



“The Innovative Force Behind Tire Recycling”



**FLEXI-PAVE™ HD2000
PAVING**



THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

RECYCLED TIRE CONSUMPTION BY PRODUCT

PRODUCT CODE	TIRE CONTENT	3/8" TIRE GRANULE PER SQ.FT.	# TIRES PER 1 MILE x 4ft. WIDE	MARKET APPLICATIONS
FLEXI-PAVE HD2000 Heavy Duty	50%	5 lbs	10,560	Trails, Jogging Paths, Side Walks, Parking Lots, Driveways, Golf Cart Paths, Surfacing On Quaysides, Ballasting In Marine Vessels etc.
FLEXI-PAVE HD1000 Heavy Duty	25%	2.5 lbs	5,280	Pool Decks, Onto Board Walks, Disabled Ramps, Balconies, Boat Ramps & Other General Re-surfacing Over Cracked Engineered surfaces.
FLEXI-PAVE P2000	67%	6.5 lbs	15,840	Children's Safety Play Surfaces, Trails, & Jogging Paths.
FLEXI-PAVE P1000	38%	3.25 lbs	7,920	Pool Decks, Onto Board Walks, Disabled Ramps, Balconies, Roof Access, Ergonomic Floors, Marine Deck Applications & Other General Re-surfacing Over Cracked Engineered Surfaces.

Trying To Find Quick LEED Points For Your Project?

Six Ways To Create Points And Keep It Simple!

Made From Recycled Tires, The Flexi-Pave™ Porous Surface System Does More Than Any Other Surface!

Flexi-Pave™ Has Extensive Pore Spaces But Doesn't Sacrifice Strength. The Result Is A Cooler Surface That Reduces Heat Island Effects, Controls Pollution Runoff And Enhances Groundwater Recharge. With Aggregate And The Proper Substrate It Supports Loads Of 80,000 Pounds And Won't Crack.



1. Use Flexi-Pave™ HD2000 for Parking Pads

Imagine A Durable, Decorative, Long Lasting Surface That Doesn't Need Resealing Or Watering. A Surface with Nearly Unlimited Colors That Won't Crack Under Downward Or Upward Loads! A Surface That Doesn't Collect Standing Water And Is Cost Effective! The Super Surface Is Flexi-Pave™. Flexi-Pave™ Sidewalks, Jogging Trails and Bike Paths Can Be Lined With Trees Without Trip Hazards From Heaving, Roots, Cracking Or Settling And It Won't Scuff Golf Balls!



2. Use Flexi-Pave™ P2000 for Sidewalks



THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

Because Water Runs Right Through It, The Stormwater Management Advantages Make Flexi-Pave A Profitable Choice!

Construct Driveways, Parking Areas And Access Roads That Serve As Primary Infiltration Areas For Runoff. By Not Increasing Impervious Areas You Can Add Square Footage To Building Footprints.

Eliminate Standing Water Issues On Any Surface With As Little As 1" Of Flexi-Pave™.

Create Effective Erosion Control Around Storm Drains Without Impeding Flow Or Shifting The Problem.



3. Use Flexi-Pave™ for Improved Drainage

**FLEXI-PAVE™
WATER RUNS RIGHT THROUGH IT!**

SPECIFY Flexi-Pave™

Flexible / Porous / Non-Cracking / Weight Bearing
Slip Resistant / Many Colors / Durable



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FLEXI-PAVE™ BENEFITS

REDUCE RETENTION NEEDS

CONTROL POLLUTION RUNOFF

CONVERT PARKING TO DRAINAGE

INCREASE GROUNDWATER RECHARGE

CREATE SLIP RESISTANT SAFETY

MINIMIZE MAINTENANCE

EARN LEED CREDITS

REDUCED RUNOFF

REDUCED HEAT ISLAND EFFECT

REDUCED LANDFILL WASTE

RECYCLED PRODUCT USE

CONSERVE WATER

BEAUTIFY YOUR PROJECT

ELIMINATE CRACKING

ADD SOFT COMFORT UNDERFOOT

REDUCE LIABILITY

CONTROL EROSION

FOREVER FORGET POTHOLES

Don't Slow Traffic For Maintenance When Flexi-pave™ Grass Green Looks Great in Medians!

