



Real Science. Real Results.

Longitudinal Joint Preservation

And More...

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Pavement Technology, Inc.



RE-CAP

- Asphalt Rejuvenation is an inexpensive and very cost effective means for extending the life of asphalt pavements.
- **Petroleum Maltene** based rejuvenator application has been used for over 50 years and has a documented and proven history of effectiveness.

RE-CAP

- **Petroleum Maltene** based rejuvenation works by changing the chemistry of the asphalt binder to new or nearly new condition.
- Rejuvenation seals the pavement's surface, restores flexibility and restores the asphalt binder's cohesive ability to act as a glue and retain aggregate.

ASPHALT PAVEMENT



**94%
Sand & Stone**



**6%
Asphalt Cement
(liquid)**

Slide 4

CD1

Colin Durante, 6/3/2008

Rejuvenation

Components of Rejuvenators

First acidaffins

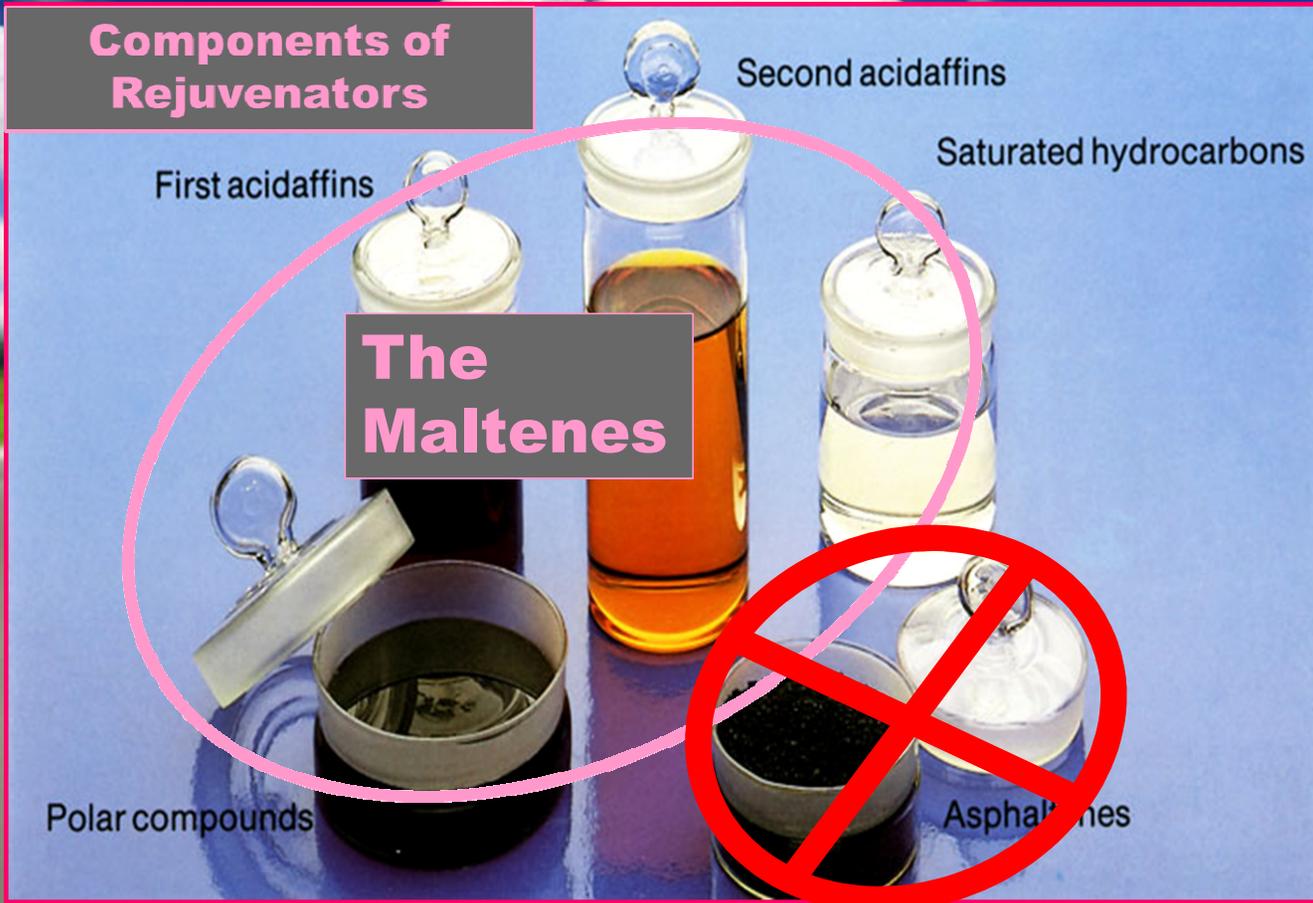
Second acidaffins

Saturated hydrocarbons

The Maltenes

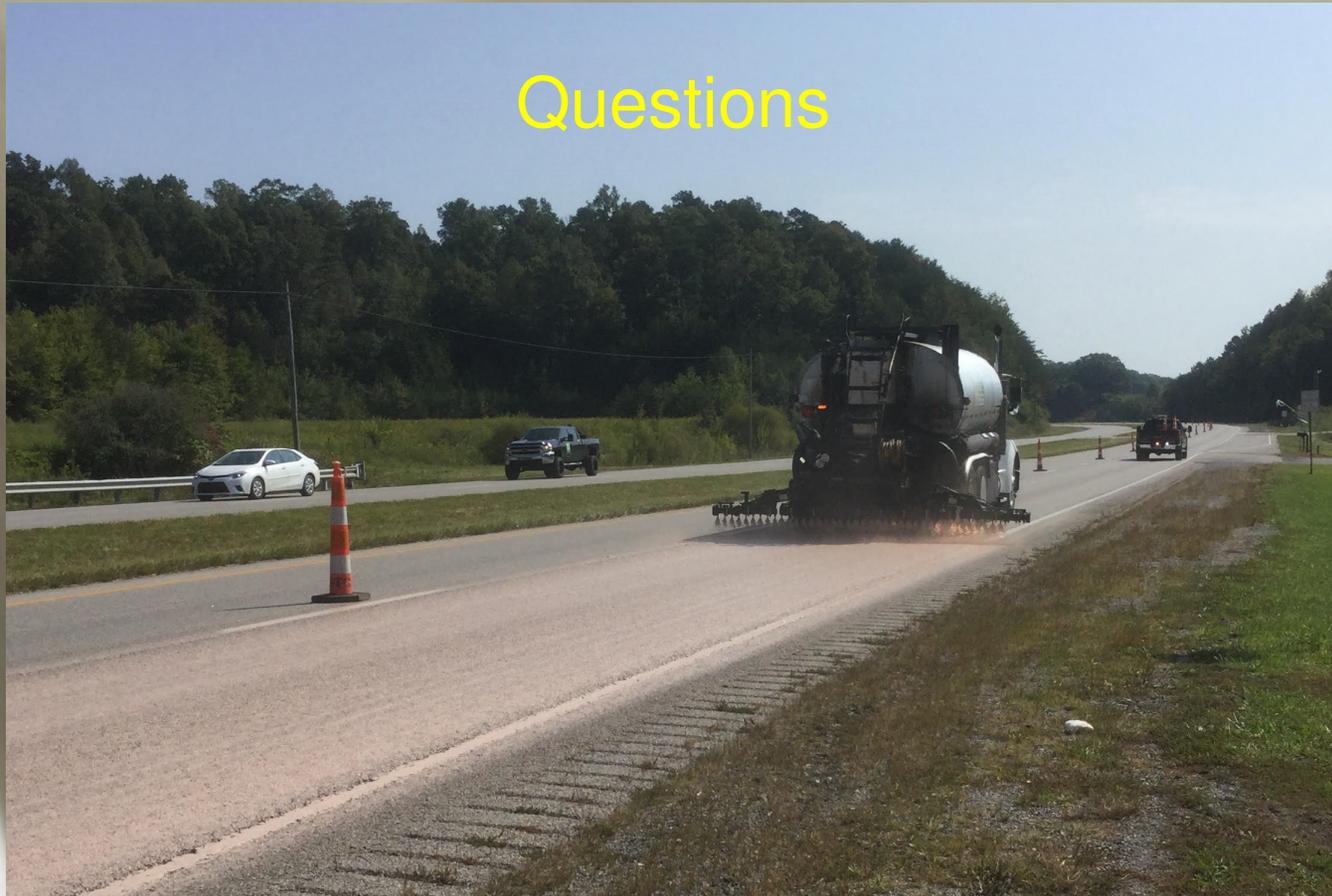
Polar compounds

Asphaltenes



Effective preventative maintenance
“Right Road with the Right Treatment at the Right Time”

