

TECHNICAL DATASHEET

GS TPO RF FR

TPO MEMBRANE SCRIM REINFORCED

GreenShield™ TPO RF FR Membrane is a high performance, heat weldable, scrim reinforced thermoplastic polyolefin (TPO) sheet, manufactured and supplied in thickness of 1.2 / 1.5 mm, designed for waterproofing and heat shielding roofs of new and existing PEB buildings.

Based on advanced polymer chemistry, the membrane is designed for weather resistance and fire protection, sustaining cycles of hot, cold, wet and dry environmental conditions, remaining flexible over years, maintaining its integrity and continuing to provide protection from water seepage and heat.

High mechanical properties of the membrane ensure superior puncture resistance, breaking and tearing strength, while enabling excellent heat weld for fusion along the edges.

GreenShield™ 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

- ◇ Supplied in pre-manufactured standard thickness. No thickness variation unlike liquid applied systems.
- ◇ Outstanding puncture resistance, high breaking and tearing strength, with very high peel strength of seam joints and heat welds.
- ◇ Chlorine free, plasticizer free, phthalate free. Environmentally friendly and safe for humans
- ◇ Exceptional resistance to heat, UV, Ozone, bacteria, chemical, acid corrosion
- ◇ Resistance to root penetration, suitable for green roofs and below ground applications.
- ◇ Continuous serviceability from -30°C to 100°C - without cracking, tearing or brittleness failure

Application Areas

- ◇ PEB Roofs
 - ◇ Factory Sheds
 - ◇ Warehouses & Cold Storages
 - ◇ Airports, Railway, Metro & Bus Transit Stations
- ◇ Green Roofs

Packing, Storage & Coverage

ROLL DETAILS	Thickness (mm)	1.2	1.2	1.5	1.5
	Width (mtr)	1.6	2.0	1.6	2.0
	Length (mtr)	20	20	20	20
	Sq.mts (mtr ²)	32	40	40	40
	Weight (kgs)	43	54	54	68
	STORAGE	Store membranes in dry and clean conditions and in their original, closed wrapping away from sources of chemical contamination, damage, ignition sources and open flame. Shelf life is beyond 5 years. Exercise caution when lifting, moving, transporting, storage and handling to avoid puncture and physical damage.			
COVERAGE	The dimensions of the membrane are calculated to cover the substrate, including seam overlaps.				
	Standard Seams: 75 mm Seams with mechanical anchoring: 150 mm Upstands: additional length of 150 mm				



GreenShield

Heatshielding & Waterproofing Your Roof

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PROPERTY	ASTM D 6878	GS TPO 1.2 RF FR	GS TPO 1.5 RF FR
Nominal Thickness mm; ASTM D751	---	1.2 ± 10%	1.5 ± 10%
Thickness Over Scrim %; ASTM D 7635	> 30% of total thickness	35% Min	35% Min
Typical Weight Kg/m ²	NA	1.35 ± 10%	1.70 ± 10%
Breaking Strength LBF; MD/TD; ASTM D 751 Grab Method	220 Min	225 Min 300 Typical	225 Min 330 Typical
Elongation at Break %, MD/TD; ASTM D 751	15% Min	15 Min 25 Typical	15 Min 25 Typical
Tearing Strength LBF; MD/TD; ASTM D 751 Procedure B	55 Min	55 Min 100 Typical	55 Min 100 Typical
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 Min	66 Min 80 Typical	66 Min 80 Typical
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 32weeks @ 115°C; ASTM D 573 (i) Breaking Strength (LBF) (ii) Elongation Retention (%) (iii) Weight change (%) (iv) Tearing Strength (LBF)	Retention 90% Min 90% Min ± 1.0 Max 60% Min	Pass	Pass
Weather Resistance KJ/(m ² .mm); ASTM G155	10,080 Min	> 21,600	> 21,600
Field Seam Strength LBF; ASTM D 751 Grab Method	No requirement	40 Min 60 Typical	40 Min 60 Typical
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
FIRE PERFORMANCE			
Reaction to Fire EN 13501-1	---	E-Class	E-Class
External fire performance EN 13501-5	---	B _{ROOF} (t1)	B _{ROOF} (t1)

Note & Disclaimer: For latest updates and additional info, please consult our website at www.greenshield.co.in. Testing results and/or copies of Approval Documents for above mentioned membranes are available on request.

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is user responsibility to ensure that product is used and handled correctly and in accordance with applicable standards and recommendations and only for the intended purpose. We reserve the right to update information without prior notice to reflect ongoing research and development program. Country specific recommendations, considering local standards, practice codes, building regulations and industry guidelines, may effect installation recommendations. The supply of our products and services is subject to terms, warranties and exclusions available to you on request.