Install Grass Green Flexi-Pave™ In Landscaped Medians And Right Of Ways And Never Water Or Cut These Areas Again. Try Flexi-Pave™ As A Patch For Those Pesky Potholes In Asphalt Access Roads And Watch It Outlast the Road.



4. Use Flexi-Pave™ for Landscaping

Follow The 3-R's. Reduce And Reuse With Recycled Flexi-Pave™.

Cover That Cracked Concrete Patio Or Slab Without Removing The Old Broken Concrete To Save Time And Money. Resurface that Splintering Wooden Deck or Dock and Create a Maintenance Free Surface while Adding Beauty, Comfort and Style. Create Slip Resistant Ramps To Help With ADA Compliance.



5. Use Flexi-Pave™ for Decks, Docks and Handicap Ramps

Gain Those Valued LEED Credits the Easiest Way Possible!

Specify Flexi-Pave™ on Your Next Project

Flexi-Pave™ LEED Credits:

SS Credit 6 – Stormwater Management

MR Credit 4 – Recycled Content

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Choose Site Work / Porous Pavement

www.buildinggreen.com/auth/productDetail.cfm?ProductID=2702

Registered in CCR as

KB Industries Duns Number 148395093

NAICS codes 234110, 324121, 324122 and 326299

Placement Of Flexi-Pave™ On the GSA Schedule Is Currently In progress. Once Complete, KB Industries Flexi-Pave™ Can Initially Be Found Under **New Products** In The Federal Supply Service Multiple Awards Schedule 03 Facilities Maintenance And Management Section.

Once On The GSA Schedule the Link Below Should Provide Access to Flexi-Pave™

<http://www.gsaelibrary.gsa.gov/ElibMain/SinDetails?executeQuery=YES&scheduleNumber=03FAC&flag=&filter=&specialItemNumber=541+099>

For Up To Date Purchasing Information Contact
Mary Anne Bowie, AICP • Director Of Government Sales
(877) 826-8600

Convert Membrane Roofs Into Patios Using Flexi-Pave™ To Distribute Loads, Extend Roof Life And Provide Tested Protection From Hail. Flexi-Pave™ Is An Amazing Sound Control Tool And Creates Slip Resistant Stairways With No Sharp Edges. Convert Sand Or Mulch Playgrounds Into Safe And Clean Play Zones. Surround A Pool For Safety!

