

LAS-320

Non-Toxic Asphalt Sealer

Preserves and Protects
Asphalt Surfaces



Enviroseal

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What is LAS-320 ?

LAS-320 is a non-asphaltic polymeric emulsion that is used for sealcoating and preserving oxidized and damaged asphalt surfaces. It is non-toxic and non-hazardous with a VOC (Volatile Organic Content) of 94 grams per liter and does not contain harmful chemicals or PAH (Poly Aromatic Hydrocarbons) to pollute our environment.

LAS-320 is different from conventional sealcoating products and is based on chemistry that was developed for construction of unpaved runways for US military applications. It has been evaluated, tested, and approved for use as a Fuel Resistant Sealer by the USACoE and FAA.

LAS-320 dries fast, will not track, and provides long term protection against premature asphalt degradation and failure from water, fuel or UV damage. LAS-320 extends the life of asphalt by ten years or more with just one application.

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

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 60 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**
- **Diluted Coverage rates 60 to 150 square feet per gallon (1.5 to 3.7 M2/Liter)**



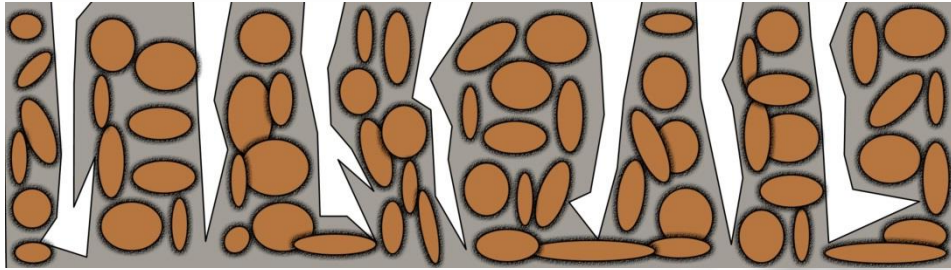
LAS-320 is designed to

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 freeze-thaw cycles.

Provide Resistance to fuel and chemical damage, weathering, and oxidization, all while providing aggregate retention. This sustainable process improves safety, reduces maintenance, 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

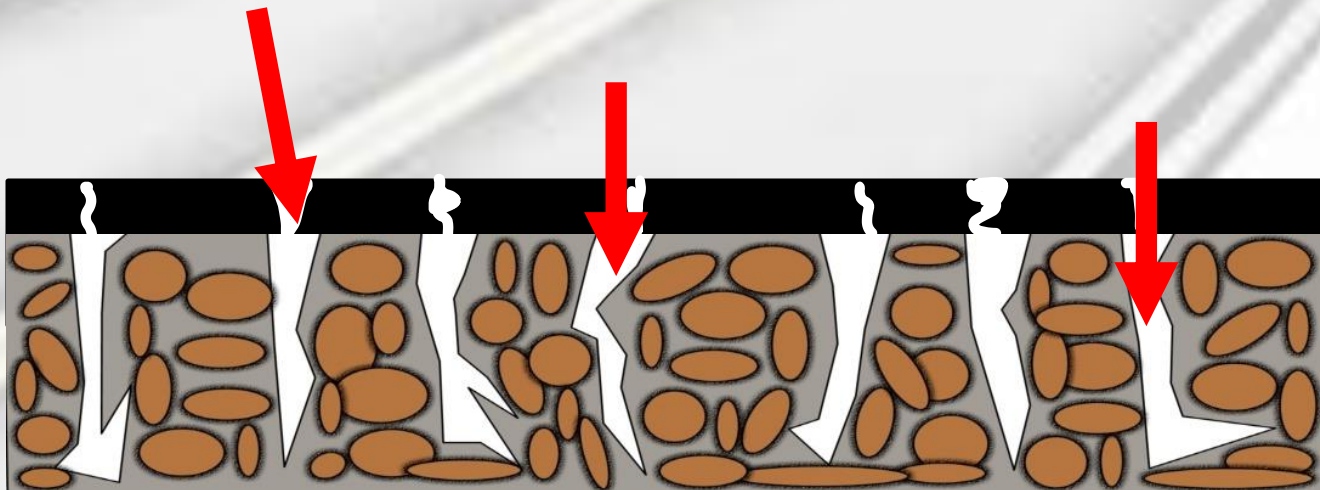
- Fuel Spills
- Ultra-Violet
- Water intrusion
- Freeze-Thaw Cycles

All these issues result in the breakdown of asphalt and it will continue 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 existing cracks to protect against water damage.