Questions



New Applications Utilizing Petroleum Maltene Rejuvenation

- Longitudinal Joint Stabilization
- Surface Texture and Rejuvenation
- Reclaimed Asphalt (RAP) Rejuvenation
- A.R.A.-1Ti

JOINTBOND

Longitudinal Joint Stabilizer



A photograph of a long, straight asphalt road stretching into the distance. The road has a yellow dashed center line and white edge lines. The pavement appears to be newly laid, with a visible longitudinal construction joint running down the center. The surrounding landscape includes grassy areas, trees, and a few buildings in the background under an overcast sky.

The weakest part of a new asphalt pavement is the longitudinal construction joint between paving machine passes.



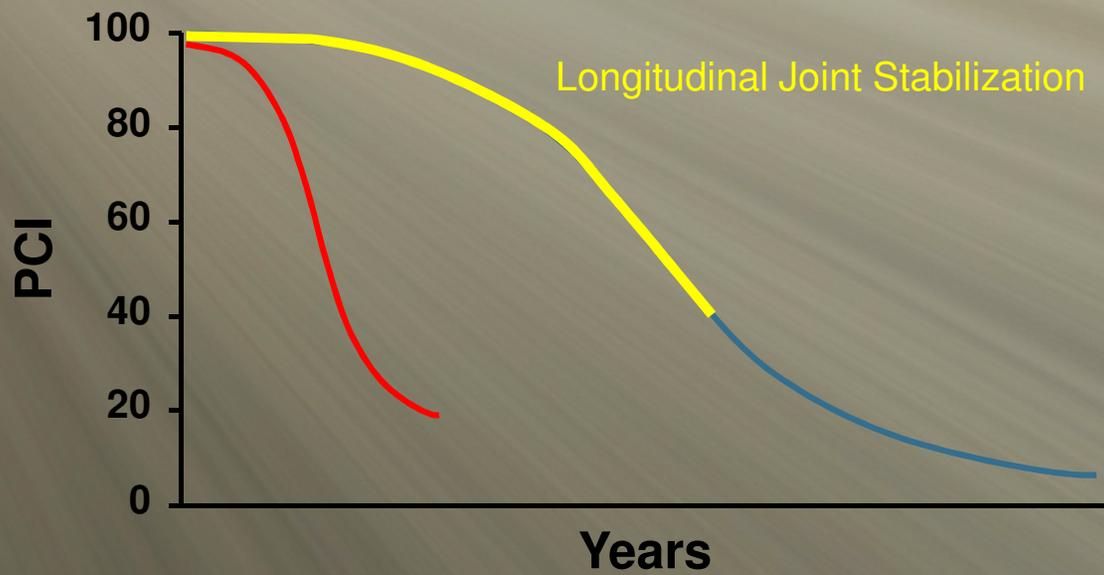
ATTRACTIONS - E

 WHITAKER BANK DALLAS, TX	 RED MILE RACETRACK
 SHADY BROOK GOLF	 WHITAKER BANK DALLAS, TX



Pavement Deterioration Curve

Less Density Allowing Faster Environmental Deterioration



What is “JOINTBOND?”

- **JOINTBOND**[®] is a Polymerized Maltene Emulsion formulated to penetrate the longitudinal joint quickly and fortify the weakest area in new asphalt construction, the area one foot to one and one half foot either side of the joint.
- **JOINTBOND**[®] is intended for use on new pavements, typically up to one year old.