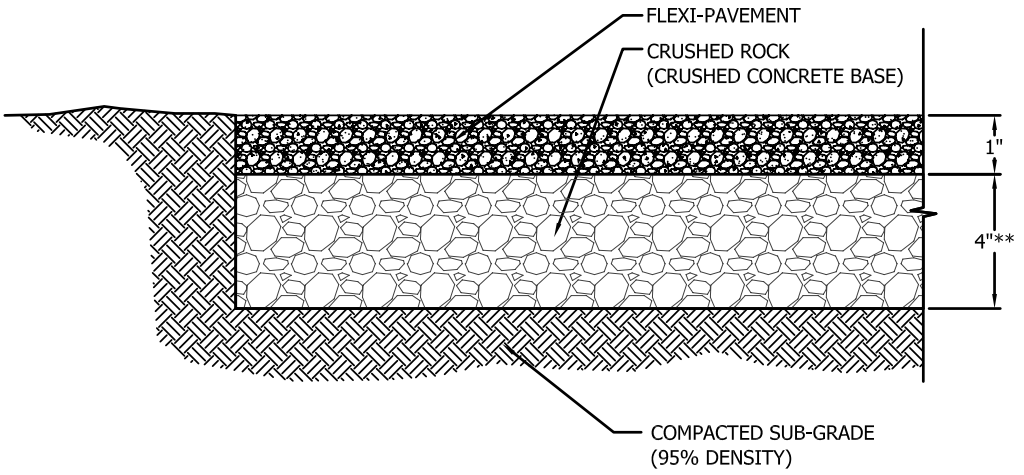


6. Use Flexi-Pave™ for Safe Play Zones

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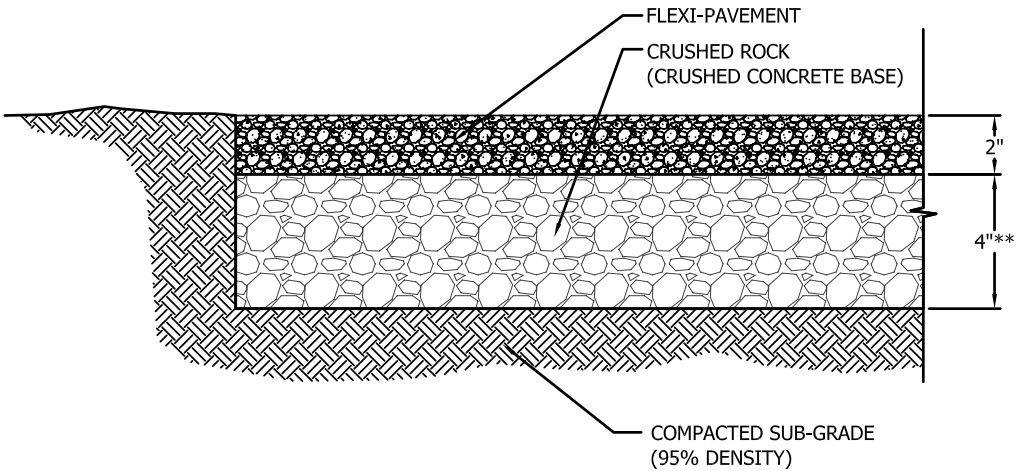


*** BASE DEPTH VARIES DEPENDING ON APPLICATION

SECTION
N.T.S.



HD 1000



*** BASE DEPTH VARIES DEPENDING ON APPLICATION

SECTION
N.T.S.



HD 2000

REPORT 09:13:05

Reference: Flexi-Pave in Comparison With Pervious Concrete

Flexi-Pave is a product that is fundamentally different than pervious concrete, although both are proposed as permeable surfaces. Both products have applications to which they are suited, but Flexi-Pave offers advantages when long term permeability, flexibility, strength, and resistance to tree root intrusion and freeze/thaw cracking are important.

Pervious concrete is a rigid, porous form of concrete with differing degrees of permeability. The rigidity characteristic provides strength and resistance to surface loadings. Water enters the concrete through the voids and passes to the subsurface below. The level of permeability of the pervious concrete is a function of the amount of voids in the product. Pervious concrete, with void levels and, thus, high levels of permeability are subject to cracking due to loads and freeze/thaw pressures. It will also crack due to tree root intrusion. Pervious concrete with lesser voids is more resistant to cracking, but is less permeable. The voids in pervious concrete fill with sediment, such as sand, silt, leaves, and organics over a fairly short period of time. This results in a marked reduction in permeability and negates the entire reason for selecting pervious concrete in the first place. Pervious concrete is dependent on a well compacted and stable base to minimize cracking and cannot be used over marginal material as a base without a high probability of cracking and structural degradation.

Flexi-Pave is a flexible product with excellent compressive strength for most applications. The permeability is equal to or greater than that of the subsoil below. It utilizes a base (crushed rock) that contains a void ratio equal to or greater than that of Flexi-Pave. In light load applications, when placed over a highly permeable, sandy type soil, it will pass as much water as it receives. Because it is flexible, it will not crack. Tree roots do not cause cracking but instead create a minimal rise in the slope of the surface that does not promote tripping. The product is very durable as measured by the Hamburg Loaded Wheel tester (Tx DOT 242-5). Because the product flexes, sediment that enters the Flexi-Pave tends to pass completely through the material and does not "blind" the material or cause it to have a marked decrease in permeability. Samples in field service (parking lot) for nearly four years still tested as a "highly permeable" material (FI DOT 5-565). The product is also classified as slip resistant per ASTM D 2047.

Summary:

Pervious concrete and Flexi-Pave are both permeable products that can withstand substantial loadings. Flexi-Pave offers advantages for identical applications in terms of long and short-term permeability, flexibility, crack resistance, trip hazard resistance and slip resistance.