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

LAS-320 shields against fuel and chemical damage

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

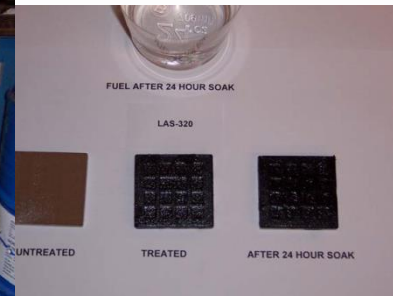
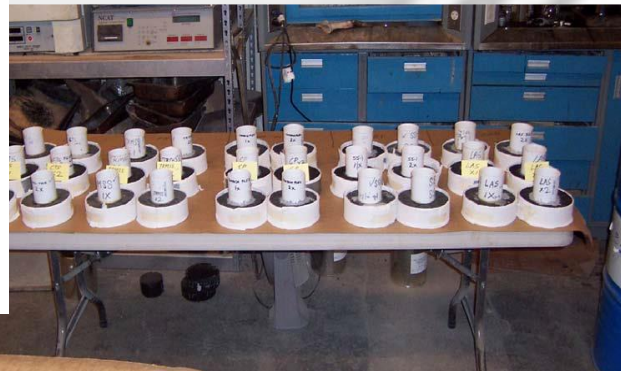
A detailed study has been prepared under the Airport Asphalt Pavement Technology Program (AAPT) with funding provided by the Federal Aviation Administration (FAA) Cooperative Agreement Number 04-G-038. A complete copy of this report is available upon request.

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 cement 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.

The kerosene is completely clear which indicates that none of the sealer dissolved.

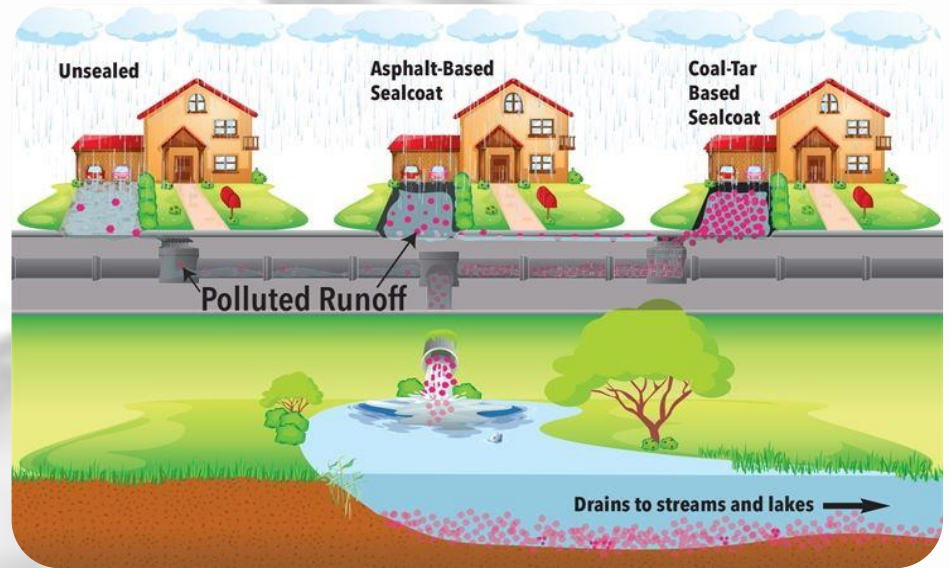
Material	Tile Test	Ranking for each test procedure		
		Laboratory Fuel Permeability Test	Laboratory Fuel Infiltration Test	Field Fuel Infiltration Test
LAS - 320	Passed	1	1	1
Coal Tar	Passed	2	2	2
CarbonPlex	Failed	3	3	3
TRMSS	Failed	5	5	5
SS -1	Failed	4	4	4