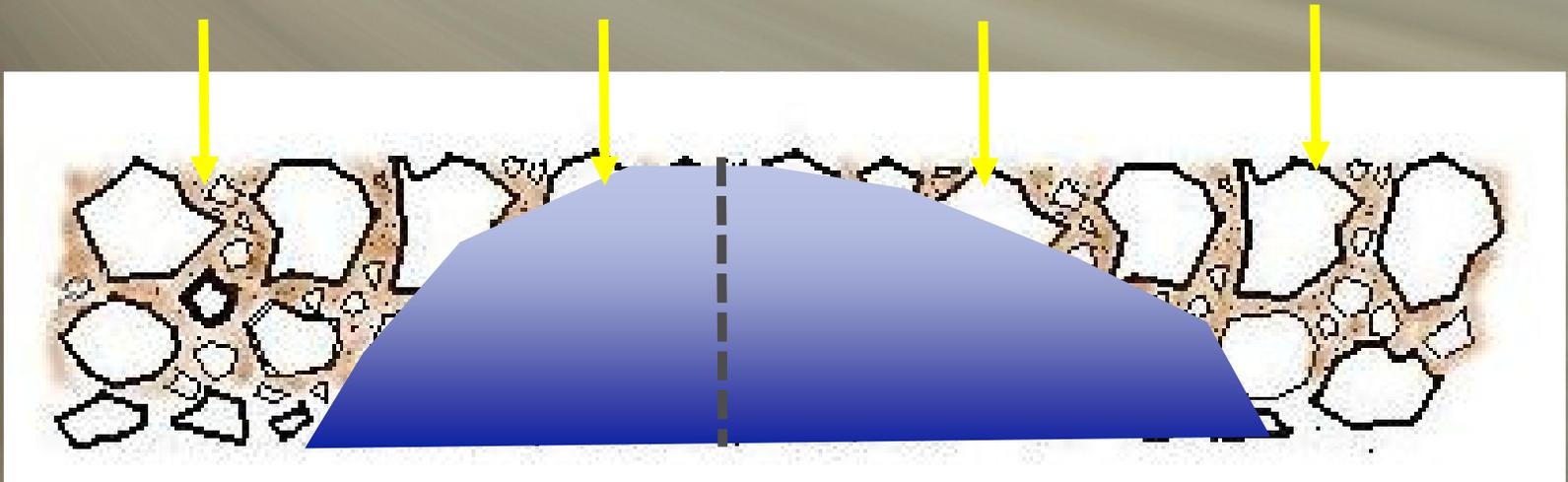
JOINTBOND[®]

Contains natural petroleum maltenes
enhanced with a polymer



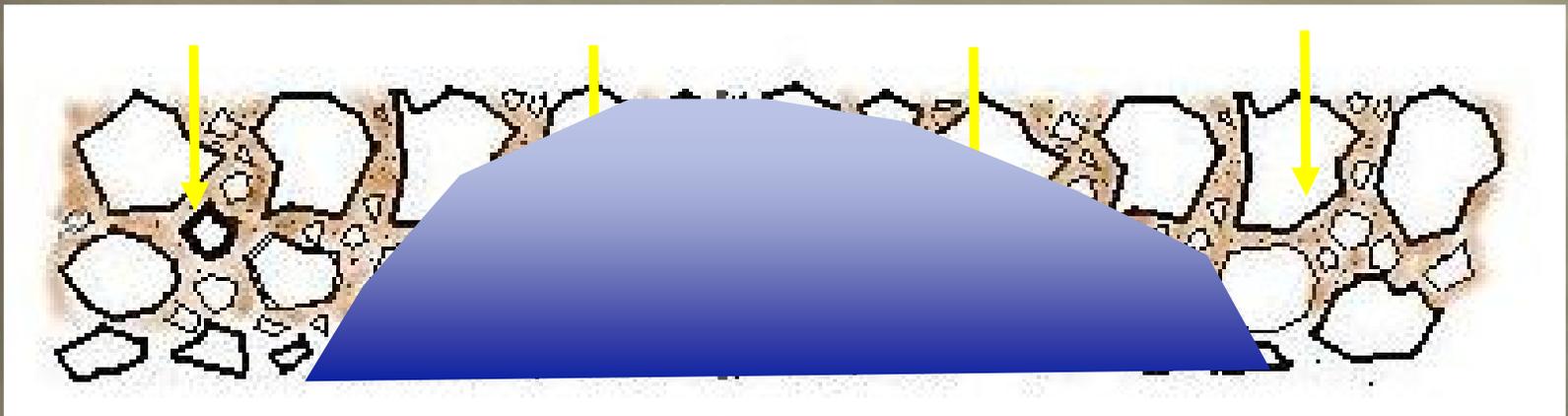
Penetrate Into the Pavement

JOINTBOND[®]



Penetrate Into the Pavement

JOINTBOND[®]



JOINTBOND[®] Application





JOINTBOND[®] Applied To
The Longitudinal Joints

JOINTBOND® Quickly Penetrates Pavement!



JOINTBOND® Quickly Penetrates Pavement!



