

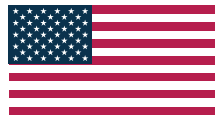
Product Description

Kingspan TPO is a Thermoplastic Polyolefin roofing membrane reinforced with a polyethylene, weft-inserted scrim and is formulated to maximize reflectivity, flexibility, and long-term performance in low-slope commercial roofing or re-roofing applications. Kingspan TPO membrane meets all ASTM D 6878 requirements. Kingspan TPO membranes are available in white, grey, or tan and in 45-mil, 60-mil, and 80-mil thicknesses.



Manufactured in the U.S.A.

All Kingspan TPO membranes are manufactured in the U.S.A. with globally sourced materials.



Features & Benefits

- **Built for Lasting Performance:** Kingspan TPO membrane is among industry-leaders based on results of the ASTM Standard D 6878 Thickness Over Scrim Test (ASTM D 7635).
- **Highly Reflective Membrane** reduces heat absorption and lowers energy costs.
- **Weatherability & Strength:** UV & Ozone resistance as well as puncture resistive with high tearing strength.
- **Installer-Friendly Weldability & Flexibility:** wide weld temperature window supports any level of installer experience and polyethylene-based formulation provides the installer more membrane workability during the installation.
- **12 ft. wide White TPO Membrane option:** expedites system installation with fewer rolls to hoist on the roof and fewer seams to weld.
- **Performance Tested:** FM and UL assemblies along with CRRC ratings. Also compliant with California Title 24.
- Warranty options to protect your investment.
- Available in white, grey, and tan color options.

System Installation Options

- **Mechanically Attached System** – most common attachment method whereby fasteners and plates are used to attach the membrane to the roof deck in accordance with Kingspan’s TPO fastening rate requirements.
- **Adhered System** – attachment method where adhesive is utilized to adhere the membrane to an approved Kingspan substrate.
- **Induction-Welded** – where the membrane is attached over an approved substrate that has mechanically attached induction welded plates. Note: this application is only approved for Kingspan TPO 060 and TPO 080 roofing systems.

Codes & Approvals



Application

- Install the Kingspan TPO membranes in accordance with Kingspan TPO specifications and requirements. Reference the Kingspan Application Guide for additional details.

Safety Precautions

- Use proper equipment and assistance when moving, lifting, handling, or transporting membrane rolls to avoid personal injuries as well as damage to the membrane.
- Reference the Kingspan product Safety Data Sheet for additional safety information.

Storage

- Store Kingspan TPO membrane away from objects that could cause physical damage or create punctures as well as ignition sources. The membrane is flammable and will catch fire when exposed to open flame.

Radiative Properties & Energy Tested Metrics

CRRC®

The Cool Roof Rating Council (CRRC) focuses on the radiative properties of roofing and exterior wall materials, specifically solar reflectance (how well a surface reflects sunlight) and thermal emittance (how well a surface releases absorbed heat). These properties, along with the Solar Reflectance Index (SRI), are used to evaluate how well a roofing material can help reduce heat gain in buildings.

Kingspan TPO Membrane		Reflectivity	Emissivity
White	Initial	0.77	0.87
	3 Yr. Aged	0.70	0.86
Grey	Initial	0.35	0.87
	3 Yr. Aged	0.34	0.90
Tan	Initial	0.67	0.87
	3 Yr. Aged	0.62	0.90

California Title 24

California Title 24, also known as the California Energy Code, sets building energy efficiency standards for residential and commercial buildings by the California Energy Commission. Title 24 aims to reduce wasteful energy use, conserve resources, and extend renewable resources.

Kingspan TPO Membrane		Reflectivity	Emissivity
White	Pass	0.77	0.87
Tan	Pass	SRI = 75	
	3 Yr. Aged		

LEED® Information

Kingspan TPO Membrane		Solar Reflectance Index* (ASTM E1980)
White	Initial	95
	3 Yr. Aged	85
Grey	Initial	39
	3 Yr. Aged	37
Tan	Initial	81
	3 Yr. Aged	75

