SPECIALTY PROCESS OVERVIEW

MCA

EVERLIFE LP®

# SPECIALTY LOW PERMEABILITY ASPHALT MIXTURE FOR BRIDGE DECKS AND PARKING STRUCTURES

Waterproofing properties and reduced permeability protect concrete and steel structures

Uses highly polymer-modified, high grade asphalt cement

Uses high quality aggregates with a narrow gradation band

Elevated asphalt cement content to provide durability and extended fatigue life under intense loading

Rut-resistant design

## PRODUCT DESCRIPTION

EVERLIFE LP® is a specialty asphalt mix designed to have waterproofing characteristics that provide an impervious surface layer to concrete surfaces and steel structures, thus preventing the ingression of water, de-icing salts, and chemicals. This low permeability requirement translates into an asphalt mixture with a very low void content, typically below 1.5%, which generally ensures that the hydraulic conductivity of the mixture is less than $1x10^{-7}$ cm/sec when assessed using the ASTM D5084 test method. In addition to its waterproofing properties, EVERLIFE LP® is extremely rut resistant and exhibits excellent fatigue life results.

EVERLIFE LP® uses a highly polymer-modified binder formulated precisely for specialty applications.

## RECOMMENDED USE

Due to its waterproofing characteristics, EVERLIFE LP® is best suited for application on bridge decks, elevated concrete highway decks, parking garages, toll booths, elevated ramps and approaching areas.

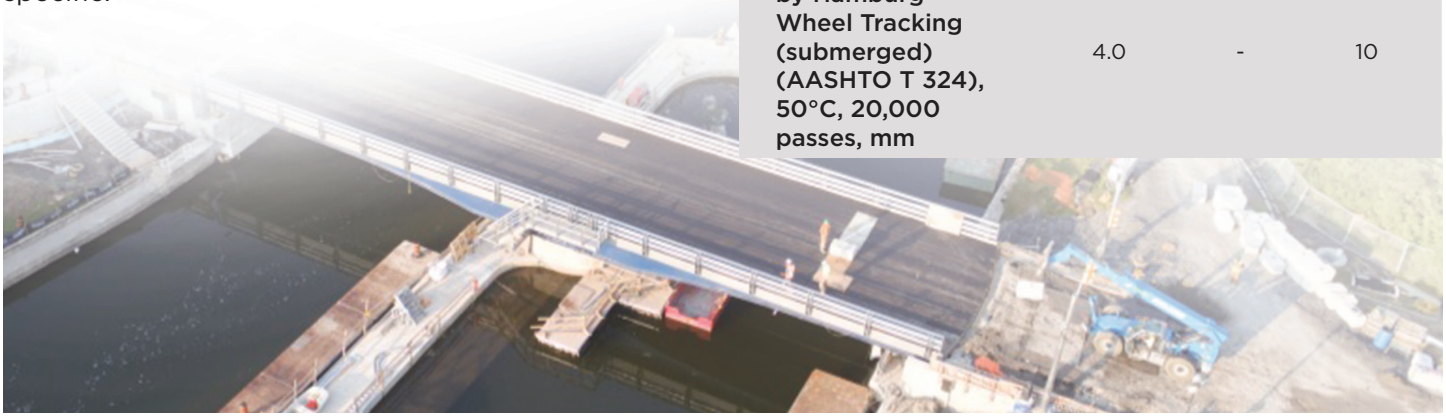
EVERLIFE LP® is especially well suited for areas of heavy duty channelized traffic and areas subjected to high stresses and heavy loading.

EVERLIFE LP® is designed to exhibit exceptionally high fatigue life and is able to withstand the high strains and movement of concrete and steel structures without loss of performance.

EVERLIFE LP® is a simple and a cost-effective replacement for specialty proprietary and/or reactive mixes such as epoxy asphalt, etc.