JOINTBOND® Striping Not Obliterated



JOINTBOND[®] After Three Years



**Untreated joints are beginning to crack
and separate after three years**



JOINTBOND[®] Sealing Effects After Ten Years
At A Different Location





Not Treated

Treated with JOINTBOND®



Yes, It Does Work!



Rumble Strips













The JOINTBOND[®] treated area clearly becomes impervious to water and salt brine intrusion.



Petroleum Maltene based longitudinal Joint Stabilizer applied as a construction seal on new pavement joint



Questions

Joint Stabilization after complete absorption

Surface Texturing and Rejuvenation



Surface Texturing





New Faces are cut into the surface aggregate

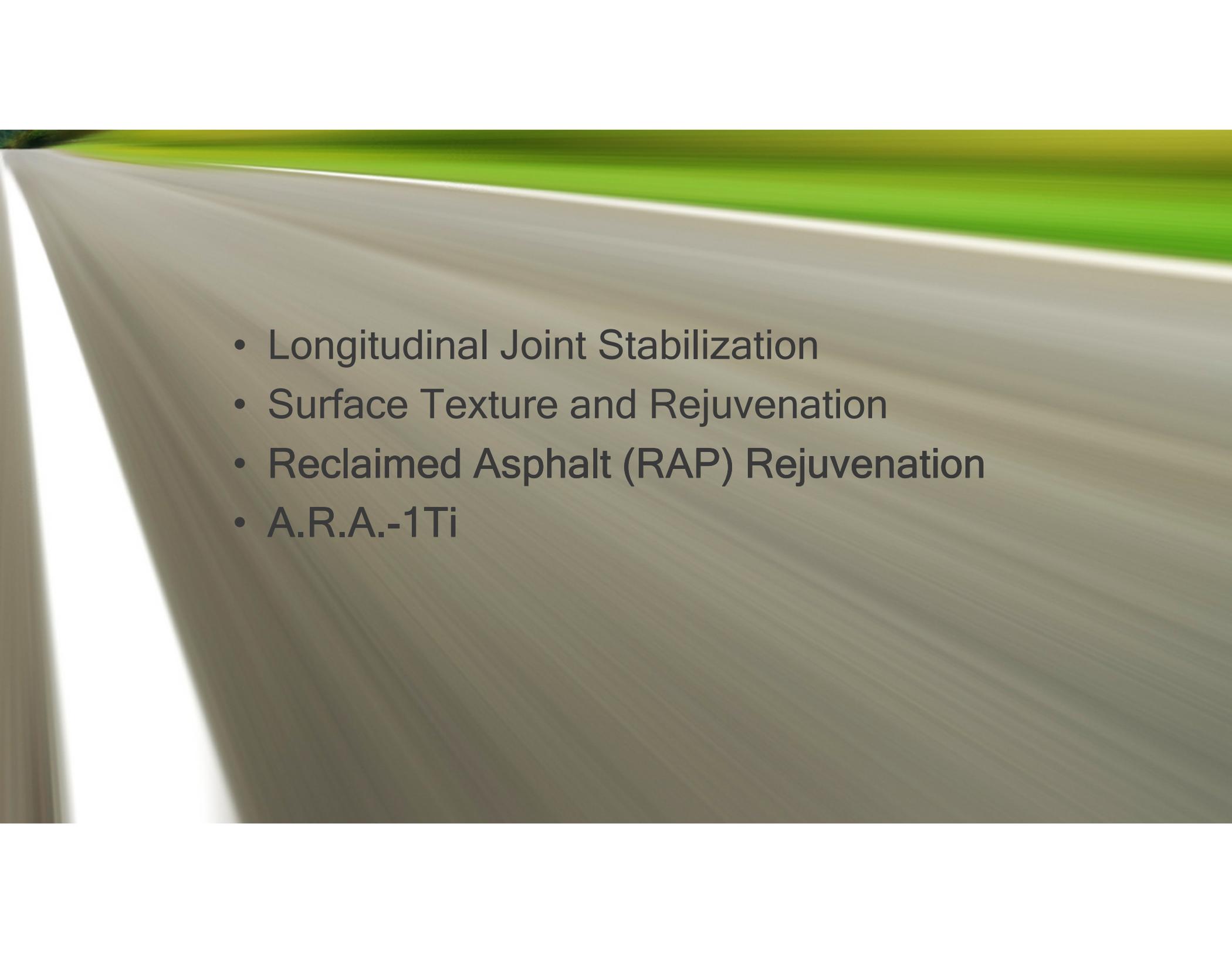




Questions

Reclamite Applied



- 
- A perspective view of a road surface, likely asphalt, with a green field in the background. The road surface is the primary focus, showing a slight curve and texture. The green field is visible in the distance, and the overall scene is brightly lit.
- Longitudinal Joint Stabilization
 - Surface Texture and Rejuvenation
 - Reclaimed Asphalt (RAP) Rejuvenation
 - A.R.A.-1Ti

