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ROOFING *Systems*





HI-TUFF ROOFING SYSTEMS

High Performance Roofing for Industrial, Commercial and Institutional Buildings

*Famous Players Tenplex
Mississauga, Ontario*

Roofed With Grey Hi-Tuff EP



COMPANY PROFILE

Lexcan was incorporated in 1968 with the objective to explore and develop single ply membrane technology for roofing applications. Lexcan became the first company in the world to actively market an EPDM single-ply roofing system. Based on this success, Lexcan broadened its scope to include Hi-Tuff EP and Hypalon roof systems that featured heat-weldable membranes. The addition of the Hi-Tuff systems reinforces Lexcan's commitment to provide the Canadian Market with the latest in advanced roofing technology.

Canadian owned and operated, Lexcan maintains offices in several centres across the country and is represented by knowledgeable agents or distributors in other regions. We support and are represented in the Canadian Roofing Contractor's Association, various provincial contractors' associations, Construction Specifications Canada and other construction organizations.

Lexcan continually strives to remain at the forefront of waterproofing technology. The knowledge and experience gained in the past has resulted in the quality roofing systems described in this brochure. These systems include superior installation methods and products that in the end, guarantee what our customers want most: a long-lasting problem free roof.

As well as standard black, Hi-Tuff EP is available in white, grey, light grey, tan and terra cotta red. Consider how your roof can now become a distinguishing feature of your building!

Hi-Tuff EP is stronger and more puncture resistant than most multi-ply roofing systems.

APPLICATIONS

Hi-Tuff EP may be installed in a number of different methods, including "loose laid and ballasted" applications such as Lexcan's standard Design B and C assemblies. It truly stands-out in a mechanically fastened or fully adhered system, however, where its heavy duty scrim reinforcement and super strong, heat-welded seams offer the superior protection needed for a fully exposed application. Featuring an attractive, contour hugging surface in a truly lightweight assembly, Hi-Tuff EP is the preferred choice for many commercial and industrial roofing applications.

PRODUCT DESCRIPTION

Hi-Tuff roofing systems are based on the Hi-Tuff EP membrane; a copolymer of ethylene propylene rubber that has been calendared into a membrane sheet and internally reinforced with a heavy duty polyester scrim. Hi-Tuff EP offers outstanding resistance to weathering, temperature extremes, ultraviolet exposure and a wide variety of industrial chemicals.

Hi-Tuff EP is ideal for re-roofing applications where, in many cases, the membrane may be installed over top of the existing roof.

Mechanically Fastening Hi-Tuff EP Membrane



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*Front Cover Photos:
St. James Industrial Park, Winnipeg, Manitoba
Orillia Retirement Centre, Orillia, Ontario
CP Airport, Vancouver, British Columbia*

*Sears Warehouse
Montréal, P.Q.*

*Sectional Re-Roofs
With White Hi-Tuff EP*



Consider the Advantages of Hi-Tuff EP...

FOR THE OWNER

Long-Term Performance - Hi-Tuff EP out performs competing roofing systems in just about every category. Cold temperature flexibility, seam strength, tear and puncture resistance and resistance to UV degradation are just some of the characteristics that make Hi-Tuff EP stand out as your best roofing choice for long term performance.

Economical - Hi-Tuff EP can be economically installed in a variety of design configurations in either new or re-roof applications. In most cases the membrane can be installed over top of an existing roof to avoid the high costs of tearing-off and disposing of the existing roof.

Odour Free Installation - Roofing with Hi-Tuff EP means roofing without asphalt and offensive asphalt fumes.

Energy Saving - As well as standard black, Hi-Tuff EP is available in light grey and white. Studies have shown that a light coloured roof surface can significantly reduce air conditioning costs in the summer.

FOR THE SPECIFIER

Plasticizer Free - Unlike other thermoplastic membranes, Hi-Tuff EP is a rubber and contains no plasticizers that will leach out causing premature aging and embrittlement.

Excellent Ultraviolet Resistance - Xenon arc, weatherometer and Emmaqua testing of Hi-Tuff EP have all demonstrated outstanding resistance to the sun's ultraviolet rays - one of the most destructive forces degrading competing roofing systems.

Environmentally Friendly - Based on a highly inert and homogenous polymer, Hi-Tuff EP is lead free and does not release chlorine gas during welding or combustion. With heat-welded seams, only the most minimum amount of adhesives and sealants are required to complete the system.

