

LEXCAN

# HI-TUFF TPO

## Fleece-Backed HA Membrane

### DESCRIPTION

Lexcan Hi-Tuff Fleece-backed HA TPO Membrane is manufactured using a hot-melt extrusion process for complete scrim encapsulation. Once the TPO is reinforced and enhanced with fleece, the total sheet thicknesses available are 3.05, 3.43 and 3.94 mm (120, 135 and 155 mil), creating a very tough, durable and versatile sheet that is ideal for re-roofing or new construction projects. Hi-Tuff Fleece-backed HA TPO membrane is chlorine free and plasticizer free with excellent chemical resistance to acids, bases, restaurant oils and greases.

Hi-Tuff Fleece-backed HA TPO Membrane utilizes Octaguard XT™ weathering package technology to withstand extreme durability testing intended to simulate exposure to severe climates. The membrane's advanced polymerization technology combines the flexibility of ethylene-propylene (EP) rubber with the heat weldability of polypropylene.

### FEATURES & BENEFITS

- **Reliable Heat-Welded Seams** - Thermofused, molecularly bonded seams offer high strength and superior reliability.
- **Fleece Reinforcement** - Adds toughness, durability and enhanced puncture resistance.
- **Excellent hail damage resistance** - Passes FM's severe hail test and UL-2218 Class 4 rating.
- **UL Class A Rated** - White membranes.

### APPLICATION

Hi-Tuff Fleece-backed HA TPO Membrane is intended to be used with adhered roofing and waterproofing systems. It is ideally suited for recovering aged smooth BUR, mineral cap sheets or SBS modified bitumen roofs.

### LEED INFORMATION

Property	Result
Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Solar Reflectance Index	White: 110

### CAUTIONS & LIMITATIONS

- Use proper stacking procedures to ensure sufficient stability.
- Exercise caution when walking on wet membrane.
- UV-resistant sunglasses are required when working with Hi-Tuff TPO membranes.
- White surfaces reflect heat and may become slippery due to frost and ice accumulation.
- Care must be exercised when working close to a roof edge when the surrounding area is snow covered.
- Fleece-backed TPO membrane rolls must be tarped and elevated to keep dry prior to installation. If the fleece gets wet, use a wet vac system to help remove moisture from the fleece. **DO NOT INSTALL MEMBRANE IF FLEECE IS WET.**
- Fleece-backed TPO membrane exposed to the weather must be prepared with Lexcan Weathered Membrane Cleaner prior to hot-air welding.

### INSTALLATION

Asphalt Adhered Roofing System - Insulation is mechanically fastened or adhered with ASTM Type III, IV or Modified Asphalt to the roof deck. When adhering insulation with asphalt, the insulation boards are limited to 4' x 4'. Cover boards are required over the insulation for hot asphalt installations. Apply Type III, IV Modified Asphalt to the approved substrate and set the Fleece-backed membrane into the asphalt. Broom the membrane with a stiff bristle push broom to ensure full embedment. Splices are hot-airwelded. End laps are sealed with reinforced TPO. The Fleece-backed membrane may be adhered directly to existing smooth BUR, mineral cap sheet, or SBS modified bitumen after priming the surface with Cut-Back Asphalt primer.

### WARRANTY

Superior installation quality and long term performance is guaranteed with comprehensive Lexguard warranty packages. To provide the best assurance of a quality installation, projects are normally inspected both during installation and after completion by a Lexcan Technical representative.

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## TECHNICAL DATA

Physical Property	Test Method	SPEC (PASS)	Result
<b>Tolerance on Nominal Thickness</b>	ASTM D751	± 10%	± 10%
<b>Thickness Over Fleece, min</b> 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	ASTM D4637 Annex	.762 mm (.03 mil) 1.14 mm (.045 mil) 2.03 mm (.08 mil)	1.14 mm (.045 mil) 1.52 mm (.060 mil) 2.28 mm (.080 mil)
<b>Weight</b> 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	—	—	0.31 lbm/ft <sup>2</sup> 0.40 lbm/ft <sup>2</sup> 0.50 lbm/ft <sup>2</sup>
<b>Breaking Strength, min</b> 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	ASTM D751 Grab Method	400 N (90 lbf)	1300 N (300 lbf) 1800 N (400 lbf) 1900 N (425 lbf)
<b>Elongation</b> break of internal fabric	ASTM D751	—	25%
<b>Tearing Strength, min</b> 3.05 mm (120-mil), 3.43 mm (135-mil) & 3.94 mm (155-mil)	ASTM D751 B Tongue Tear	45 kN (10 lbf)	245 kN (55 lbf)
<b>Puncture Resistance</b> 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	ASTM D5635	—	17.5 Joules 22.5 Joules 30 Joules
<b>Puncture Resistance</b> 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	FTM 101C Method 2031	350 lbf 400 lbf 425 lbf	525 lbf 575 lbf 600 lbf
<b>Linear Dimensional Change</b>	ASTM D1204	± 1% Max	-0.2 typical
<b>Brittleness point, max, °C (°F)</b>	ASTM D2137	-40°C (-40°F)	-46°C (-50°F)
<b>Field Seam Strength, tested in peel</b> 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	ASTM D1876	4.4 kN/m (25 lbf/in) 4.4 kN/m (25 lbf/in) 7.0 kN/m (40 lbf/in)	7.4 kN/m (40 lbf/in) 10.5 kN/m (60 lbf/in) 12.3 kN/m (70 lbf/in)
<b>Resistance to Heat Aging</b> 670 hrs. at 240 °F Breaking strength, % retained Elongation reinf. % retained Tearing Strength, % retained Weight Change, %	ASTM D573	— — — —	90 min. 90 min. 60 min. ± 1.0 max
<b>Water Vapor Permeance</b>	ASTM E96 Proc B	—	0.10 perms max 0.05 perms typical
<b>Ozone Resistance</b> 100 ppm, 168 hours	ASTM D1149	No cracks	No cracks
<b>Resistance to Microbial Surface Growth</b> Rating (1 is very poor, 10 is no growth)	ASTM D3274	—	9-10 typical
<b>Resistance to Water Absorption</b> After 7 days immersion @ 70°C (158°F) Change in mass, max,	ASTM D471	+4%	+2%
<b>Resistance to Outdoor (Ultraviolet) Weathering</b> Xenon-Arc, radiant exposure at 0.70 W/m irradiance, 80°C black panel temp. 3.05 mm (120-mil) 3.43 mm (135-mil) 3.94 mm (155-mil)	ASTM G155	No cracks No loss of breaking or tearing strength — — —	No cracks No loss of breaking or tearing strength 17,640 kg/m <sup>2</sup> 20,160 kg/m <sup>2</sup> 27,720 kg/m <sup>2</sup>

## Radiative Properties for ENERGY STAR, Cool Roof Rating Council (CRRC) and LEED

Physical Property	Test Method	White TPO
<b>ENERGY STAR – E-903</b> Initial solar reflectance	Solar Spectrum Reflectometer	0.87
<b>ENERGY STAR – E-903</b> Solar reflectance after 3 years	Solar Spectrum Reflectometer (after cleaning)	0.83
<b>CRRC</b> Initial solar reflectance	ASTM C1549	0.79
<b>CRRC</b> Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70
<b>CRRC</b> Initial thermal emittance	ASTM C1371	0.90
<b>CRRC</b> Thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86
<b>LEED</b> Thermal emittance	ASTM E408	0.95
<b>SRI - Solar Reflectance Index</b>	ASTM E1980	110