



SYSTEM DESCRIPTION

Lexcan's EPDM single-ply membranes offer highly durable waterproofing protection for a wide variety of applications. Lexcan EPDM (Ethylene Polypropylene Diene Monomer) is a highly elastic synthetic rubber membrane ideal for most general waterproofing applications. Membrane sheets are seamed with a special adhesive sealant tape system that assures complete membrane integrity. EPDM is highly flexible and can be installed to provide a tight, substrate hugging membrane.

Lexcan membranes are available in different colours, thicknesses and with optional reinforcing mats or scrim. The physical performance and features of these membranes are presented in separate product data bulletins. This bulletin focuses solely on the features, advantages and design considerations when waterproofing with single-ply membranes.

USES

Lexcan membranes have been used for waterproofing in all of the following applications:

- Plaza Decks
- Tunnels
- Foundations
- Chemical Storage Tanks
- Secondary liner systems
- Water reservoirs
- Fountains
- Canals
- Food Shipment Tanks
- Bridges
- Underground Buildings
- Parking Garages
- Thermal Storage Tanks
- Reflecting Ponds
- Gardens

Lexcan membranes may also be used in a wide variety of chemical or material containment applications including waste water lagoons, sewage treatment plants, food by-product storage tanks and chemical waste storage. Consult Lexcan to verify chemical compatibility of its membranes with the particular environment under consideration.

FEATURES & ADVANTAGES

- **Uniform Thickness** - Lexcan membranes are factory fabricated to an exact, uniform thickness. They assure consistent waterproofing protection throughout the job, without the risk of the material being applied too thin.
- **Weather Resistant** - Lexcan membranes are highly resistant to exposure and weathering. They remain unaffected by extremes in temperature, exposure to sunlight, ozone and fungi growth.
- **Chemical Resistant** - Lexcan membranes are highly resistant to exposure and weathering. They remain unaffected by extremes in temperature, exposure to sunlight, ozone and fungi growth.
- **Abuse Resistant** - Lexcan membranes are very flexible & offer high resistance to tears, punctures and compression loads.
- **Economical** - With sheet sizes up to 10,000 sq. ft., Lexcan membranes permit an installation that is extremely fast and efficient.
- **Safe Installation** - Dangerous hot kettles or torching

equipment are not required to install Lexcan membranes. In addition, there are no odorous or toxic fumes that may inhibit other people from working nearby.

- **Proven Durability** - Lexcan membranes have been successfully protecting thousands of installations across Canada for over 25 years.

APPROVALS & COMPLIANCES

Lexcan EPDM membrane has been tested and conforms to the requirements of CAN/CGSB 37-GP-52M.

DESIGN CONSIDERATIONS

Compatibility

The membrane must be compatible with the adjacent substrates and any material or chemical that it may be exposed to. Chemical compatibility may depend on the level of concentration, mixture with other chemicals, temperature and the presence of any radiation such as sunlight.

Where the chemical compatibility of EPDM is in question, consult Lexcan. Lexcan membranes have been tested for compatibility with a wide variety of standard and unusual chemicals. If it is a substance or mixture that has not been tested previously, however, Lexcan would be pleased to conduct a test with the sample material. Alternatively, Lexcan has special purpose membranes for unusual containment applications where EPDM is not suitable.

Membrane Securement

There are three methods of securing a liner membrane. The most common method used on horizontal surfaces is to simply loose lay and ballast it. Ballast can be either **a)** a wearing slab or pavers **b)** the material being contained itself (in a containment application), or **c)** acceptable earth fill or washed river stone. Note: Where the primary membrane securement is to be the contained material, consideration should be given as to whether the tank will ever be empty. Lexcan recommends that membranes do not remain exposed and unsecured for extended periods of time.

The second method is to mechanically fasten the membrane with an appropriate fastener system. This is often used in canal applications (where there is a strong liquid flow) or around the perimeter of a tank or pond where the membrane is anchored to the wall. Lexcan has both in-seam membrane fasteners and batten bar systems to properly secure the membrane against a variety of stress conditions.

The third method is to fully adhere the membrane to an acceptable substrate. Generally, membranes should be fully adhered with a bonding adhesive to all vertical surfaces and, to properly secure the corner, a minimum 30 cm (12") out onto the horizontal. Lexcan has bonding adhesives that will bond most of our membranes to substrates such as concrete, wood and metal. Use of a bonding adhesive helps ensure the membrane presents a flat, wrinkle-free appearance and is therefore often used in exposed applications such as reflecting ponds or fountains.

Underlying Substrate

The best substrate for a single ply membrane is a smooth, structurally sound, hard surface such as concrete or wood. Rougher substrates will require some degree of protection for the membrane, as described in the next section.

Protection from Puncture, Tears & Abrasion

Most Lexcan membranes are highly resistant to puncture and abrasion and are able to withstand a reasonable level of stress and abuse. Where the risk of sharp objects penetrating the membrane is high, however, a variety of protection course materials are available to provide enhanced membrane protection. These protective layers include:

- Lexcan Protection Mats (heavy duty mats in a variety of weights and strengths)
- Concrete or asphalt* wearing slab
(*: where compatible)
- Layer of Protection Board or Insulation

As an alternative to a separate protection course, certain Lexcan membranes are available factory laminated to a protective mat. This often provides an economical alternative to separate waterproofing and protection layers.

Liner Penetrations

Generally, pipes, conduits and other objects that penetrate the liner membrane should be kept to a minimum. It is usually preferable to avoid liner penetrations by extending leads and conduits from the side overtop of the membrane. Tanks or equipment positioned in the pond should be mounted on pedestal "sleepers" (see Lexcan detail no. L-W-531) that rest on top of the membrane, adequately supported by a load bearing substrate. Where a liner penetration by an irregularly shaped object is unavoidable, it is generally preferable to enclose it in a round pipe that can be easily flashed as per detail no. L-W-522. Flashing to irregularly shaped protrusions such as I-beams is more difficult and often

requires the use of a liquid applied sealer as shown in detail no. L-W-523.

WARRANTIES & WARRANTY REQUIREMENTS

Lexcan fully backs its membranes with optional long-term material warranties. Three preconditions must be met to qualify for a Lexcan warranty:

- The membrane must be installed by an approved Lexcan applicator in strict accordance with current Lexcan specifications and details (or Lexcan approved alterations).
- Lexcan must be advised in writing by the contractor a minimum of two weeks prior to the commencement of the project that a warranty is requested.
- All membrane accessory components must be Lexcan products.

AVAILABILITY & TECHNICAL ASSISTANCE

Lexcan waterproofing membranes are available across Canada through our local offices and distributors. Lexcan representatives will be pleased to assist you in membrane selection and installation design. For the address or telephone number of the office nearest you, please telephone our Head Office at (877) 792-8308, (905) 792-8300 or fax us at (905) 792-8305 or email us at info@lexcan.com.