EVERLIFE LP® can be used with or without a hot-applied membrane. This determination is project specific.

| PROPERTY | TYPICAL RESULTS | SPECIFICATIONS | |
|---|---|---|---|
| | | Min. | Max. |
| **Gradation and PGAC** | | | |
| 9.5 mm, % passing | 96 | 90 | 100 |
| 4.75 mm, % passing | 84 | 55 | 85 |
| 2.36 mm % passing | 55 | 32 | 67 |
| 0.3 mm, % passing | 18 | 7 | 23 |
| 0.075 mm, % passing | 7 | 2 | 10 |
| AC Content, % | 7 | 6.7 | - |
| Minimum PG Spread, °C | 110 | 104 | - |
| **Volumetric and Performance Requirements** | | | |
| Air Voids at $N_{design}$, % | 1.5 | - | 1.5 |
| Voids in Minteral Aggregate, % | 18.9 | 16.5 | - |
| $G_{mm}$@ $N_{initial}$, 6 gyrations, % | 87.4 | 87 | - |
| $G_{mm}$@ $N_{initial}$, 50 gyrations, % | 98.7 | 98.5 | - |
| $G_{mm}$@ $N_{initial}$, 75 gyrations, % | 99.2 | 99 | - |
| Permeability (ASTM D5084), cm/s | 97 E-8 | - | 1 E-7 |
| Fatigue Life by 4-point Bending Beam (AASHTO T 321), 21°C, 750 micro-strain, number of cycles to 50% failure | 1.5 E6 | 0.85 E6 | - |
| Fatigue Life by Semi-Circular Bending (SCB) (AASHTO TP 124), 25°C, I-FIT value | 25.0 | 20 | - |
| Rutting Performance by Hamburg Wheel Tracking (submerged) (AASHTO T 324), 50°C, 20,000 passes, mm | 4.0 | - | 10 |

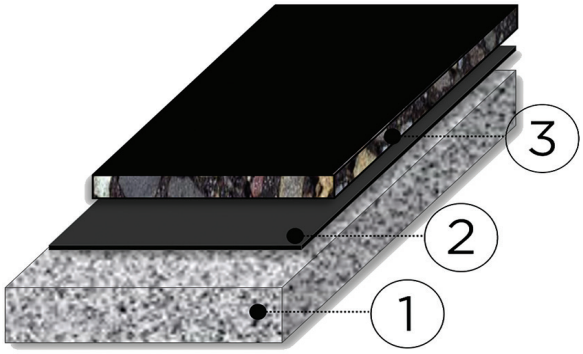


## DESIGN GUIDELINES

EVERLIFE LP® specifications will vary depending on jurisdiction and local practices. *MCA* **Engineering Services** will design the mix to meet or exceed all specifications and performance criteria required, including:

- Custom selection and formulation of the highly modified PGAC
- Aggregate selection and blending
- Designing the mix to exceed all volumetric requirements, ensuring ideal binder content and film thickness
- Performance testing including rutting and fatigue testing
- Hydraulic conductivity testing
- Testing for resistance to oil, salt, and de-icing chemicals

## APPLICATION RECOMMENDATIONS




1. Concrete/steel bridge decks or parking structures
2. BEMALASTIC© Membrane
3. EVERLIFE LP® (CBC tack coat is recommended prior to mix application)

## PRODUCT SUPPORT

With the *MCA* **Advantage**, you get a partner and advisor who will consult with you about designs, specifications, technical services, processes, and material selection. By developing innovative, custom-designed products that offer additional benefits such as peak performance in unique conditions, improved field performance, and greater environmental and health benefits, the *MCA* **Advantage** provides significant long-term cost savings, resulting in lower total cost of ownership.

## CERTIFICATION OF QUALITY

McAsphalt Industries Limited is accredited to the quality management standard ISO 9001, the environmental management standard ISO 14001, and the occupational health and safety standard ISO 45001.

McAsphalt's quality control plan is available to you, providing guidance on the production, lay-down, and compaction techniques required to correctly apply EVERLIFE LP®. In addition, our team of experts is always available to offer unsurpassed technical support during the construction phase.

The quality control plan will ensure that:

- the EVERLIFE LP® is produced at the recommended temperature
- the EVERLIFE LP® PMA is formulated to meet or exceed requirements and is shipped at the correct temperature
- the appropriate lay-down equipment is utilized
- the mix compaction best practices are utilized to achieve EVERLIFE LP®'s target in-situ density.