LAS-320 vs Coal Tar

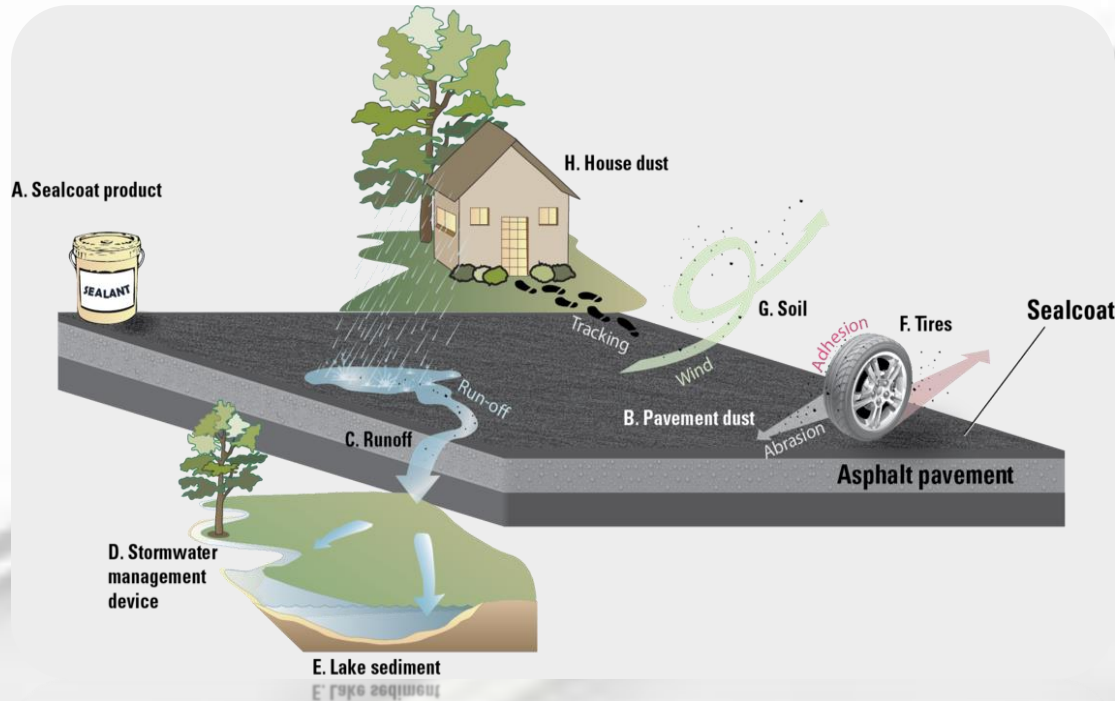
Standard sealers are highly aromatic and not compatible with petroleum-based fuels and lubricants because they are made from the same hydrocarbons. Coal tar sealer is a thin layer that begins breaking down and cracking soon after application.

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.

"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. Prime affected areas as necessary with LAS-320 and allow to dry before finishing entire area. 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 60 to 150 square feet per gallon (1.5 to 3.6 square meters/liter) depending on surface and application method. Work the LAS-320 thoroughly into the asphalt surface. Brush out all puddling while still wet.

SPRAY METHOD

Apply LAS-320 sufficiently 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. Typical application rates average 90 sf/Gal (0.1 gal/Yd² or 2.2M²/liter)

APPLICATION TEMPERATURE

Do not apply at temperatures below 40°F (4.5°C) or surface temperature over 130°F (55°C), do not allow to freeze

CURE TIME

Normally a treated surface can be opened to light traffic in as little as 30 minutes although touch up may be necessary. If stripes are to be painted, 90 minutes of dry time is recommended. A minimum 12-hour cure is recommended before area is opened to light vehicular traffic. All times approximate and will depend on ambient conditions.

CLEAN UP

LAS-320 will stain most any surface it contacts, proper preparation is necessary. Clean all equipment immediately with fresh water. As with any chemical, proper safety and eye protection is recommended. Refer to SDS, read and understand all product information, and follow safety precautions.

SLIP RESISTANCE

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. Additional brooming may be necessary for uniformity.

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 soaked with LAS-320 so it permeates into, 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



**275-Gallon
IBC Tote**

**5-Gallon
Buckets**



55-Gallon Drums