REPORT 09:20:05

Reference: Water Storage Capacity of Flexi-Pave HD2000

The unique high void ratio of Flex-Pave creates the capacity for capturing and containing rainwater before it is released to the soil and subsurface below. As rainfall occurs, it is captured in the voids of the Flexi-Pave and released to the crushed rock used as the base material for the product. The product, Flexi-Pave, and the crushed rock base, can store up to 0.96 inches of rainfall plus whatever passes through the soil before running out of capacity to store the storm water. When Flexi-Pave is constructed over a sandy soil, even the most torrential rainfalls will not cause water to stand on the surface of the material. Most rainfalls, except in severe rainfall conditions will be stored in the product keeping the surface free from standing water.

The non-skid properties of Flexi-Pave combined with its water storage capacity makes it safer than most products in similar applications for walkways and parking areas.

Calculation Basis

Flexi-Pave, at two inches thick multiplied by the void ratio of 12%, equals 0.24 inches of available capacity. Crushed rock, at four inches thick multiplied by the void ratio of 18%, equals 0.72 inches of available capacity. Capacity equals 0.24 inches plus 0.72 inches, or 0.96 inches in total. For example, if the subsoil has a vertical conductivity of two inches per hour, then a true capacity of three inches of rainfall is available using the Flexi-Pave product.

Summary

Based upon the aforementioned calculations, the storage capacity of water by volume is:

- 2 inches of Flexi-Pave @ 1 foot square (288 cubic inches)
12% voids = 34.56 cubic inches of water capacity
- 4 inches of crushed rock sub-grade @ 1 foot square (576 cubic inches)
18% voids = 103.68 cubic inches of water capacity
- Total water capacity of the system (2" Flexi-Pave + 4" Crushed Rock)
= 138.24 cubic inches = **2.39 Quarts or 0.6 gallons** (0.598 gal)
Note: 1US Quart = 57.75 cubic inches

Flexible Material for Parking Lots and Driveway Applications

Specifications

This is a flexible pavement material designed to support anticipated axle loadings associated with parking lot and driveway applications. The material shall have the following equivalent characteristics:

- Permeability - minimum 0.15 cm/sec permeability rate
- Rut Resistance – less than 2.5mm rut depth @ 8000 cycles (based upon Hamburg Loaded Wheel Tester TX DOT 242-F)
- Static Creep per TX DOT 231-F – total strain = 2.7%; permanent strain 0.5%
- Resilient Modulus per ASTM D4123 65,000
- Slip Resistance per ASTM 2047 greater than 0.6
- Scuff/Power Steering Resistance – using wet track abrasion ISSA TB 100 I hour = 16.5 grams/sq ft, 6 day 17.5 gram/sq ft

The materials proposed for this application must supply test data to provide compliance with structural requirements.



THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

1915 62nd St. North
Tampa, Fl. 33619

February 6, 2003

Memorandum: Pervious Pavement and Underground Vault Surface Water “rules of thumb” that can be applied to Flexi-Pave™ HD2000, and Flex-Path™ P2000 products manufactured by K.B. Industries, Inc and installed by K.B. Industries, Inc. “Exclusive Licensed Contractors”.

Subject: The product classes mentioned above are highly pervious systems that only need modification when site drainage conditions fall below the “Rational C” coefficient set by SWIFTMUD regulatory body.

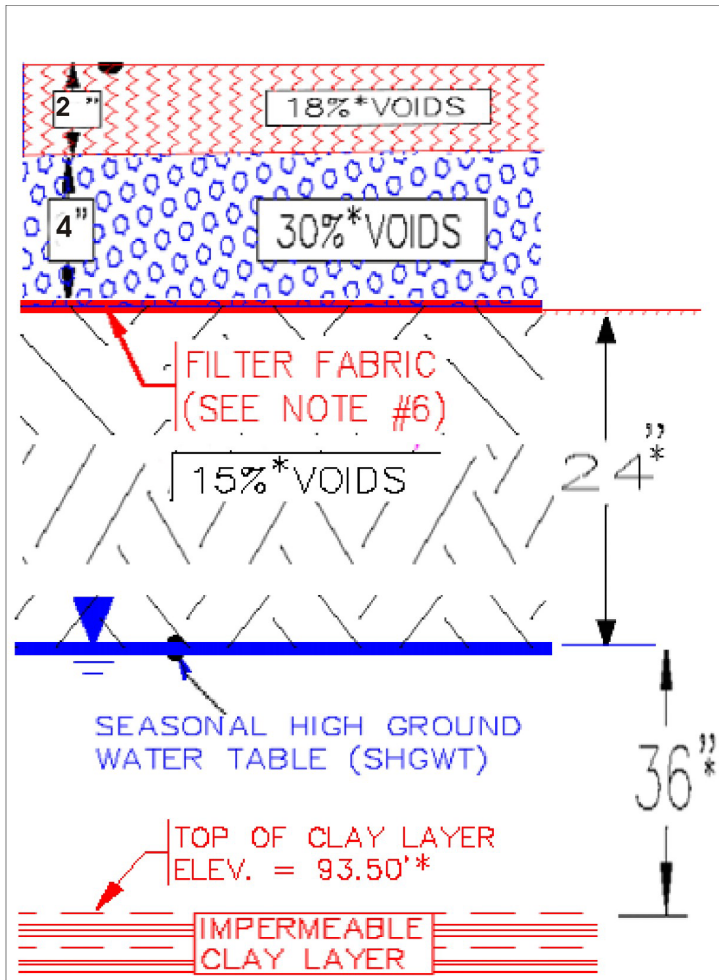
Site Drainage Conditions:

