

LEXCAN

HI-TUFF TPO

Reinforced Membrane

DESCRIPTION & USE

Lexcan Hi-Tuff TPO is a premium, heat weldable, thermoplastic polyolefin (TPO) membrane for roofing and waterproofing applications. It is based on advanced polymerization technology that combines the durability and weather resistance of ethylene propylene (EP) rubber with the heat weldability of polypropylene. Hi-Tuff TPO HS is a similar membrane formulated with additional flame retardant for fire code approvals on higher slope applications.

Hi-Tuff TPO membrane consists of two plies, internally reinforced with a fully encapsulated polyester scrim. The scrim enhances the membrane's breaking strength as well as its tear and puncture resistance. It is available in 1.1 mm (0.045"); 1.5 mm (0.060") and 2.0 mm (0.080") thicknesses for enhanced puncture resistance and durability. Standard colours are white, grey and tan, however custom colours are also available on special order.

FEATURES & BENEFITS

- **Proven Performance** – Hi-Tuff TPO membrane has been installed on thousands of projects and in successful use for over twenty years.
- **Reliable Heat-Welded Seams** - Thermofused, molecularly bonded seams offer high strength and superior reliability.
- **Plasticizer Free** – Hi-Tuff TPO is naturally flexible. It contains no polymeric or liquid plasticizers that can leach out over time.
- **Super Strong** – The fully encapsulated warp knitted polyester reinforcement provides outstanding tear and puncture resistance.
- **Energy Saving** - Studies have shown that a light coloured roof surface can significantly reduce air conditioning costs in the summer and contribute to reducing a local urban heat island effect.
- **Environmentally Friendly** - With heat-welded seams, only the most minimum amount of adhesives and sealants are required to complete the system.
- **Chemical Resistant** - Hi-Tuff TPO is able to withstand prolonged exposure to numerous industrial wastes and chemicals, including some oils and greases. Contact Lexcan to verify the resistance of the membrane to a particular chemical before proceeding with an installation.
- **100% Recyclable** – Hi-Tuff TPO is fully recyclable
- **ENERGY STAR™ and LEED's Compliant** – Hi-Tuff TPO is Energy Star compliant and qualifies for a LEED point.

CAUTIONS & LIMITATIONS

- Hi-Tuff TPO Membranes are slippery when wet or covered by frost. Exercise care when walking on the roof under these conditions.
- White and light coloured membranes are highly reflective to sunlight. Workers on the roof should wear UV filtering protective sunglasses and, in hotter climates, protective clothing and/or sunscreen.
- Exercise care when working near roof edges, particularly when there is snow on the ground. The roof edge may not be clearly visible under these conditions.



- Stack rolls carefully to ensure stability.
- Store Hi-Tuff TPO rolls in the original plastic wrap in a cool, shaded area covered with a light coloured, breathable tarpaulin. Membrane that has been exposed to the weather requires cleaning with Lexcan's Weathered Membrane Cleaner, prior to hot air welding.

APPLICATION

Fully Adhered Roof System

In the fully adhered assembly, the Hi-Tuff TPO membrane is bonded to an acceptable insulation or other substrate with Hi-Tuff TPO Bonding Adhesive. Membrane seams are heat-welded to ensure a homogenous watertight membrane from the parapet to the drains.

Mechanically Fastened Roof System

In the MFRS, the Hi-Tuff TPO membrane is secured to the structural deck with Lexgrip membrane fasteners and plates evenly spaced down the side of each membrane sheet. The number and pattern of fasteners required depends upon several factors including local wind conditions, building construction and the height of the roof. Adjacent sheets are positioned to overlap the fasteners and then heat-welded to form a watertight seal that is as strong as the membrane itself.

Lexcan has a variety of special corrosion resistant fasteners for securing the Hi-Tuff TPO membrane to steel, concrete, lightweight concrete and wood decks. Lexgrip™ fasteners surpass Factory Mutual requirements for wind and corrosion resistance.

For more information on the various application methods for Hi-Tuff TPO Membrane, refer to Lexcan's sample specifications for the application method in question.

continued on back

lexcan.com

LEXCAN SINGLE PLY ROOFING SYSTEMS

Ontario and Western Canada
1 877 792.8308



Quebec and Eastern Canada
1 800 363.2307

HI-TUFF TPO

Reinforced Membrane

LEXCAN

TECHNICAL DATA

Lexcan Hi-Tuff TPO membrane meets and exceeds the requirements of ASTM D6878, Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.

