

Bulletin Number: T24-005

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*UPDATE: This bulletin is an update to previously issued bulletin T24-003: Minimum Required Fastening Patterns for Insulation Boards with Glass-Reinforced Facers under Mechanically Fastened Membranes, reflecting fastening requirements outlined in JM Technical Resource RS-9403 Minimum Board Attachment Patterns. Highlighted items reflect updates made. Please contact JM Technical Services if you have any questions.

Minimum Fastening Requirements – Attached Membrane

To Qualify for a 55 mph JM Peak Advantage® Guarantee (max. 20 year term)

The following requirements represent the minimum fastener and plate attachment criteria to qualify for a 55 mph JM Peak Advantage Guarantee up to a 20 year term. This information does not represent compliance with applicable building codes, FM requirements, or Guarantees above 55 mph and/or greater than 20 years. *For compliance with specific wind uplift criteria and systems beyond a standard 20 year Peak Advantage Guarantee, please contact JM Technical Services at 1-800-922-5922 Option 3.*

The following conditions apply to the Minimum Fastening Rates listed below for RhinoPlate® System and Mechanically Fastened Single Ply Membrane assemblies:

1. These attachment rates apply with the following deck types: min. 22 ga steel, structural concrete, and min. 5/8" plywood or wood plank. *Contact JM Technical Services for fastening rates into decks not listed.*
2. Fastener type is dependent upon deck type. Membrane attachment to steel decks requires the use of JM High Load #15 Fasteners. Membrane attachment to structural concrete decks requires the use of JM All Purpose #14 Fasteners. Membrane attachment to wood decks requires the use of JM High Load #15 Fasteners; All Purpose #14 Fasteners may also be acceptable for use in wood if pull-out values are greater than #15 fasteners.
3. **Enhancements for perimeter and corner attachment are required for all mechanically fastened single-ply membrane systems. Perimeter and Corner Dimensions are defined as follows:**

Perimeter and corner dimensions for buildings less than 60 ft. in height:

Equal to the lesser of:

- 0.1 times the building lesser plan dimension (overall length or width), or
- 0.4 times the eave height

but will never measure less than 0.04 times the building lesser plan dimension and never less than 3 ft.

Perimeter and corner dimensions for buildings greater than 60 ft. in height:

Equal to 0.1 times the building lesser plan dimension (overall length or width), but never less than 3 ft.

Corners are "L" shaped with legs twice the width of the perimeter.

4. Single ply membrane fastening patterns outlining required enhancements at perimeters and corners are available at www.jm.com/roofing. "Picture Framing" is acceptable for 55 mph JM Guarantee up to 20 years; see JM fastening pattern TM-12-PF.

Insulation Fastening Requirements - Mechanically Fastened Membrane

See [RS-9403 Minimum Board Attachment Patterns](#)

Mechanically Fastened Single Ply Membrane Minimum Requirements^{1,2,3,4}

| Membrane Type | Sheet Width | Fastener Spacing | Plate Type |
|---------------|----------------------------|--------------------------------|---|
| TPO | Max. 12' | 12" O.C. (select wind regions) | High Load Plates, TPO RhinoPlates® |
| TPO | Max. 10' | 12" O.C. | High Load Plates, TPO RhinoPlates® |
| PVC | Max. 12' | 12" O.C. (select wind regions) | High Load Plates, PVC RhinoPlates® |
| PVC | Max. 10' | 12" O.C. | High Load Plates, PVC RhinoPlates® |
| EPDM | Max. 10' (Reinforced Only) | 12" O.C. | High Load, APB, or Polymer Batten Strip |

TPO and PVC RhinoPlate® System Minimum Fastening Requirements^{1,2,3}

See [RS-9403 Minimum Board Attachment Patterns](#)

The following conditions apply to the Minimum Fastening Rates for Mechanically Fastened Modified Bitumen Polyester Reinforced Base Sheet assemblies:

