



TPO Single Ply Roof System

White Thermoplastic Membrane

Product Description:

The TPO Roof Membrane is a white single ply roof membrane which is comprised of an elastomeric thermoplastic polyolefin. TPO Roof Membrane is reinforced with a high strength, wick resistant polyester fabric. TPO Roof Membrane is asbestos free and exceeds the performance requirements of ASTM D 6878/D6878M-11a.

Basic Uses:

TPO Roof Membrane is a thermoplastic polyolefin membrane that accepts roof movement and thermal shock. It can be used in a variety of single ply roof configurations, such as mechanically attached and ballasted. TPO Roof Membrane is lapped and seamed using hot air heat welding equipment. TPO Roof Membrane can be used in situations where other roof systems are not practical. Energy Star qualification is valid for Roofing products in the United States but not in Canada. Natural Resources Canada (NRCAN) has implemented an Energy Star Program which currently does not include roofing products.

Limitations:

- Positive drainage is required.
- The bottom, underside of TPO membrane is not intended for use as exposed side.

Dimensions:

Thickness	Roll Size	Coverage/as applied
• 45 mil	78" x 100'	600 sq. ft.
• 45 mil	10' x 100'	950 sq. ft.
• 60 mil	78" x 100'	600 sq. ft.
• 60 mil	10' x 100'	950 sq. ft.
• 80 mil	78" x 75'	450 sq. ft.
• 80 mil	10" x 75'	700 sq. ft.

Membrane Color: White. (black underside)

Product Advantages	
Features	Benefits
Thermoplastic	• Remains heat weldable through entire life
Polyester reinforcement	• Strong - puncture, tear, and wick resistant
Highly reflective surface	• Reduced roof & building temperature

		Initial	Weathered
	Solar Reflectance	0.79	0.72
	Thermal Emittance	0.87	0.87
	Rated Product ID	0612-0013	
	Licensed Manufacturer ID	0612	
	Classification	Production	
<small>Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.</small>			
<small>Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</small>			

Packaging:

TPO Roof Membrane is available in individual rolls or by the pallet, with 15 rolls/pallet. (10 rolls/pallet for 60 & 80 mil TPO)

References:

Factory Mutual Loss Prevention Data Sheets:

- 1-28 Design Wind Loads
- 1-29 Above Deck Roof Components
- 1-49 Perimeter Flashing

APPLICATION DATA:

Roof Replacement usually involves more complexities than new construction roofing. Contingencies such as rusted or deteriorated decks, rotted wood components, rooftop equipment which cannot be moved or shut down, and numerous other conditions are often encountered. The following application information is designed to serve as a general guide. Your local Tremco Representative will prepare detailed specifications based on the condition of your roof.

Structural Deck:

Deck must be properly designed and structurally sound.

Drainage:

Ponding conditions will adversely affect performance of any roofing system. Where positive drainage does not exist, water removal from roof surface should be facilitated by lowering drains, and/or installing additional drains, tapered insulation, or an approved lightweight insulating concrete slope system.

Insulation:

Insulation must be dry and kept dry. No more insulation shall be installed than can be covered in that day. Use Fas-n-Free® Adhesive for solvent free, fastener free insulation attachment is the preferred method of securement unless otherwise specified.

General Installation Procedures:

According to job specifications, prepare the surface to be covered:

- Remove loose aggregate.
- Replace areas of wet insulation, deteriorated deck and wood components.
- Provide air seal at perimeter, curbs, and penetration flashings.
- Attach new roof insulation according to job specifications.
- Clean insulation surface of loose dust/debris.

Membrane Placement:

Plan the placement of TPO Roof Membrane to facilitate the fabrication of the least number of seams. Ensure that water flows over or along, but not against, the exposed edges.