Physical Property	ASTM D4434 Requirement	1.14 mm (45-mil)	1.52 mm (60-mil)	2.03 mm (80-mil)
Thickness over scrim, ASTM D7635, optical method, avg. of 3 areas (typ.)	0.380 mm (0.015") min.	0.457 mm (0.018")	0.610 mm (0.024")	0.864 mm (0.034")
Weight	—	1.1 kg/m ² (0.23 lbs/ft ²)	1.4 kg/m ² (0.29 lbs/ft ²)	2.0 kg/m ² (0.40 lbs/ft ²)
Breaking strength, ASTM D751 grab method (typ.)	976 N (220 lbf) min.	1.4 kN (320 lbf)	1.6 kN (360 lbf)	1.9 kN (425 lbf)
Elongation break of reinforcement, ASTM D751 grab method (typ.)	15% min.	25%	25%	25%
Tearing Strength, ASTM D751 proc. B 8 in. x 8 in. (typ.)	245 N 55 lbf	578 N 130 lbf	578 N 130 lbf	578 N 130 lbf
Brittleness Point, ASTM D2137	-40°C (-40°F) max	-46°C (-50°F)	-46°C (-50°F)	-46°C (-50°F)
Linear Dimensional Change, ASTM D1204, 6 hours at 70°C (typ.)	± 1% max	-0.2%	-0.2%	-0.2%
Ozone Resistance, no cracks 7X ASTM D1149, 100 pphm, 168 hrs	PASS	PASS	PASS	PASS
Water Absorption Resistance, mass ASTM D471 top surface only 166 hours at 70°C water (typ.)	± 3.0% max	0.90%	0.90%	0.90%
Factory Seam Strength, ASTM D751 grab method	290 kN/m (66 lbf/in) min.	290 kN/m (66 lbf/in) min.	290 kN/m (66 lbf/in) min.	290 kN/m (66 lbf/in) min.
Field Seam Strength, ASTM D1876 tested in peel (typ.)	No requirement	8.8 kN/m (50 lbf/in) min.	10.5 kN/m (60 lbf/in) min.	12.3 kN/m (70 lbf/in) min.
Water Vapour Permeance, ASTM E96 proc. B (typ.)	No requirement	0.05 Perms	0.05 Perms	0.05 Perms
Puncture Resistance, FTM 101C, method 2031 (typ.)	No requirement	1.4 kN (320 lbf)	1.6 kN (350 lbf)	2.0 kN (450 lbf)
Tolerance on Nominal Thickness, ASTM D751	+15%, -10%	± 10%	± 10%	± 10%
Properties After Heat Aging, ASTM D573, 5376 hours @ 116°C				
Breaking Strength	881 N (198 lbf) 90% min.	912 N (205 lbf) min.	1kN (225 lbf) min.	1.4 kN (315 lbf) min.
Elongation Reinf.	13.5% (90%) min.	13.5% min.	13.5% min.	13.5% min.
Tearing Strength	33 lbf (60%) min.	33 lbf min.	33 lbf min.	33 lbf min.
Weight Change	± 1.0% max	± 1.0% max	± 1.0% max	± 1.0% max

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

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

Physical Property	Test Method	White TPO	Tan TPO	Grey TPO
ENERGY STAR – E-903 Initial solar reflectance	Solar Spectrum Reflectometer	0.79	0.71	N/A
ENERGY STAR – E-903 Solar reflectance after 3 years	Solar Spectrum Reflectometer (uncleaned)	0.70	0.64	N/A
CRRC Initial solar reflectance	ASTM C1549	0.79	0.71	0.46
CRRC Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.64	0.43
CRRC Initial thermal emittance	ASTM C1371	0.90	0.86	0.89
CRRC Thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86	0.87	0.88
LEED Thermal emittance	PASS	0.90	0.86	0.85
SRI - Solar Reflectance Index	ASTM E1980	99	86	53

LEED INFORMATION

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Solar Reflectance Index (White)	99 (white), 86 (tan)

APPROVALS & COMPLIANCES

Lexcan Hi-Tuff TPO membrane meets and exceeds the requirements of ASTM D6878, Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.

Lexcan Hi-Tuff TPO roof systems have also been tested and meet the requirements of:

- Factory Mutual Research Corp.
- Underwriters' Laboratories Inc.

For further information on specific listings and approvals, refer to the appropriate listing book or consult your Lexcan representative.

INSTALLATION

Hi-Tuff TPO is installed by professional roofing contractors trained and approved by Lexcan. Refresher seminars are regularly held to update contractors on the latest techniques and developments.

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.

lexcan.com

LEXCAN SINGLE PLY ROOFING SYSTEMS

Ontario and Western Canada
1 877 792.8308



Quebec and Eastern Canada
1 800 363.2307