Evaluated Physical Properties

Physical Properties (ASTM D 6878)*

Properties	ASTM Test Method	Standard for ASTM D 6878 (Minimum)	45 mil		60 mil		80 mil	
			MD	CMD	MD	CMD	MD	CMD
Breaking Strength	D 751, Grab Method	220 lbf (976 N)	326 lbf (1,450 N)	309 lbf (1,374 N)	411 lbf (1,828 N)	388 lbf (1,726 N)	464 lbf (2,064 N)	439 lbf (1,953 N)
Elongation of Reinforcement Break	D 751, Grab Method	15%	31%	32%	27%	27%	29%	31%
Tearing Strength	D 751	55 lbf (245 N)	72 lbf (320 N)	122 lbf (543 N)	92 lbf (409 N)	178 lbf (792 N)	65 lbf (289 N)	179 lbf (796 N)
Factory Seam Strength	D 751	66 lbf (290 N)	89 lbf (396 N)		112 lbf (498 N)		137 lbf (609 N)	
Overall Thickness	D 751	0.039"	0.045" (nominal)		0.060" (nominal)		0.080" (nominal)	
Thickness Over Scrim	D 7635	0.015"	0.018"		0.027"		0.033"	
Water Absorption (max)	D 471	3.00%	0.10%		0.11%		0.03%	
Brittleness Point	D 2137	-40°F (no cracks)	Pass		Pass		Pass	
Ozone Resistance	D 1149	Pass (no cracks)	Pass		Pass		Pass	
Properties After Heat Aging @ 240°F	D 573	Pass / Fail	Pass		Pass		Pass	
Breaking Strength (after heat aging)	D 751	90%	> 90%	> 90%	> 90%	> 90%	> 90%	> 90%
Elongation (after heat aging)	D 751	90%	> 90%	> 90%	> 90%	> 90%	> 90%	> 90%
Tearing Strength (after heat aging)	D 751	60%	> 60%	> 60%	> 60%	> 60%	> 60%	> 60%
Weight Change (max after heat aging)	D 751	± 1.0%	0.25%		0.19%		0.22%	
Linear Dimensional Change (max)	D 1204 (after 6 hours @ 158°F)	± 1.0%	< 0.1%		< 0.1%		< 0.1%	
Accelerated Weathering	G 151 & G 155	10,080 kJ/m ² • nm @ 340 nm	> 20,160 kJ/m ²		> 20,160 kJ/m ²		> 20,160 kJ/m ²	
Cracking (7x magnification)	G 155	No Cracks	Pass		Pass		Pass	

* Values are provided in MD (machine direction) and CMD (cross-machine direction).

Additional Physical Properties Testing

Properties	ASTM Test Method	45 mil	60 mil	80 mil
Dynamic Puncture	D 5635	Pass @ 25 Joules		
Static Puncture	D 5602	Pass @ 44 lb (20 kg)		
Resistance of Synthetic Polymer Material to Fungi	G 21	0 Rating		
Puncture Resistance	(FTMS 101C, Method 2031)	363 lb (165 kg)	371 lb (168 kg)	526 lb (239 kg)
Moisture Vapor Transmission	E 96	0 g/m ² per 24 hours		
Hydrostatic Resistance, Mullen	D 751	474 PSI (3,268 kPa)		
Standard Test Method for Air Permeance of Building Materials	E 2178	Pass @ <0.0005 L/(s•m ²) (Pass @ <0.0001 CFM/ft ²)		

Product Sizes

Kingspan TPO Membrane – 45 mil Thickness

SKU	Description	Roll Coverage
600000001001	Kingspan TPO 045 Membrane 5'x100' White	500 sq. ft.
600000001002	Kingspan TPO 045 Membrane 6'x100' White	600 sq. ft.
600000001003	Kingspan TPO 045 Membrane 8'x100' White	800 sq. ft.
600000001004	Kingspan TPO 045 Membrane 10'x100' White	1,000 sq. ft.
600000001005	Kingspan TPO 045 Membrane 12'x100' White	1,200 sq. ft.
600000001430	Kingspan TPO 045 Membrane 5' x 100' Grey	500 sq. ft.
600000001432	Kingspan TPO 045 Membrane 10' x 100' Grey	1,000 sq. ft.
600000001431	Kingspan TPO 045 Membrane 5' x 100' Tan	500 sq. ft.
600000001433	Kingspan TPO 045 Membrane 10' x 100' Tan	1,000 sq. ft.

Kingspan TPO Membrane – 60 mil Thickness

SKU	Description	Roll Coverage
600000001006	Kingspan TPO 060 Membrane 5'x100' White	500 sq. ft.
600000001007	Kingspan TPO 060 Membrane 6'x100' White	600 sq. ft.
600000001008	Kingspan TPO 060 Membrane 8'x100' White	800 sq. ft.
600000001009	Kingspan TPO 060 Membrane 10'x100' White	1,000 sq. ft.
600000001010	Kingspan TPO 060 Membrane 12'x100' White	1,200 sq. ft.
600000001434	Kingspan TPO 060 Membrane 5' x 100' Grey	500 sq. ft.
600000001436	Kingspan TPO 060 Membrane 10' x 100' Grey	1,000 sq. ft.
600000001435	Kingspan TPO 060 Membrane 5' x 100' Tan	500 sq. ft.
600000001437	Kingspan TPO 060 Membrane 10' x 100' Tan	1,000 sq. ft.

Kingspan TPO Membrane – 80 mil Thickness

SKU	Description	Roll Coverage
600000001011	Kingspan TPO 080 Membrane 5'x100' White	500 sq. ft.
600000001012	Kingspan TPO 080 Membrane 6'x100' White	600 sq. ft.
600000001013	Kingspan TPO 080 Membrane 8'x100' White	800 sq. ft.
600000001014	Kingspan TPO 080 Membrane 10'x100' White	1,000 sq. ft.
600000001015	Kingspan TPO 080 Membrane 12'x100' White	1,200 sq. ft.
600000001454	Kingspan TPO 080 Membrane 5' x 100' Grey	375 sq. ft.
600000001456	Kingspan TPO 080 Membrane 10' x 100' Grey	750 sq. ft.
600000001455	Kingspan TPO 080 Membrane 5' x 100' Tan	375 sq. ft.
600000001457	Kingspan TPO 080 Membrane 10' x 100' Tan	750 sq. ft.

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