Chemical Resistant - Hi-Tuff EP is highly chemical resistant and is able to

*Toronto Star Building
Vaughan, Ontario
Attractive Rooftop Advertising!*



withstand prolonged exposure to numerous industrial wastes. It is an ideal roofing membrane for industrial buildings subject to high levels of airborne pollutants or vent stack effluents. Contact Lexcan to verify the resistance of the membrane to a particular chemical before proceeding with an installation.

FOR THE ROOFER

Fast, Efficient Installation - With the PA membrane fastening system and seam welding speeds averaging 12 to 16 feet per minute, a mechanically fastened Hi-Tuff EP roof goes on fast. You are more competitive and can complete the roof in less time than competing systems - saving both you and your customer money.

Reliable Heat-Welded Seams - Featuring an unusually wide seaming temperature range, Hi-Tuff EP offers superior weld reliability even in the most difficult jobsite environments.

Easy to Repair - Should mechanical damage occur, it can be easily found and quickly repaired by trained roofing technicians. Aging has virtually no effect on the membrane's 'weldability' so it can be as easily repaired five years from now as the day it was put on.

Complete Line of Flashing Accessories - From pipe boots to corners, Hi-Tuff EP pre-fabricated flashings make the most troublesome details easier than ever.

The Backing of Lexcan - Canada's premier supplier of single ply membrane systems. With more technical

representatives and support staff to help you plan your job, answer your questions and provide jobsite assistance.

And most Important: Peace of Mind - Knowing that you have chosen for your customer the most durable, long-lasting roof available.

Hi-Tuff EP matches the application ease of a heat-weldable membrane with the proven durability and weather resistance of EPDM. The result is a roofing system that satisfies the most challenging demands of the roofer, building owner and specifier alike.

SYSTEM DESCRIPTIONS

Lexcan has four different Hi-Tuff roofing design systems to meet every roofing and waterproofing challenge:

- DESIGN A:** Adhesive Adhered
- DESIGN B & C:** Loose-laid and Ballasted
- DESIGN E:** Mechanically Fastened
- DESIGN F:** Loose Laid & Vented

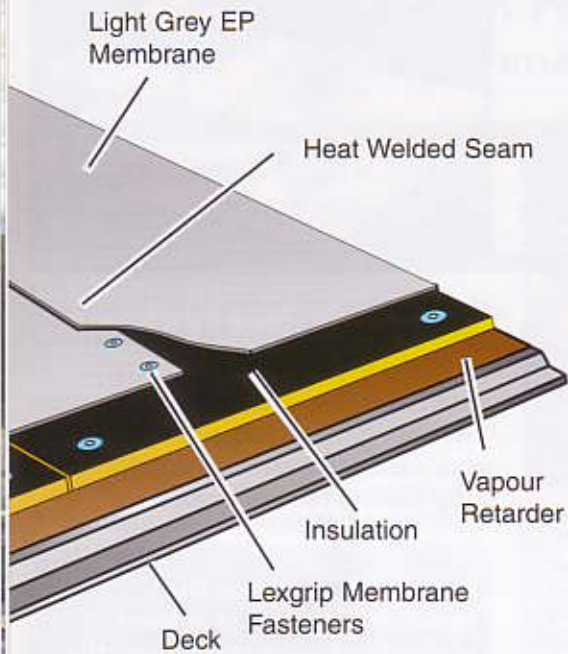
Each system offers advantages in certain applications. More detailed descriptions follow on pages 4 and 5.

System Summary Guide

System	Primary Features	Slope Limitations	Installed Weight/Sq.Ft.	Acceptable Deck Types	Acceptable Insulations ¹	Usual Membranes Used	Required Surfacing
Adhesive Adhered Design A	Ideal for higher slope or irregularly shaped roofs	No slope limitations	Approx. 0.5 kg (1 lb)	Most Types	Must be compatible with adhesives	EP - 1.1 mm or 1.5 mm* EP Fleece-backed - 1.1 mm or 1.5 mm	Exposed Membrane
Loose Laid & Ballasted Design B/C	Economical and fast installation	Dead level to 2:12 (16%)	Approx. 5 kg (10 lbs) minimum	Most Types	Most types; extruded polystyrene if inverted	EP/B - 1.0 mm** EP - 1.1 mm/1.5 mm**	River Stone or Pavers Ballast
Mechanically Fastened Design E	Economical and fast installation Ideal for re-roofing	None, however higher slopes require job specific design	Approx. 0.5 kg (1 lbs)	Notable Deck	Most Types	EP - 1.1 mm or 1.5 mm*	Exposed Membrane
Vented Roof System Design F	Economical and fast installation	None, however higher slopes require job specific design	Approx. 0.5 kg (1 lb)	Deck able to be made airtight	Most Types	EP - 1.1 mm or 1.5 mm*	Exposed Membrane