- 1) Deep Seasonal High Ground Water Table (SHGWT) - A general “rule of thumb” is the SHGWT should be greater than two (2) feet below the bottom of the pervious pavement system.
- 2) Deep confining unit (clay layer) - A general “rule of thumb” is the confining unit should be greater than five (5) feet below the bottom of the pervious pavement system.
- 3) High saturated vertical (Kv) and horizontal (Kh) permeability - A general “rule of thumb” is for saturated Kv to be greater than six (6) inches per hour, and Kh to be greater than nine (9 inches per hour.)

Typically, the above three items are only present in soils that are classified as Hydrologic Soil Group (HSG) “A”.

The aforementioned referenced systems will work with less than ideal soil conditions (i.e. Hydrologic Soil Group (HSG) “B, C, D”. if measures like using fill dirt (top soil) in the pre-preparation stage are done to meet the minimum standard that is specified by the regulatory authority. Typically in areas that have the lower Soil Group classifications, sometimes referred to as “pine bark flat” (HSG BD), commercial projects require the pre-preparation of back filling the affected area to meet district rule criteria.

Thus K. B. Industries. Inc. products Flexi Pave HD2000™ and Flex Path P2000™ need no further preparation than what is specified in the aforementioned product specifications.






NOTES

1*
 FILTER FABRIC (AS SHOWN) IS RECOMMENDED TO AVOID CONTAMINATION WITH THE AGGREGATE BASE, AND TO PROVIDE SOME ADDITIONAL (LIMITED) STRUCTURAL STABILIZATION TO THE FLEXI PAVE SECTION. FILTER FABRIC MUST HAVE A PERMEABILITY GREATER THAN THE SOIL BELOW

2*
 VALUES AS NOTED BESIDE, WILL VARY FROM SITE TO SITE.

LEGEND

SCALE: NONE

-  2" Flexi Pave Hd2000 or Flex path P2000
-  4" crushed concrete or crushed asphalt compacted to 95%
-  Sub Grade

THIS MEMORANDUM MUST NOT BE CONSIDERED AS GUARANTEE OF ACCEPTANCE. ANY PERMIT OR APPLICATIONS MUST BE ISSUED OR DENIED SOLELY ON DISTRICT RULE CRITERIA AND STATE STATUTE AUTHORITY. THE PURPOSE OF THIS DOCUMENT IS TO PROVIDE GENERAL GUIDANCE FOR EXCLUSIVE LICENSED CONTRACTORS AND CLIENTELLE OF K.B. INDUSTRIES, INC., A GUIDE TO BETTER UNDERSTAND WHY A STATE AUTHORITY MIGHT DENY A PERMIT APPLICATION. THE APPROPRIATE AUTHORITY SET FORTH HEREIN MAY MODIFY GUIDELINES SET IN APPROPRIATE CIRCUMSTANCES.

Ref: TM 980521-a1 Pervious Pavement & Underground Vault.PDF
 SWFWMD contact: Henry H. Higginbotham, Jr., P.E. Florida Registration No. 31977



ASPHALT TECHNOLOGIES, INC.

