

SIP-1132

Fog Seal Emulsion

Technical Data Sheet



SIP-1132 is a fast-setting, water-based emulsion of specialty epoxidized soybean oil (SESO) designed for topical pavement maintenance (fog seal). The active biobased component penetrates the asphalt pore network and rejuvenates aged binder, providing a breathable barrier to air and water. Unlike bituminous fog seals, SIP-1132 chemically restores binder properties rather than merely coating the surface. Typical penetration is up to ~1/2 inch, depending on surface texture and temperature.

PHYSICAL PROPERTIES

APPEARANCE	White to light yellow
SOLIDS CONTENT (%)	30
VISCOSITY (AS SUPPLIED)	500–2,000 cP @ 25°C
DENSITY @ 25°C (g/cm ³)	0.98
pH	7.1 (neutral)
ACTIVE OIL OXIRANE (%)	2.2
ACID VALUE (mg KOH/g)	0.11
RETURN TO TRAFFIC ^a	<30 min
STORAGE TEMPERATURE	40–80°F
SHELF LIFE	Up to 12 months when stored as directed

WHERE TO USE

- Dense-graded HMA
- Open-graded HMA
- Chip seal surfaces
- Low to moderately oxidized pavements
- Micro-porosity sealing applications

KEY FEATURES

- Fast return to traffic (<30 minutes)^a
- Restores/maintains surface friction
- No effect on pavement markings
- Binder rejuvenation
- Reduces permeability
- Water-based, non-bituminous
- Environmentally friendly

APPLICATION RATES

Standard Dense-Graded HMA:

30% solids at 0.025 gal/yd² (0.113 L/m²)
15% solids at 0.050 gal/yd² (0.226 L/m²)

Target Residual Ranges:

Dense-graded HMA	0.015–0.021 gal/yd ²
Open-graded HMA	0.021–0.027 gal/yd ²
Chip seal (<3/8" agg)	0.027–0.033 gal/yd ²
Chip seal (≥3/8" agg)	0.029–0.039 gal/yd ²

APPLICATION GUIDANCE

Weather Requirements:

Pavement and ambient ≥40°F and rising
Dry surface, winds <10 mph
No rain expected before set
Apply ≥2 hours before sunset

Surface Preparation:

Mechanically sweep ~30 min before
Hand broom depressions
Cover utilities/iron before application

Equipment:

Standard asphalt distributor
Ground speed interlock
Uniform double-lap fan spray
Nozzles oriented 15–30° equal height

Dilution:

Dilute 1:1 by volume: 1 part concentrate to 1 part potable water
Mix with gentle agitation
Apply same day for best results

PACKAGING SIZE

- 5-gallon Pail
- 55-gallon Drums
- 275-gallon Tote
- Tanker (45,000 lbs.)



FIELD-VERIFIED PERFORMANCE

Performance Aspect	Test Method / Observation	Results
Friction Restoration	ASTM E303 BPN and DFT	Improved skid resistance within minutes to 1 month
Pavement Markings	Reflectivity measurements on St. Michael test sections	No adverse effect on marking reflectivity
Binder Rejuvenation	BBR stiffness & m-value testing	Restoration toward unaged controls
Sealing Effect	Field permeability testing	Reduced permeability vs. controls
Return to Traffic	Field observations under favorable weather	Typically <30 minutes to no-track/open ^a

SAFETY, HANDLING & LIMITATIONS

Storage & Handling:

Keep containers tightly closed. Heat sensitive - do not allow to freeze. Store cool and out of direct sun. Clean tools with water before material cures.

Limitations:

Not a structural repair. Do not apply over standing water or in freezing conditions. Confirm rate with test strip prior to full production.

QUALITY ASSURANCE & DOCUMENTATION

Each production lot ships with a Certificate of Analysis listing viscosity (ASTM D445), density (ASTM D1475), pH (ASTM E70), and oil phase oxirane & acid value (AOCS methods). Follow lot-specific expiration as indicated on the CoA.

WARRANTY & DISCLAIMER

The information herein reflects current knowledge and test data as cited. Because application conditions vary and are beyond SoyLei's control, no express or implied warranty is made as to results. Always verify rate and performance on a job-specific test strip and consult the SDS before use.

