

High Performance Thermoplastic Polyolefin (TPO) Sheet

## DESCRIPTION

**TIKIPLAN TPO** Reinforced Membrane is a high performance, heat weldable, thermoplastic polyolefin (TPO) sheet based on advanced polymer technology and designed for waterproofing and heat shielding roofs of new and existing building.

**TIKIPLAN TPO** is reinforced with polyester scrim, encapsulated between the TPO top and bottom layers, combination of which provides high mechanical properties to the membrane ensuring superior puncture resistance, breaking & tearing strength.

The smooth surface of the membrane enables excellent heat weld which provides proper heat fusion along the edges, making the membrane monolithic, providing consistent and water-tight assembly.

**TIKIPLAN TPO** membranes are further formulated to provide high solar reflective index, thermal emittance, and solar reflectance, enabling the membrane to provide insulation with high surface albedo.

## FEATURES & BENEFITS:

- Pre-Fabricated - No need to worry of thickness variation at site, unlike liquid applied systems.
- Reinforced - outstanding puncture resistance, high breaking and tearing strength.
- High peel strength of seam joints.
- Chlorine free, plasticizer free, phthalate free - environmentally friendly and safe for humans.
- Exceptional resistance to thermal cycles, UV, Ozone, bacteria, chemical, and acidic corrosion.
- Resistance to root penetration - suitable for use on green roofs.
- Sustain hot, cold, wet and dry environmental cycles from (-)30°C to (+) 100°C without cracking, tearing or brittleness failure.
- 100% recyclable.

## USES

- PEB Roofs
  - Factory Sheds
  - Warehouses
  - Cold Storages
  - Airports
  - Railway, Metro & Bus transit stations
- Green Roofs

## APPLICATION INSTRUCTIONS

Installation of **TIKIPLAN TPO** Membrane is quick, with minimal labour and few components. The system is build using mechanized and automated machines like heat welder, adhesive applier and / or drilling machine for mechanically fastened system.

It is recommended to maintain Standard Seams: 75 mm; Seams with mechanical anchoring: 150 mm, Upstands: additional length of 150mm.

For complete installation system, please contact TIKIDAN technical department.

## STORAGE

**TIKIPLAN TPO** membranes must be stored above 5°C in dry and clean conditions and in their original, closed wrapping away from sources of chemical contamination, damage, ignition sources and open flame. Store under the shed & protect from extremes of temperature.

Shelf life of the membrane is 5 years.

## SAFETY PRECAUTIONS

As with all synthetic products, care should be taken during use and storage of **TIKIPLAN TPO**. Exercise caution when lifting, moving, transporting, storage & handling to avoid puncture and physical damage.

## PROPERTIES

PROPERTY	ASTM D 6878	TIKIPLAN TPO 1.2	TIKIPLAN TPO 1.5
Nominal Thickness, mm (ASTM D751)	≥0.99	1.2 ±10%	1.5 ±10 %
Thickness Over Scrim, % (ASTM D 7635)	> 30% of total thickness	≥35%	≥35%
Typical Weight, Kg/m <sup>2</sup>	NA	1.28 ±10%	1.60 ±10%
Breaking Strength, LBF, MD/TD (ASTM D 751 GRAB METHOD)	≥220	≥225	≥250
Elongation at Break, %, MD/TD (ASTM D 751)	≥15%	≥15	≥15
Tearing Strength, LBF, MD/TD (ASTM D 751 Procedure B)	≥55	≥55	≥55
Brittleness Point, °C (ASTM D 2137)	-40°C	Pass	Pass
Linear Dimensional Change, %, 6hrs @ 70°C (ASTM D 1204)	±1% Max	< 1%	< 1%
Ozone Resistance, 100 pphm, 168 hrs. (ASTM D 1149)	No Cracks @ 7% Magnification	Pass	Pass
Water Absorption, %, 66 hrs. @ 70°C TOP (ASTM D471)	±3% Max	< 3.0%	< 3.0%
Factory Seam Strength, LBF, (ASTM D 751 GRAB METHOD)	≥66	≥66	≥66
Water Vapour Permeance, Perms (ASTM E96, Procedure B)	No requirement	0.10 Max	0.10 Max
Puncture Resistance, LBF, (FTM 101C)	No requirement	250	300
Properties after Heat Ageing for 32weeks @ 115°C (ASTM D 573) (i) Breaking Strength (LBF) (ii) Elongation Retention (%) (iii) Weight change (%) (iv) Tearing Strength (LBF)	Retention ≥90% ≥90% ±1.0 Max ≥60%	Pass	Pass
Weather Resistance, KJ/(m <sup>2</sup> .mm) (ASTM G155)	≥10,080	> 21,600	> 21,600
Field Seam Strength, LBF, (ASTM D 751 GRAB METHOD)	No requirement	≥40	≥40
Solar Reflectance Index	No requirement	100	100
Reflectivity (ASTM C1549)	No requirement	0.79	0.79
Emissivity (ASTM C1371)	No requirement	0.909	0.909

## SUPPLY

**TIKIPLAN TPO** is supplied in white colour (exposed top layer) in 1.2 and 1.5 mm thickness with width up to 2mtr.

Thickness (mm)	1.2	1.2	1.5	1.5
Width (m)	1.6	2.0	1.6	2.0
Length (m)	20	20	20	20
Area (m <sup>2</sup> )	32	40	32	40
Weight (Kg.)	41	51.2	51.2	64

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