Notes: * Available in a variety of colours. ** Black membrane suggested. ¹ Consult Lexcan for a complete list of acceptable insulations and substrates.

Hi-Tuff Roofs may be installed in several different w



MECHANICALLY FASTENED

The Mechanically Fastened Roof System (MFRS) takes advantage of the Hi-Tuff membranes super strong tear resistance and heat welded seams to provide a secure, light-weight roof. Economical to install, the mechanically fastened roof system is as popular and reliable in re-roofing as it is for new construction.

In the MFRS, the Hi-Tuff membrane is secured to the structural deck with special membrane fasteners 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 membrane to steel, concrete, lightweight concrete and wood decks. Lexgrip™ fasteners surpass Factory Mutual requirements for wind and corrosion resistance.

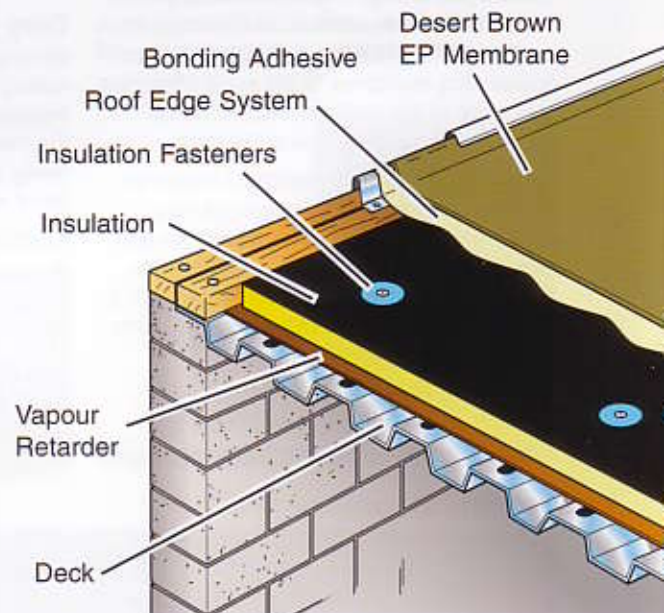


EP Membrane is fastened to substrate with Lexgrip Fasteners.

FULLY ADHERED

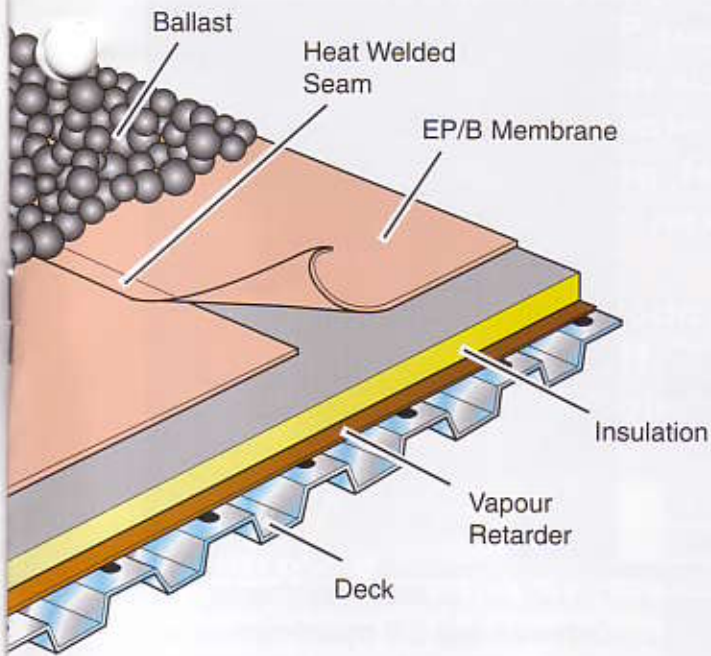
The adhesive adhered system is the most versatile of Lexcan's roofing assemblies. Able to be used on any sloped surface, it is ideal for barrel, saw-tooth or irregularly shaped roofs where corners and direction changes prevail. It is also the system of choice for high-rise buildings or buildings exposed to unusually extreme winds.

