## LAS-320 Non-Toxic Asphalt Sealer Preserves and Protects Asphalt Surfaces



## What is LAS-320?

**LAS-320** is a specialized asphalt sealcoat developed with advanced technology used for military runway construction. It offers a high-performance alternative to traditional sealcoats for long-lasting protection to asphalt surfaces. Unlike traditional sealcoat products, LAS-320 is a polymeric emulsion that penetrates and integrates into the asphalt surface that provides superior protection against environmental damage. Unlike conventional sealcoats that only create a surface layer, LAS-320 infuses into and bonds with the asphalt offering deep protection.

**LAS-320** is different from conventional sealcoating products and is based on chemistry that has been tested, evaluated, and approved for use as a Fuel Resistant Sealer by the US Army and FAA.

**LAS-320** preserves and extends the life cycle of asphalt by eliminating the two most damaging factors. Water intrusion which can lead to base or freeze/thaw failure and Ultra-Violet deterioration which results in oxidation and breakdown of the asphalt hydrocarbons which results in making asphalt brittle.

**LAS-320** dries in minutes and will not track, it provides long term protection to extend the life of asphalt by ten years or more with just one application.

## **Enviroseal LAS-320**

- No odor and No tracking
- Environmentally safe No PAH
- Repels most liquids and chemicals
- Low VOC with only 94 Grams per Liter
- Dries quickly- usually less than 15 minutes
- Non-toxic Non-hazardous Non-flammable
- Can be striped within 30 Minutes after drying
- Classified as a Fuel Resistant Sealer by the FAA
- Eliminates premature degradation and UV damage
- Ease of application, can be applied with a broom or sprayed
- Coverage rates 60 to 150 square feet per gallon (1.5 to 3.7 M2/Liter)









#### LAS-320 is designed to

**Protect** Asphalt surfaces from degradation caused by UV, water, fuel, or chemical spills. Asphalt pavements will not last forever; external factors destroy the asphalt oil that binds it all together. When oxygen and water combine with the asphaltic binder, a chemical change takes place. At first, this process is necessary for the pavement to become hard and firm. Over time if this process is not arrested, a complete deterioration of the asphalt surface will take place and reduce the pavement to a layer of loose stone. The asphalt binder is essentially what differentiates a gravel road from a paved road. Heat & Sunlight accelerate the deterioration process; salt and other chemicals act as a catalyst.

**Preserve** The integrity of asphalt to seal the exposed surface making it impermeable and locking in the binder properties which provides flexibility and binding qualities. Using LAS-320 can waterproof and prevent water damage which leads to base deterioration and eliminate freezethaw cycles.

**Provide** Resistance to fuel and chemical damage, weathering, and oxidization, all while providing aggregate retention. This sustainable process improves safety, reduces maintenance costs, extends the life cycle of the existing surface, and offers the best value asset management solution. Treated surfaces can be opened to light traffic in as little as 30 minutes.

## **Unprotected Asphalt**



Factors that cause asphalt pavement to deteriorate

- Fuel Spills
- Ultra-Violet
- Water intrusion
- Freeze-Thaw Cycles

These issues result in the breakdown of asphalt and it continues until replaced or sealed with LAS-320

## **Typical Asphalt Sealers**

Typical sealer emulsions build up on the surface and cannot adsorb into small cracks. These emulsions "Bridge" over the cracks and usually dry out quickly becoming brittle

Typical emulsions only "Bridge" the gaps and do not fill cracks and voids Which leaves asphalt vulnerable to damage



## **Asphalt Protected with LAS-320**



LAS-320 adsorbs into and seals the surface and creates a barrier to protect against water, UV, fuel, and chemical damage.

LAS-320 remains flexible to expand and contract from daily temperature fluctuations

LAS-320 preserves the asphalt life cycle by Ten years or more with a single application

LAS-320 can eliminate Freeze Thaw damage which reduces potholes and cracking

## FAA Laboratory Testing on LAS-320

A detailed study has been prepared under the Airport Asphalt Pavement Technology Program (AAPTP) with funding provided by the Federal Aviation Administration (FAA) Cooperative Agreement Number 04-G-038. A complete copy of this report is available upon request.

Protection of pavements from damage associated with fuel spills or oil leaks has long been recognized as an important component of any airport pavement maintenance plan. Aircraft fuels, hydraulic fluids and most lubricating oils are produced by refining crude oil.

