



Thermoplastic Single Ply and Multi-Ply Roofing Systems

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FLEX TPO PLUS DATA SHEET **45 MIL and 60 MIL THERMOPLASTIC POLYOLEFIN MEMBRANES**

DESCRIPTION:

Flex TPO Plus polyester reinforced thermoplastic polyolefin (TPO) roofing membranes are designed for use in mechanically fastened and adhered roofing systems. The Flex TPO Plus membranes are available in 45 mil and 60 mil nominal thicknesses and in widths of 4', 6', 8', 10' and 12' for economical installations. The Flex TPO Plus membranes are available in 3 standard colors white, tan and gray. Flex TPO Plus membranes offer the proven weathering resistance of rubber (derived from its high ethylene propylene rubber content) combined with the thermoplastic properties of polypropylene. The combination results in a roofing membrane with hot air welded seams and the durability of EPDM roofing membranes. The Flex TPO Plus membranes polyester reinforcement allows for structural movement with no splitting or cracking. The Flex TPO Plus membrane is also highly impact and puncture resistant. The specially formulated membrane offers excellent resistance to solar UV and chemical exposure as well as remaining flexible in cold temperatures.

USE:

Flex TPO Plus membranes can be installed in new, reroof (tear-off) and recover roof constructions. In recover construction, if the existing roof is structurally acceptable, the Flex roof system can save the cost of disposing of the original roof system. Flex TPO Plus membranes can be installed directly over layers of approved roof board insulation. The membrane is secured to the deck using an approved fastening system utilizing methods that have been independently tested for wind uplift. The Flex TPO Plus membranes are true thermoplastics, therefore all seams are sealed by the hot air welding method creating a seam as strong as the original membrane.

FEATURES:

- Excellent low temperature impact resistance
- No Halogenated Flame Retardants
- Plasticizer Free – Chlorine Free
- Recyclable environmentally friendly product
- Chemically resistant to acids, bases, and restaurant exhaust emissions
- White and Tan Flex TPO Plus Membranes LEED™ Qualified
- White and Tan Flex TPO Plus Membranes are Energy Star® roof products

INSTALLATION:

The roofing system must be installed by an authorized Flex Roofing Systems TPO applicator. The Flex applicator must inspect the area to be roofed to determine if the installation of a Flex Roof System is acceptable. The substrate must be clean, smooth, dry, free of flaws, debris and other irregularities. Follow Flex Specifications and NRCA recommendations for installation of wood nailers around perimeters and penetrations. Install approved insulation according to Flex's standard fastening requirements or applicable code whichever is more stringent. The membrane is mechanically attached using the disk and fastener in the seam method. Fastener spacing increments are determined by the projects specification criteria and or printed guide specifications. For adhered systems, the membrane is laminated to the appropriate substrate using Flex Bonding Adhesive. All seams are completed by the hot air welding method. Contact the Flex Technical Service Department for the specific design requirements and installation procedures for these two systems.

MEMBRANE SPECIFICATIONS

MEMBRANE:

Reinforced .045 inch and .060 inch thick Thermoplastic Polyolefin (TPO) membrane conforms to the following physical properties. Field membrane sheets are available in rolls 12, 10, 8 and 6 feet wide by 100 feet long. Perimeter membrane sheets are available in widths of 4 feet wide by 100 feet long. Membrane is available in white, gray or tan.

<u>Properties</u>	<u>Test Method</u>	<u>Value</u>	<u>Physical Properties</u>	
Color			White, Tan, Gray	
Roll Size			4', 6', 8', 10' or 12' wide x 100' long	
Weight			0.23 lb./ft ² (45 mil), .29 lb./ft ² (60 mil)	
Thickness	ASTM D-751	± 10	45 mil nominal	60 mil nominal
Thickness over scrim	ASTM D-6878	0.012"	0.015"	0.020"
Breaking Strength	ASTM D-751	220 lbf	320 lbf	360 lbf
Seam Strength	ASTM D-1876	25 lbf	60 lbf	60 lbf
Elongation (min %)	ASTM D-751	15 %	25% typical	
Heat Aging	ASTM D-573	90%	> 90% typical	
Tear Strength	ASTM D-751 tongue method	55 lbf	130 lbf typical	
Brittleness Point	ASTM D-2137	-40°C	Pass	
Linear Dimensional Change	ASTM D-1204	± 1 %	- 0.2 % typical	
Water Absorption	ASTM D-471	± 3 % max.	2.0% typical	
Ozone Resistance	ASTM D1149	No Cracks	Pass	
Weather Resistance	ASTM G-155	No Cracks	Pass	
Flex TPO Plus membranes meet or exceed the requirements of ASTM 6878 Standard Specification for Thermoplastic Polyolefin (TPO) Based Sheet Roofing.				

SOLAR ENERGY RADATIVE PROPERTIES

Property	Test Method	White TPO	Tan TPO	Gray TPO
Solar Reflectance	ASTM E903	0.80	0.66	0.25
Thermal Emittance	ASTM E408	0.95	0.95	0.95
SRI (solar reflectance index)	ASTM E 1980	110	84	55

