



Pavement Technology, Inc.

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JOINTBOND® asphalt joint stabilizer

The longitudinal joints in asphalt pavements are a common failure point. When improperly maintained, they can reduce pavement longevity by as much as 40 percent. JOINTBOND® asphalt joint stabilizer protects longitudinal joints and surrounding areas by deeply penetrating the pavement and stabilizing the critical joints and adjacent areas. It is primarily for use on asphalt pavements less than one year old.



JOINTBOND Being Applied to Longitudinal Joint Area



Treated Joint

Untreated Joint

Treated and Untreated Areas, 4 Years Post-Treatment

Markets

- DOTs
- Urban/Suburban Municipalities, Counties
- Highway Shoulders

Compatible Substrates

- For asphalt pavements less than one year old.

Benefits

- Helps prevent cracking and separating of critical joints
- Penetrates deeply and quickly to protect against air, water and salt brine
- Will not obliterate striping and other markings
- Field tested and proven technology
- Leaves no surface residue

How It Works

JOINTBOND longitudinal joint stabilizer was developed to inhibit the premature deterioration of construction joints by penetrating the asphalt pavement and combining with the existing asphalt binder. As a polymerized maltene-based emulsion, JOINTBOND stabilizer extends the service life of longitudinal joints and adjacent areas in two ways:

- Improving the chemistry of the in-place asphalt binder
- Adding a physical in-depth seal to the construction joint, thereby sealing the joint and surrounding area against intrusion by air, water and salt brine

How to Apply

Temperature

Apply only when ambient temperature is expected to remain at or above 40°F for 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/Rate

JOINTBOND stabilizer must be applied by an approved applicator using a computerized distributor truck cleaned of all other materials to prevent contamination. Its recommended application rate is between 0.06 and 0.15 gallons per square yard (GSY).

JOINTBOND stabilizer shall be applied such that a uniform distribution is obtained along the longitudinal construction joint and an area from 1 to 1.5 feet on both sides of the joint.

Multiple applications may be needed on grades or super elevations prone to excessive runoff. Succeeding applications shall be made as soon as penetration of the preceding application is complete.

If significant residue remains due to misapplication or spills, a light coating of sand may be spread on the surface prior to opening the road to traffic.

Other Considerations

Treated sections must be closed and free from traffic until JOINTBOND treatment is complete. Traffic control shall be conducted in compliance with all local, state and federal requirements.

Limited Warranty

Pavement Technology, Inc. (PTI) warrants its products to be of the highest quality. Refund of purchase price or replacement of product shall constitute the limit of PTI's liability. PTI makes no other warranties, express or implied, with respect to the products or any service and disclaims all other warranties, including any warranty of merchantability and fitness for particular purpose. This limited warranty may not be modified by reps of PTI, its distributors or dealers.

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Specifications/Testing

Property	Test Method	Requirements
Emulsion		
Residue, %w ¹	ASTM D-244 (Mod)	Min. 39, Max. 44
Miscibility ²	ASTM D-244 (Mod)	No Coagulation
Particle Charge	ASTM D-244	Positive
Residue From Distillation		
Flash Point, COC °C	ASTM D-92	Min. 200
Viscosity @ 60°C, cSt	ASTM D-445	Min. 100, Max. 200
Asphaltenes, %w	ASTM D-2006-70	Max. 1.0
Maltene Distribution Ratio (PC+A ₁) / (S+A ₂) ³	ASTM D-2006-70	Min. 0.2, Max. 0.8
PC/S Ratio ⁴	ASTM D-2006-70	Min. 0.5
Saturated Hydrocarbons	ASTM D-2006-70	Min. 21, Max. 28
Percent Light Transmittance ⁵	D&D Emulsions	Max. 30
Polymer		
Charge		Positive
Monomer Ratio, Butadiene/Styrene		76/24
Solids Content, %w		63
Coagulum on 80 mesh screen (max. %w)		0.1
Mooney Viscosity of Polymer (ML 4 @ 212°F) min.		100
PH of Polymer		5.0
Weight per gallon (wet pounds @ 63% solids content)		7.94

1 ASTM D-244 Evaporation Test for percent of residue is calculated by heating 50 gram sample to 149°C (300°F) until foaming ceases, then cooling immediately.

2 Test procedure identical with ASTM D-244 except that .02 Normal Calcium Chloride solution shall be used in place of distilled water.

3 PC = Polar compounds; A₁ = First Acidifins; A₂ = Second Acidifins; S = Saturated Hydrocarbons

4 Chemical composition by ASTM D-2006-70

5 Light Transmittance minimum of 30 without the complete test method shown.

Test Results on Recovered Binder

Core Sample	Viscosity @60°C, Poises	Phase Angle, °	Modulus, Pa (pascals)		
			Complex	Elastic	Viscous
Treated Core B Top 3/8"	5441	85.5	5456	432	5438
Treated Core B 3/8"-3/4" layer	7028	84.4	7047	685	7013
Untreated Core B Top 3/8"	8258	84.0	8279	869	8234
Untreated Core B 3/8"-3/4" layer	8251	84.2	8292	833	8250
Treated Core C	4036	85.2	4047	336	4033
Untreated Core C	8108	83.2	8129	965	8071

The performance of JOINTBOND® asphalt joint stabilizer has been field tested by government agencies to verify its effectiveness in changing the viscosity values of the asphalt binder. The above test results were taken from the top 3/8" and the 3/8" to 3/4" layers of each core specimen removed separately. The asphalt binder was extracted and recovered from both layers separately by California Test Method 365. Viscosities,

pascals (Pa), phase angles, and complex, elastic, and viscous moduli were determined on the recovered asphalt binder using the Dynamic Shear Rheometer as prescribed in ASHTO T316. The results cited above demonstrate that JOINTBOND® stabilizer has effectively combined with the asphalt binder to produce a more durable and longer lasting construction joint area.

Safety Guidelines

Contractors shall follow all stipulated application requirements.

Manufacturer

D&D Emulsions, Inc., Mansfield, OH

National Distributor

Pavement Technology, Inc.,
Westlake, OH