Asphalt binder used in the construction of Hot Mix Asphalt (HMA) pavements is also a product of the crude oil refining process. Fuels, oils, and asphalt are chemically compatible and readily mix with each other which results in a softening of the asphalt that leads to degradation of the pavement.

					that none of the sealer dissolved.
Material	Tile Test	Ranking for each test procedure			
		Laboratory Fuel Permeability Test	Laboratory Fuel Infiltration Test	Field Fuel Infiltration Test	FUEL AFTER 24 HOUR SOAK
LAS – 320	Passed	1	1	1	
Coal Tar	Passed	2	2	2	
CarbonPlex	Failed	3	3	3	
TRMSS	Failed	5	5	5	
SS -1	Failed	4	4	4	CUNTREATED TREATED AFTER 24 HOUR SOAK

The kerosene is completely clear which indicates

#### LAS-320 vs Coal Tar

Standard sealers are highly aromatic and not compatible with petroleumbased fuels and lubricants because they are made from the same hydrocarbons. Coal tar sealer is a thin layer that begins breaking down and cracking soon after application.

Pavement sealants that are derived from coal tar produce PAHs when they break down. According to the Environmental Protection Agency, these compounds are a source of pollution that harm aquatic wildlife causing issues such as inhibited reproduction, immune deficiencies and mortality. Studies found that PAHs are significantly elevated in stormwater flowing from where coal-tar sealcoats were used.



- The thermal expansion of coal tar sealers is different from the underlying pavement which results in cracking of the coal tar sealer and requires repeated applications.
- Coal tar contains high amounts of Polycyclic Aromatic Hydrocarbons (PAHs) that are proven to cause mutagenic and carcinogenic effects
- Contact creates health hazards when PAHs are absorbed through the skin

# LAS-320 is free of Polycyclic Aromatic Hydrocarbons (PAHs)



Studies by the U.S. Geological Survey (USGS) along with State and local agencies have identified coal-tar-based sealcoat as a major source of contamination from PAHs and a concern for human health and aquatic life.

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"The increased cancer risk associated with coal-tar-sealed asphalt (CSA) likely affects a large number of people in the U.S. Test results indicate that the presence of coal-tar-based pavement sealants is associated with significant increases in estimated excess lifetime cancer risk for nearby residents," said E. Spencer Williams, Ph.D., principal author of the study and Baylor University assistant research scientist at the Center for Reservoir and Aquatic Systems Research in Baylor's College of Arts & Sciences.

## **Application of LAS-320**

**SURFACE PREPARATION** The surface should be cleaned by Blowing, sweeping and/or pressure washing. Oil stains should be cleaned thoroughly with detergent and rinsed clean with water. The area to be treated should be dried and cleaned 24-hours prior to application. Mask or shield overspray if necessary to adjacent areas prior to or during installation.

**BRUSH METHOD** Simply pour LAS-320 on the surface and spread liberally with a push broom. Approximate coverage is 100 square feet per gallon (2.5 square meters/liter) depending on surface condition and application method. Work the LAS-320 thoroughly into the asphalt surface and brush out all puddling while still wet.

<u>SPRAY METHOD</u> Apply LAS-320 uniformly to coat the surface under low pressure allowing it to penetrate and seal thoroughly. Broom out any puddling prior to drying and avoid overspray, use shields as necessary.

<u>APPLICATION TEMPERATURE</u> Do not apply at temperatures below 35°F (1.5°C) or surface temperature over 130°F (55°C), do not allow to freeze.

<u>CURE TIME Treated surfaces can be opened to light traffic in as little as 30 minutes although a minimum 12-hour cure is recommended. If stripes are to be painted, allow 30 minutes or more of dry time. Actual cure time will depend on site and ambient conditions like temperature, wind, and humidity.</u>

<u>CLEAN UP</u> Clean all equipment immediately with fresh water. As with any chemical, proper safety and personal protection equipment is recommended. Refer to SDS and all product information before use and follow safety precautions. LAS-320 will stain any surface it contacts and preparation is necessary.

<u>SLIP RESISTANCE</u> Sand can be manually broadcasted at a rate of 0.26 pounds per square yard (150 grams/M2) to increase slip or skid resistance. Immediately after LAS-320 is applied, broadcast sand evenly before it dries.

## **Crack Repair with LAS-320**

LAS-320 has thin viscosity allowing it penetrate and fill fine cracks to create a permanent repair against water seeping into the surface.

Larger cracks can be filled with coarse sand and then saturate with LAS-320 allowing it to permeate deep into the cracks. When dried it binds, and solidifies the sand inside the crack. This process creates a solid mass that prevents water intrusion.

LAS-320 remains flexible to expand and contract with the asphalt through daily temperature fluctuations.





### **Previous Applications**



## **LAS-320 Packaging**

Enviroseal supplies LAS-320 in pails, drums, and totes. Export shipping and Concentrate available for commercial accounts