Reclaimed Asphalt Pavement (RAP)



A.R.A.-1Ti



Pavement Technology, Inc.

800-333-6309

www.pavetechinc.com

A.R.A.-1-Ti® pollution-reducing polymerized rejuvenating seal

Formulated from the same maltene fractions that vitalize asphalt binders, A.R.A.-1-Ti® rejuvenating seal revitalizes aging asphalt while leaving behind a self-cleaning surface that removes nitrogen oxides (NO_x), volatile organic compounds and other pollutants introduced into the atmosphere through vehicular exhaust. The air-purifying surface perpetually regenerates itself throughout the life of the pavement, contributing to compliance with U.S. EPA's stringent new National Ambient Air Quality Standard (NAAQS). The ideal solution for government agencies dealing with reduced budgets, deteriorating infrastructures and pollution concerns.

Markets

- DOTs
- Urban/Suburban Municipalities, Counties, Gated Communities
- Airports
- Bridges
- Parking Lots
- Highway Shoulders

Compatible Substrates

- For newly constructed asphalt pavement, A.R.A.-1-Ti rejuvenating seal improves durability by replacing volatile components lost to the heat of production, providing an in-depth seal to reduce permeability.
- For older asphalt pavement, A.R.A.-1-Ti rejuvenating seal reverses the effects of UV, weathering and water intrusion by reintroducing volatile components deep into the asphalt to restore ductility and flexibility.

Benefits

- Penetrates deeply to protect against air and water – not a topical coating
- Provides a self-cleaning, self-regenerating, air-purifying surface that removes nitrogen oxides (NO_x), volatile organic compounds (VOC) and other airborne pollutants from the atmosphere for the life of the structure
- Prevents stripping and raveling of the aggregate
- Reduces long-term pavement maintenance costs by extending the life of new and existing asphalt pavements:
 - Increases the durability of the top portion of new asphalt pavements
 - Improves the ductility and flexibility of the top portion of aging asphalt pavements
- Will not obliterate striping and other markings
- Supports NAAQS compliance

How It Works

The A.R.A.-1-Ti maltene-based emulsion restores the reactive components that asphalt pavements lose due to hot-plant operations and the aging process. The emulsion delivers photocatalytic TiO₂ deep into the asphalt surface, leaving behind a photocatalytic surface layer that removes NO_x, volatile organic



A.R.A.-1-Ti® Application

compounds (VOC) and other airborne pollutants from the atmosphere for the life of the pavement. As weather and traffic wear the surface layers of pavements, deeper layers of TiO₂ are exposed at the surface in a self-generating process of air purification.

How to Apply

Temperature

Apply only when ambient temperature is expected to remain at or above 40°F during application and for the next 12 hours.

Surface Preparation

Surface must be dry with no threat of rain within 4 hours of application.

Field testing shall be performed prior to application to determine the maximum amount of material that the pavement can absorb within a 20 minute period. Contractor shall apply various test strips ranging in length from 100-150 ft. using different rates, noting the time it takes for total absorption to occur without surface residues remaining.

Application Method

A.R.A.-1-Ti rejuvenating seal must be applied by an approved applicator using a computerized distributor truck cleaned of all other materials to prevent contamination.

Apply uniformly to all surfaces. Where grades / elevations are prone to excessive runoff, multiple applications may be required; successive applications must be made as soon as complete penetration of previous applications has occurred.

A light application of dry sand or rock dust shall be applied to all treated pavement after absorption and prior to reopening to traffic; if spills or misapplication occur, a heavier application may be required. The sand or rock dust should be removed within 24 hours.

(continued)



Rejuvenation



Longitudinal Joint Stabilization



Shoulders



Rumble Strips



Photocatalytic Oxidation



Surface Abrasion



Real Science. Real Results.

Thank you

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