- These attachment rates apply with the following deck types: min. 22 ga steel, structural concrete, and min. 5/8" plywood or wood plank. Contact JM Technical Services for fastening rates into decks not listed.
- Fastener Type is dependent upon deck type. Membrane attachment to steel decks requires the use of JM High Load #15 Fasteners. Membrane attachment to structural concrete decks requires the use of JM All Purpose #14 Fasteners. Membrane attachment to wood decks requires the use of JM High Load #15 Fasteners; All Purpose #14 Fasteners may also be acceptable for use in wood if pull-out values are greater than #15 fasteners.
- Perimeter and corner enhancements are not required for 55 mph JM Guarantee up to a 20 year term with the rate listed below.

Mechanically Fastened Modified Bitumen Polyester Reinforced Base Sheet Minimum Requirements^{1,2}

| Membrane Type | Fastener Spacing | Plate Type |
|---|------------------|-------------------------|
| DynaLastic® 180 S, DynaLastic® 250 S, DynaFast® 180 S or DynaFast® 250 S DynaFast® 180 HW or DynaFast® 250 HW | 18" O.C. In-Lap | High Load or APB Plates |

The following conditions apply to the Minimum Fastening Rates for Fastened Bituminous Base Sheets Over Nailable Deck assemblies:

- These attachment rates apply with the following deck types: lightweight insulating concrete, cementitious wood fiber, gypsum and wood decks. Contact JM Technical Services for fastening rates into decks not listed.

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- Fastener type is dependent upon deck type. UltraLok® Locking Impact Fastener is acceptable for use in gypsum, lightweight insulating concrete, and cementitious wood fiber decks. Lightweight (LWC) Concrete Base Sheet Fastener is acceptable for use in lightweight insulating concrete and gypsum (1.2" fastener length only) decks.
- Enhancements for perimeter and corner attachment are required for all mechanically fastened base sheet over nailable deck assemblies. Perimeter and Corner Dimensions are defined as follows:**

Perimeter and corner dimensions for buildings less than 60 ft. in height:

Equal to the lesser of:

- 0.1 times the building lesser plan dimension (overall length or width), or
- 0.4 times the eave height

but will never measure less than 0.04 times the building lesser plan dimension and never less than 3 ft.

Perimeter and corner dimensions for buildings greater than 60 ft. in height:

Equal to 0.1 times the building lesser plan dimension (overall length or width), but never less than 3 ft.

Corners are "L" shaped with legs twice the width of the perimeter.

- See JM fastening pattern BM-9,18,18 for required minimum perimeter and corner enhancements.

| Base Sheet Minimum Fastening Requirements | | |
|---|--|---|
| Membrane Type | Fastener Spacing | Fastener/Plate Type |
| Any JM bituminous base sheet | 9" O.C. at laps & 2 equally spaced rows between laps staggered at 18" O.C. | Lightweight Concrete Base Sheet Fasteners, UltraLok™ Locking Impact Fastener, or UltraFast® Fasteners and Plates (Dependent Upon Deck Type) |

The following conditions apply to the Minimum Pullout Resistance:

- The pullout resistance information listed for Adhered Systems, Mechanically Attached Membrane Systems, and Base Sheet Attached with Screws/Plates is applicable to the following deck types: min. 22ga steel, structural concrete, min. 5/8" plywood, and wood plank.
- The pullout resistance information listed for Base Sheet Attached with Nailable Fastener is applicable to the following deck types: lightweight insulating concrete, cementitious wood fiber, and gypsum decks.
- Contact JM Technical Services when minimum pullout requirements are not attained or applicable decking not listed above is encountered.

| Minimum Pullout Resistance | | | |
|----------------------------|--|--|--|
| Adhered Systems | Mechanically Attached Membrane Systems | Base Sheet Attached with Screws/Plates | Base Sheet Attached with Nailable Fastener |
| 300 lbs (136.1 kg) | 400 lbs (181.4 kg) | 300 lbs (36.1 kg) | 40 lbs (18.1 kg) |

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