Florida Association of Counties 78th Annual Conference and Educational Exposition

> June 13 – 14, 2007 Orlando, Florida



- Routine Maintenance
- Preventive Maintenance
- Rehabilitation

Sustainable Financing

Long-Term Network
 Planning

Cost-Effective Decision
 Making

 Pavement Management System

Optimization

PAVEMENT PRESERVATION

FOUNDATION for PAVEMENT PRESERVATION



FOUNDATION FOR PAVEMENT PRESEVATION (FPP)

 NON-PROFIT ORGANIZATION SUPPORTED BY THE PAVEMENT PRESERATION INDUSTRY
 CONDUIT BETWEEN INDUSTRY, PUBLIC AGENCIES, AND ACADEMIA
 PRINCIPLE SOURCE FOR PROMOTION OF PP

FPP MISSION

 TO CONTINUOUSLY IMPROVE THE QUALITY AND UNDERSTANDING OF PAVEMENT PRESERVATION TECHNOLOGIES THROUGH EDUCATION, RESEARCH, PUBLIC-PRIVATE PARTNERING AND INTERNATIONAL EXCHANGE



A formal agreement between – Foundation for Pavement Preservation & Michigan State University





Mission

Lead a collaborative national effort among government, industry and academia participants to advance and improve pavement preservation practices through education, outreach and research.



Use pavement preservation techniques to achieve sustainable network condition levels that satisfy user needs cost effectively.

GROUNDBREAKING NEW BOOK AVAILABLE



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At the CROSSROADS

PRESERVING OUR HIGHWAY INVESTMENT



PAVEMENT TECHNOLOGY, INC.

Preservation is OUR Responsibility

Our Pavement Preservation Toolb

Reclamite[®] Asphalt Rejuvenator

JOINTBOND®

Joint Stabilizer

Cyclogen[®] Recycling Agent

CRF[®] Restorative Seal

SINAK[®] Concrete Sealer

SurfCrete[®] Concrete Resurfacer / Patch

Coherex[®] Dust Control Agent

DUST BOND® Dust Control Agent

www.pavetechinc.com

Are your pavements getting behind the deterioration curve?

Agencies, large and small, are feeling the pressure of budget shortfalls. It follows that anything one can do to optimize the use of their budget dollar and stabilize roadway condition is the direction of choice.

A maltene based asphalt rejuvenator delays the aging of newly placed asphalt pavements and arrests the premature aging of existing pavement. This is accomplished by the in-depth correcting of asphalt cement chemistry thus extending the period of time at which critical embrittlement occurs. A maltene based rejuvenator is a low cost first line of defense in any pavement preservation program. The cost of rejuvenation is generally less than \$0. 70 per square yard.

The Basics of Asphalt Chemistry

Asphalt cement glues the stone together.

The performance of asphalt cement as a binder in HMA pavements is determined by its physical properties, which in turn are determined directly by its **chemical composition**.

Hot Mix Asphalt (HMA)



Asphalt Cement Stable component: - Asphaltenes Reactive components: - Saturated hydrocarbons (paraffin's) - First acidaffins - Second acidaffins - Polar compounds



Why asphalt deteriorates.

The first significant hardening of the asphalt cement takes place in the pugmill or drum mixer where heated aggregate is mixed with hot asphalt cement. During this short mixing time, the asphalt cement, which is in very thin films, is exposed to high temperatures ranging from 275 to 350° F.

Aging begins





From the moment an asphalt pavement is created at a central mixing plant -deterioration of the "GLUE" begins. Deterioration continues once the asphalt mixture is placed on a roadway from:

- Environmental temperature
- Oxidation
- Stripping action of storm water and melting snow
 Tratific wear
- Traffic wear







enhancing the Asphaltic Concrete Life Cycle

Are your paving dollars keeping up with deterioration?

RECLAMITE ASPHALT REJUVENATOR

REMEDIES the cause of pavement deterioration

Saves Money



The right treatment at the right time

How Reclamite works.





Open to traffic in 15 minutes

Reclamite penetrates into the upper portion of the pavement, and combines with the existing asphalt cement.

This correction of asphalt cement chemistry **restores** asphalt components removed at the hot plant, increases penetration value (softness), and creates an *in-depth seal* that traffic will not ware away.

City of Cleveland Reclamite Evaluation 1977/1987 West-110th Street

Left half treated with Reclamite

Treated

Untreated

After five years

by of Cleveland

Reclamite

1977/19

Vest 110th Street

City of Cleveland Reclamite **Evaluation** 1977/1987 West 110th Street After ten years

Treated

Untreated



According to studies sited by the American Public Works Association, "Those who carry out low cost rejuvenation *before* rapid deterioration begins, extend the pavement life for a fraction of the cost of those who 'wait just a couple of years'."

> Pavement Technology, Inc. 24144 Detroit Rd Westlake, Ohio 44145 800-333-6309 Pavetech@earthlink.net

DESIGN CRITERIA FOR COLD-IN-PLACE RECYCLING OF ASPHALT PAVEMENTS

Using CYCLOGEN® Cationic Emulsified Maltene Recycling Agents

1/25/2005

Proprietary

Quality Recycling Agents

 Proper base is essential. A *napthenic* base, containing minimal wax is ideal- the molecular makeup offers more solvency power and fluxing ability.

 Cyclogen[®] LE & ME are manufactured as emulsions. These emulsions are typically at a 60-65% residual. Cyclogen[®] is formulated to, "Wet" the asphalt binder that coats the aggregate, improving uniform fluxing.

CYCLOGEN®Nomograph To Choose

Grade of Maltene Agent
Amount of Maltene Agent



Remedy the Cause of Aging With CYCLOGEN®



Silicate Based Concrete sealer

for

traffic bearing surfaces

How it works.

Silicate Based Sealer reacts with calcium hydroxide, which line the capillary channels in the concrete, to form an insoluble and permanent silicate structure.

This reaction creates more cement, reducing capillary pores, and eliminating the concrete's extreme attraction for moisture.

Chloride Ion Resistance:



Application



Permanent protection for traffic bearing surfaces

What is Surf-Crete

Surf-Crete is a blend of polymers emulsified in water mixed with cement and aggregates.

Surf-Crete Resin is the primary cement.
 Surf-Crete sets up hard and resilient.
 Surf-Crete will stick to virtually any surface.

Customize Mix Design allows you to feather to zero edge without losing strength or resilience.



Before Surf-Crete

After Surf-Crete

Ohio Turnpike Commission





Before Surf-Crete

After Surf-Crete

ODOT Dist. 12



Surf-Crete Patch System







Remove any existing patch material or loose concrete.





JONTBOND® CONSTRUCTION JOINT STABILIZER

FOR ASPHALT PAVEMENTS



The Answer to Premature Longitudinal Joint Failure JOINTBOND Is a polymerized Maltene Emulsion formulated to penetrate quickly and fortify the weakest area in new asphalt construction.

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

JOINTBOND can help prevent joint deterioration and separation

JOINTBOND Applied To The Longitudinal Joints

JOINTBOND quickly penetrates into the pavement.





35 Years of Service to the Public Works Professional