



Thermoplastic Single Ply and Multi-Ply Roofing Systems

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FLEX THERMOPLASTIC POLYOLEFIN (TPO) ROOF MEMBRANES MECHANICALLY ATTACHED SYSTEMS

GUIDE TO FASTENER AND PLATE PLACEMENTS

This guide is based on current FM Approvals for the field sheet securement criteria. The perimeter and corner enhanced securement must be calculated based on FM Loss Prevention Data Sheets 1-28 and 1-29.

Steel Deck or Structural Concrete

Membrane Type	Row spacing	Fastener Type	Fastener Spacing	Uplift Rating
TPO Plus	42.5"	XHD	12"	105
TPO Plus	42.5"	XHD	6"	165
TPO Plus	91"	XHD	12"	60
TPO Plus	91"	SXHD	12"	90
TPO Plus	91"	XHD	6"	105
TPO Plus	115"	XHD	12"	60
TPO Plus	115"	XHD	12"	75
TPO Plus	115"	SXHD	12"	90
TPO Plus	115"	XHD	6"	105
TPO Plus	115"	XHD	6"	120
TPO Plus	138.5"	XHD	12"	60
TPO Plus	138.5"	SXHD	6"	120

Acceptable steel decks must meet the following minimum requirements. 18, 20 or 22 gauge thickness, 1.5" deep meeting ASTM A1008/A1008M-01a or A653/653M-01a SS Grade 80. Deck installation is to be in accordance with FM requirements. Structural Concrete decks require the use Flex CD-10 or Flex HD 10-14 fasteners with the appropriate Flex seam plate.

Approved Roof Decks

The following roof decks are approved for the installation of Flex TPO Plus mechanically attached roof systems in areas where the average wind speeds are equal to or less than 55 mph and the building does not exceed 50'.

1. Steel Decks 22 gauge or heavier with a minimum pullout resistance of 500 pounds per fastener.
2. Lightweight Insulating Concrete over Steel Deck. The fastener must penetrate the steel deck and have a minimum pullout resistance of 360 pounds per fastener.
3. Structural Concrete minimum compressive strength 3000 psi. minimum pullout resistance of 800 pounds per fastener.
4. Wood Plank (min. ¾"), CDX Plywood (min, 15/32"), OSB (min.7/16) minimum pullout resistance of 360 pounds per fastener.
5. Cementitious Wood Fiber minimum pullout resistance of 300 pounds per fastener.
6. Gypsum minimum pullout resistance of 300 pounds per fastener.

Approve Flex Fastener and Plate is installed in the membrane seam and spaced XHD Fasteners and Plates 6" on center or SXHD Fasteners and Plates 12" on center depending on the project design criteria.

Contact Flex Technical Services for attachment information in areas where the average wind speed is greater than 55 mph and the building exceeds 50'.

Insulation Attachment

Flex requires that approved insulation or cover boards be pre-secured to the deck prior to installing the Flex TPO Plus roof membrane.

1. Polyisocyanurate Roof Insulation Board minimum of 1 ½" thick. Minimum of 5 fasteners and 3" plates per 4' x 8' board.
2. Dens Deck Roof Cover Board. Minimum of 5 fasteners and 3" plates per 4' x 8' board.
3. Polyisocyanurate Roof Insulation Board less than 1 ½" thick or Extruded Polystyrene Roof Insulation Board. Minimum of 6 fasteners and 3" plates per 4' x 8' board.