TEST & EVALUATION REPORT

December 23, 2003

Report For: K. B. Industries, Inc.
1915 62nd Street North
Tampa, Florida 33610

SAMPLE INFORMATION:

Material	Sample Size		
	Length (inches)	Width (inches)	Height (inches)
Flexi-Pave Mat (Sample Date Unknown)	23.0	23.0	6.0

DATA/RESULTS:

PROPERTY	TEST METHOD	RESULTS		
		1	2	3
Coefficient of Permeability, cm/sec	FDOT FM 5-565	17657 x 10 ⁻⁵	17872 x 10 ⁻⁵	17659 x 10 ⁻⁵
Average Coefficient of Permeability, cm/sec	---	17729 x 10 ⁻⁵		

DISCUSSION: The Average Coefficient of Permeability for a 3.37-inch thick section of Flexi-Pave is 17729 x 10⁻⁵ cm/sec. For reference purposes, the value required by the Florida Department of Transportation for a regular impermeable pavement section is less than, or equal to, 125 x 10⁻⁵ cm/sec.

Tested by: 
Duc Nguyen, Bituminous Pavement EIT

Dated: December 23, 2003

Reviewed by: 
Holly Collins-Garcia, E.I., Laboratory Director

Dated: December 23, 2003

KBI-01-02-01/03

PRI's Accreditations: AASHTO/AAP; NES, ICBO, Metro-Dade an ISO/IEC 17025 Lab

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ASPHALT TECHNOLOGIES, INC.

CONFIDENTIAL Email & FAX TRANSMISSION

COVER PAGE PLUS: -0-

TO: David May, PE / DMA Engineering Email: dmay@dmaeng.com
FAX: 863-619-5629
FROM: Ken Grzybowski DATE: 19 May 2005
SUBJECT: Interim Test & Evaluation Status Report: Flexxi-Pave
Re: your tel request this date

The table below provides the current status of selected evaluations for the Flexxi-Pave samples submitted.

DATA/RESULTS: Interim

Table with 5 columns: PROPERTY, TEST METHOD, PARAMETERS, RESULTS, COMMENT. Rows include Scuff / Power Steering Resistance, Permeability, Flexibility, Hamburg Loaded Wheel Tester, Permeability, Static Loading, Resilient Modulus, Slip Resistance, and Scuff / Power Steering Resistance on Laboratory After Accelerated Aging.

1 simulated performance test correlated to field applied slurry seals; values <= 75 g/ft^2 indicate acceptable wear properties. The 6 day value (6 days of conditioning in water) indicates acceptable water resistant properties.

2 Solid Spin; no cracks, no aggregate dislodged, no tearing, equivalent to a cohesive value of 26 kg-cm.

3 beam samples exhibited excellent flexibility and resistance to cracking and maintaining integrity, beams recovered to original shape without exhibiting permanent deformation

4 ASTM D 2047 stateslaboratory testing of floor polishes with a coefficient of friction of not less than 0.5 traditionally have been recognized as providing nonhazardous walkway surfaces. A wet surface was not evaluated since material is permeable

DISCUSSION: results at this point indicate Flexxi-Pave exhibits excellent cohesive integrity, high resistant to abrasion, wear and surface scarring/deformation, superior rut (permanent deformation) resistance, is highly flexible and resilient and a good resistance to field aging as assessed by accelerated aging (xenon arc/sunlight and water)

DMAE 01-002-01

PRI's Accreditations: AASHTO/AAP; NES; ICBO; Metro Dade an ISO/IEC 17025 Lab

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ASPHALT TECHNOLOGIES, INC.

Test & Evaluation Report

Flexi-Pave Pavement Performance Properties

Report Prepared for:

David May, P.E.
DMA Engineering
116 South Tennessee Avenue
Lakeland, FL 33801

Report Prepared by:

Kenneth F. Grzybowski
PRI Asphalt Technologies, Inc.
6408 Badger Drive
Tampa, FL 33610-2004

July 28, 2005

DMA-01-02-01

PRI's Accreditations: AASHTO/AAP; NES, ICBO, Metro-Dade an ISO/IEC 17025 Lab

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PRI Asphalt Technologies, Inc. 6408 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: mail@priasphalt.com Website: http://www.priasphalt.com



Flexi-Pave Pavement Performance Properties

July 28, 2005

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ASPHALT TECHNOLOGIES, INC.

