psi ³	12	18	24
High Density Polyisocyanurate ⁶ – 1/2" thick – Over Approved Insulation ²	16	24	32
HD Fiberboard - Min 1/2" thick- Installed over Approved Insulation ²	16	24	32
Dens Deck Prime - Min 1/4" - Installed over Approved Insulation ²	12	18	24
OSB - Min 7/16" thick - Installed over Approved Insulation ²	17	25	32
Approved OSB/Polyisocyanurate Composite - Min 2" thick	17	25	32

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*NOTES:

1. Gypsum board or suitable base sheet may be approved as needed to meet required fire code.
2. Consult Specification Manual for list of approved insulations for use under overlayment.
3. Contact Mule-Hide Technical Department for Polyisocyanurate less than 1.5" in thickness.
4. Certain codes may require additional fastening requirements.
5. 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.
6. Minimum 80 psi compressive strength

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, insulation thicknesses, substrates, and bead spacing.

Metal Accessories

1. For Warranted Wind Speeds of 55-MPH, all metal copings, gravel stops, fascia, and drip aprons must be either Mule-Hide pre-manufactured Edge Metal, or constructed with TPO Coated Metal with continuous clips as per approved Mule-Hide details.
2. Mule-Hide All Purpose Bar is required when a compression bar termination is specified and must be utilized in conjunction with a counterflashing.
3. For Warranted Winds Speeds greater than 55-MPH, Mule-Hide pre-manufactured Metal Edge must be used.
4. Conventional metal edge details that require flanges to be 'stripped in' with TPO Cover Tape are NOT ALLOWED. In these cases use either TPO Coated Metal details with heat welded TPO membrane stripping or our Mule-Hide pre-manufactured Metal Edge.
5. All metal scuppers must have welded (soldered) seams and continuous flange. Pre-fabricated scuppers are strongly recommended.

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 Factory Mutual (FM) or Underwriters Laboratory (UL).

Warranty Wind Speed (Maximum Peak Gusts)

Wind speed coverage for a specific project will vary depending on a variety of factors, including the deck type, insulation type, fastening density, building location, height of the roof, and edge details.

Contact Mule-Hide Technical Department for specific requirements.

NOTES:

1. **These are enhancements to the Mule-Hide TPO Fully Adhered Fleece Back System Specification, as written in the Mule-Hide TPO Specification Manual. Refer to the 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.**