

# 20-Year Warranty Design Enhancements

"The name trusted in roofing since 1906"



## TPO – Mechanically Attached

Revision Date: May 3, 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 50' in height or less, located in urban or suburban exposure areas. Not applicable for coastal or high wind areas.

### Membrane / Adhesive Type / Other

1. 0.060" or 0.080" thick Mule-Hide TPO Reinforced Membranes.
2. All 'T' joints overlaid with TPO Non-Reinforced Flashing Membrane with heat welded seams. See detail MHT-UN-105B
3. Field/Wall seam transitions must be overlaid with TPO Non-Reinforced Flashing Membrane with heat welded seams. See detail MHT-UN-105C
4. All field seams must be heat welded.

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

Roof Deck	Roof Height	Max Sheet Width	Max Fastener Spacing	Fastener (1) (2)	Seam Plate (4)
Steel - Min 22 ga.	Up to 60'	12'	6" OC	HDP (#14)	2.4"
		10' or 8'	12" OC		
	61' to 100'	12', 10' or 8'	6" OC		
Metal Panel Roofs, steel < 22 ga.	Contact Mule-Hide Technical Department prior to starting work. (system may not qualify for warranty)				
Wood Plank - Min 2x or Plywood - Min 23/32"	Up to 60'	12'	6" OC	HDP (#14)	2.4"
		10' or 8'	12" OC		
	61' to 100'	12' or 10'	6" OC		
Plywood - Min 19/32"	Up to 60'	8'	12" OC	HDP (#14)	2.4"
		10' or 8'	12" OC		
	61' to 100'	10'	6" OC		
1X Plank or Plywood – Min 15/32"	Up to 60'	8'	12" OC	HDP (#14)	2.4"
		10'	6" OC		
	61' to 100'	8'	6" OC		
OSB	Contact Mule-Hide Technical Department prior to starting work. (system may not qualify for warranty)				
Structural Concrete - Min 2,500 psi	Up to 60'	12', 10' or 8'	12" OC	HDP (#14)	2.4"
		12' or 10'	6" OC		
	61' to 100'	8'	12" OC		
Other deck types	Contact Mule-Hide Technical Department prior to starting work. (system may not qualify for warranty)				

### Notes:

1. Heavier gauge fasteners may be required to meet Factory Mutual or code requirements.
2. Other fasteners may be considered, submit request to Mule-Hide prior to bidding.
3. Mechanically attached systems are not allowed over non-standard decks without prior approval by the Mule-Hide Technical Department. Mule-Hide will not issue system warranties on "As-Built" projects where Mule-Hide did not grant approval prior to job start.
4. 3" Insulation Plates are NOT approved for use to fasten membrane.

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### 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 – Full tear off of existing roofing down to deck
3. Recover – Over existing roofing system or existing insulation (all wet materials removed and verification by a Independent 3rd party moisture scan)

### Insulation/Overlayment - Mechanical Attachment\*

Insulation Type or Overlay	Board Size	
	4' x 4'	4' x 8'
Approved Polyisocyanurate - Min 1.0" thick (top layer) - Min 20 psi	4	6
Approved Polyisocyanurate - Min 2.0" thick (top layer) - Min 20 psi	4	5
Extruded Polystyrene - Min 1.0" thick - Min 25 psi	4	6
HD Fiberboard - Min 1/2" thick- Installed over Approved Insulation	4	6
Dens Deck Prime - Min 1/4" thick - Installed over Approved Insulation	4	6

#### \*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.

### 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' must use TPO Cover Tape or White EPDM Cured Cover Tape (Mate-Line Tape).
3. All Metal Scuppers must have welded (soldered) seams with a continuous flange. See detail MHT-UN-220B.
4. Metal accessories provided by Mule-Hide will be included in System warranties.

### Other Requirements

1. No 'As-Built'. 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).

### Perimeter Enhancement Widths - Number Required

Building Height	Perimeter Sheets
0 to 34 feet	Minimum of one (1) perimeter enhancement width
35 to 69 feet	Minimum of two (2) perimeter enhancement widths
70 to 100 feet	Minimum of two (2) perimeter enhancement widths (wind zones up to 80 mph)
70 to 100 feet	Contact Mule-Hide Technical Department for wind zones over 80 MPH
Over 100 feet	Contact Mule-Hide Technical Department

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### Perimeter Enhancement – Width Dimension

Width of Field Sheet	Width of Perimeter Enhancement		
	Half Sheets	10" RUSS	Plates/Fasteners Through Membrane
8'	4'	4'	4'
10'	6'	5'	5'
12'	6'	6'	6'

### Warranty Wind Speed (Maximum Peak Gusts)

Wind speed coverage for a specific project will vary depending on the deck type, fastening density, location and height of the roof. Certain codes may require additional fastening requirements.

**Contact Mule-Hide Technical Department for specific requirements such as sheet width and fastener spacing.**

### NOTES:

1. These are enhancements to the Mule-Hide TPO Mechanically Attached 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 the project.