Installation of Mechanically Attached System:

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Roofing & Weatherproofing Peace of Mind™

- All field sheets incorporate a 6" control line for over lap and fastener placement.
- Start at the low point of the roof and position a half width (39" or 991 mm) roll of TPO Roof Membrane square with the roof edge. Avoid wrinkles. Reposition when necessary.
- Mechanically attach underlying sheet at the lap to the structural deck with fasteners and 2 3/8" (60 mm) diameter barbed membrane plates spaced at 6" (153 mm) on center (or as specified) down the entire lap with the disc centered 1 1/8" (29 mm) from the sheet edge.
- Overlap perimeter sheet at side lap: 4 1/2" (114 mm) minimum.
- Overlap at end lap: 3" (76 mm) minimum.
- The minimum number of half-width rolls required at the perimeter is 2. Determine the perimeter width as described in Section 2.1 (Table 4) of Factory Mutual Loss Prevention Data Sheet 1-28. Consult your Tremco Representative for further information.
- Install the required number of half-width perimeter rolls along the roof edges both parallel and perpendicular to the roll direction in the field of the roof. Overlap perimeter sheets in the corner areas with perimeter fastener rows installed through both membranes in both directions. Install a minimum 6" (150 mm) wide cover strip centered over the fastener rows.

Installation of Adhered System:

- Start at the low point of the roof and position the roll square to the roof edge and fold back. Apply adhesive to both the substrate and the back side of the membrane.
- Allow adhesive to dry to a tacky feel when touched with the back side of a dry finger before bonding membrane to substrate (approximately 5 - 10 minutes).
- Mate the membrane to the substrate avoiding any air entrapment, and apply pressure by means of roller to ensure complete bonding. Do not allow adhesive to contaminate TPO membrane and flashing lap areas.

Cold Applied Adhesive Coverage Rate:

- 200 - 240 square feet per gallon, per side, sufficient to bond 100 - 120 square feet of membrane in place.
- Apply adhesive to both substrate and back side of membrane.
- Install membrane when adhesive is dry to a tacky feel (approximately 5 - 10 minutes). Avoid any air entrapment.

Installation of Ballasted System:

- Mechanically attach the membrane in the perimeter areas, using the required number of half width rolls, as described above in Installation of Mechanically Attached System.
- Unless otherwise specified, minimum ballast coverage is 1000 lbs/sq using ASTM D 448-98, number 4, 3/4" - 1 1/2" (19 mm - 28 mm). Gravel ballast shall be smooth, water worn, with rounded edges and corners.
- During installation of ballast, do not create piles on the roof deck.

Membrane Seaming:

- All surfaces must be clean and dry.
- For heat welding, allow the hot air welder to warm up. Insert the nozzle tip of the hot air welder into seam area. Move nozzle at a steady speed along the seam area, immediately applying pressure behind the air nozzle with a Neoprene roller or weighter wheel to ensure positive contact of heated TPO Roof Membrane lap. Minimum width of all welded lap shall be 1.5" (38.1 mm) when using an automatic welder.
- Field test heat welded laps to assure proper construction. Perform field test after lap area cools to ambient temperatures. Properly constructed laps will not separate

Physical Performance Characteristics

TPO Single Ply Roof System

Property	Test Method	Value
Thickness	0.045 in (1.14 mm)	ASTM D 751-00
	0.060 in (1.52 mm)	
	0.080 in (2.03 mm)	
Tensile strength	350 lbf (1556)N	ASTM D 751-00
Elongation @ fabric break	25% MD 25% XMD	ASTM D 751-00
Tear Strength	90 lbf (400)N	ASTM D 751-00
Dimensional stability	0.7%	ASTM D 1204
Low Temperature flexibility -40°F (-40°C)	Pass	ASTM D 2137
Reflectance	0.79	ASTM E 903
Emittance	0.87	ASTM C 1371
SRI (Solar Reflectance Index)	98 (Initial) 88 (3 year)	ASTM E 1980-11

at the lap interface when tested. Consult your Tremco representative for additional information.

Perimeter/Projection Attachment:

Provide mechanical attachment of roofing membrane at roof perimeter, walls, expansion joints, and all other projections. Follow the recommendations of Factory Mutual Loss Prevention Data Sheets 1-28, 1-29, and 1-49.

Availability and Cost:

Contact your local Tremco Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216-292-5000

Maintenance:

Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty:

Tremco Inc. warrants TPO Single Ply Roof System to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY. All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product. This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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3735 Green Road
Beachwood, OH 44122
216-292-5000

220 Wicksteed Ave
Toronto, ONT M4H 1G7
416-421-3300