In the fully adhered assembly, the Hi-Tuff membrane is bonded to an acceptable insulation or other substrate with Hi-Tuff bonding adhesive; a synthetic rubber based contact cement. Membrane seams are heat-welded to complete the watertight membrane from the parapet to the drain.



EP Membrane is adhered to substrate with Bonding Adhesive.

ys to accommodate almost any type of roofing situation



EP Membrane is loose laid & held to substrate by stone ballast or concrete pavers.

LOOSE LAID & BALLASTED

Hi-Tuff membranes may be used in ballasted roofing applications where superior membrane puncture and tear resistance is desired. In ballasted applications, the membrane is loose laid over top of an acceptable insulation or substrate. Round washed river stone ballast or approved concrete pavers are then placed on the membrane to hold it in place.



HI-TUFF EP . . . AN IDEAL ROOFING MEMBRANE FOR JOBS LARGE AND SMALL . . .



*Madonna Di Canneto Chapel
Windsor, Ontario (10,500 Sq. Ft.)*



*Great Mall of the Great Plains
Kansas City, Kansas (1 million Sq. Ft.)*

The Quality Assured Hi-Tuff EP Roof...

From Manufacturing Through To Post-Installation Inspection

MANUFACTURING

Hi-Tuff EP membrane is manufactured by J.P.S. Elastomerics for Lexcan on a state-of-the-art calendar, overseen by a computer operated QC system. Each roll of membrane is inspected and certified to meet the high standards described below before being approved for shipment.

J.P.S. Elastomerics Corp. is a public company in business since 1863. They pioneered heat weldable rubber roofing technology in the mid seventies and have since installed over one billion square feet of commercial roofing worldwide.

Hi-Tuff EP Engineering Specifications

Property	A.S.T.M. Test Method	Typical EP/B	Typical EP 45 mil*	Membrane 60 mil*
Breaking Strength	D-751 (Grab Method)	0.69 kN (155 lbf.)	1.4 kN (310 lbf.)	1.56 kN (350 lbf.)
Tear Strength	D-751 (Proc. B, 8" x 8" sample)	111 N (25 lbf.)	445 N (100 lbf.)	445 N (100 lbf.)
Elongation, Ultimate	D-412	---	500% min.	400% min.
Shore A Hardness	D-2240	---	82	82
Dimensional Stability (% change max.)	D-1204 Black: 1 hr (@ 212°F/100°C) White: 6 hrs (@ 176°F/80°C)	---	Black:±0.5% White:±0.3%	Black:±0.5% White:±0.3%
Hydrostatic Resistance	D-751 (Method A)	---	2.9 MPa (425 psi)	2.9 MPa (425 psi)
Ozone Resistance**	D-1149 (70 hrs @ 100°F / 37.8°C)	Pass	Pass	Pass
Weather Resistance	G-26, Xenon Arc (4000 hrs @ 176°F/80°C)	Pass	Pass	Pass
	G-90 (Conc. Natural Sunlight)	---	Pass	Pass
Puncture Resistance	FTM 101B (Method 2031)	---	1.6 kN (350 lbf.)	1.91 kN (430 lbf.)
Vapour Transmission	E-96 (Proc. B Cond. BW @ 72°F / 22.2°C)	---	0.035 PERMS	0.035 PERMS
Elongation (%), Ultimate**	D-412, (Die C)	600%	700%	700%
Brittleness	D-2137 (@ -45°C)	---	Pass	Pass
Water Absorption	D-471, (158°F / 79°C for 7 days)	---	2%	2%
Heat Aging (Black Membrane)	D-573 (28 days @ 212°F / 100°C)	---	Break: 1.2 kN (275 lbf.)	Break: 1.2 kN (275 lbf.)

*Thickness (nominal) per ASTM D-751 Test Method.

**Test performed on unreinforced Hi-Tuff EP membrane.

Hi-Tuff Hypalon

Hi-Tuff Hypalon is an alternate heat-weldable membrane system based on a self-curing synthetic rubber polymer. While more costly, the Hi-Tuff Hypalon system offers most all of the same features as Hi-Tuff EP and might be more appropriate in certain applications. Consult Lexcan for further information on Hi-Tuff Hypalon.

APPROVALS & COMPLIANCES

Hi-Tuff EP has been tested and approved in various design systems by



**Factory Mutual
Research Corp.**



**Underwriters'
Laboratories
of Canada**

C.C.M.C. APPROVAL- Acceptance No. 10976L

For further information on specific listings and approvals, refer to the appropriate Lexcan System Data bulletin or consult your Lexcan representative.



Hi-Tuff EP is scrim reinforced between two EP membrane laminates.

MARKETING

Hi-Tuff EP is marketed in Canada by Lexcan - the world pioneer in single ply roofing. For over 30 years, on installations ranging from the Arctic circle to the deserts of Algeria, Lexcan has set new standards in durable, long-lasting commercial roofs. Over 15,000 commercial and industrial buildings across Canada are now protected by Lexcan roofs.



Hot-air corner fabrication with a hot-air hand welder.

From stringent production control through to full jobsite support, the Hi-Tuff EP roof is quality assured from start to finish. For the ultimate in high performance, long-term protection, make your next roof a Hi-Tuff EP roof. Call or write Lexcan today to find out how Hi-Tuff EP can be your roofing solution.

INSTALLATION

Hi-Tuff EP 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.

TECHNICAL ASSISTANCE



Hi-Tuff EP is available throughout Canada through Lexcan's network of regional offices and distributors. Trained sales and technical representatives are at each location to assist you in everything from system selection to jobsite support.

WARRANTY

Superior installation quality and long term performance is guaranteed with comprehensive 'material only' and watertight' warranty packages. Projects are normally inspected both during and after completion by a Lexcan technical representative to provide the best assurance of a quality installation.



*Cornerbrook Civic Centre, Cornerbrook, NFLD.
Design E - White Hi-Tuff EP.*



*Eagle Hardware, Edmonton, Alberta
Mechanically Fastened Hi-Tuff Roof System*

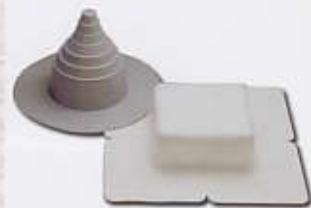
Quality Hi-Tuff EP Accessories

Fasteners, Flashing Accessories & Walkway Pads



*Heat Weldable
Hi-Tuff EP
Walkway Pads*

*Pre-formed
Hi-Tuff EP Pipe
Boots & Corners*



*Lexgrip & Lexgrip
PA Insulation
Fasteners & Plates*

*Lexgrip and
Lexgrip PA
Membrane
Fasteners
and Plates*



*Back Cover Photos:
Victoria Park Community Centre, Ingersoll, ON.
William Fraser Tolmie Apartments, Victoria, B.C.
The Home Depot, Barrie, Ontario
Wal-Mart, Saint John, N.B.*

HI-TUFF EP ROOFING Systems



HI-TUFF EP PROJECTS

Hi-Tuff EP has been employed on just about every type of commercial, institutional or industrial building. Applications include schools, hospitals, defense installations, retail stores, manufacturing plants, distribution warehouses, federal and provincial government facilities, restaurants, hotels, theatres - the list goes on and on. The following is a partial lists of major companies that have Hi-Tuff EP roofs:

- General Motors
- Mercedes-Benz
- Wal-Mart Inc.
- Case Canada
- Sun-X Properties
- Suncor
- B.C. Rail
- The Home Depot
- Abbott Laboratories
- Siemens Corp
- Sears Canada
- The Bay
- Coca-Cola
- Cara Foods
- Mc Cains Foods
- Lamb-Weston
- Eagle Hardware
- Revy Home Improvement Centres
- Canadian Pacific
- Outback Steakhouse
- McDonalds Corp.
- Proctor & Gamble
- IBM
- Intel
- International Paper
- Hewlett Packard
- Kraft Foods
- Lucent Technologies

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Check us out on the web

www.lexcan.com

e-mail: sales@lexcan.com

Other Lexcan Products & Services

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- Parking Garage & Plaza Deck Waterproofing Systems.
- Reservoir & Tank Lining & Cover Systems.
- Chemical/Toxic Waste Systems Containment Systems.

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