TEST & EVALUATION REPORT FLEXI-PAVE PAVEMENT PERFORMANCE PROPERTIES

July 28, 2005

Description: Flexi-Pave is a specially formulated permeable pavement material, composed of recycled ground tire rubber, selected aggregate, a proprietary urethane-based binder, and other additives.

Sample/Data Information:

Identification	Grade/Type	Date	Source
Flexi-Pave Pavement Test Specimens	Laboratory-Prepared	Rec'd @ PRI 5/18/05	DMA Engineering
Flexi-Pave Pavement Field Samples (assorted sizes)	Field/Installed	Rec'd @ PRI 5/05	

Client: DMA Engineering

Project No.: DMA-01-02-01

OBJECTIVE: Evaluate, assess, and characterize Flexi-Pave in terms of standard asphalt pavement materials and construction, specifically the wearing/fraction course and one later/lift pavement.

BACKGROUND:

Flexi-Pave is formulated on site to specific job requirements. The proprietary formulation utilized recycled ground tire rubber and other materials to provide typical asphalt pavement-type properties and enhanced performance properties, including: permeability, resilience, flexibility, and overall durability.

CONCLUSIONS:

The specimens submitted exhibited good-to-excellent performance properties for those properties selected for evaluation. The table on the next page provides a summary of the results.

Some of the applications for Flexi-Pave include: bike trails, playgrounds, parking lots, light traffic roadways, and use-areas requiring permeability.



ASPHALT TECHNOLOGIES, INC.

David May, DMA Engineering
 Test & Evaluation Report: Flexi-Pave Pavement Performance Properties
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CONCLUSIONS: continued

Table 1: PROPERTY SUMMARY TABLE

Property	Test Method	Parameters	Results		Comment
Initial Scuff/Power Steering Resistance	ISSA TB 100, <i>Wet Track Abrasion</i>	@ 25°C	1 hour = 4.6 g/ft. ²	6 days = 8.6 g/ft. ²	Good - Excellent ¹
	ISSA TB 139, <i>Cohesion Measurement</i>		15 kg-cm (solid spin) ²		Excellent
Permeability	FL DOT FM 5-565	@ 25°C	1.8 x 10 ⁻¹ cm/sec.		Highly Permeable
Flexibility	PRI TM 025	4" w x 2" t x 36" beams @ 25°C	2 mm avg. max. deflection at center of beams – no cracks after 16 days, no permanent deformation		Highly Flexible ³
Hamburg Loaded Wheel Tester	TX DOT 242-F	@ 60°C to 8,000 cycles or 0.5" rut depth, which ever occurred first	2.3 mm rut depth at 8,000 cycles measured at end of test (test terminated) Full recovery after 24 hours		Excellent/Superior
Permeability	FL DOT FM 5-565	Field/Installed Sample	1.1 x 10 ⁻¹ cm/sec.		Highly Permeable
Static Creep	TX DOT 231-F	@ 60°C	Total Strain + 2.703% Permanent Strain = 0.514%		Good - Excellent
Resilient Modulus	ASTM D 4123	@ 25°C	68,495		--
Slip Resistance	ASTM D 2047	25°C, dry	0.65		Non-slip Hazard ⁴
Accelerated Weathering, ASTM 4798, 500 hours, Xenon Arc Cycle A					
Scuff/Power Steering Resistance	ISSA TB 100, <i>Wet Track Abrasion</i>	@ 25°C	1 hour = 16.5 g/ft. ²	6-day = 17.7 g/ft. ²	Excellent/Superior

1. Simulated performance test correlated to field-applied slurry seals; values ≤ 75 g/ft.² indicates acceptable wear properties. The 6-day value (6 days of conditioning in water) indicates acceptable water resistance properties.
2. Solid Spin; no cracks, no aggregate dislodged, no tearing, equivalent to a cohesive value of 26 kg-cm.
3. Beam samples exhibited excellent flexibility and resistance to cracking and maintaining integrity, beams recovered to original shape without exhibiting permanent deformation.
4. ASTM D 2047 states, ".....laboratory testing of floor polishes with a coefficient of friction of not less than 0.5 have been traditionally recognized as providing non-hazardous walkway surfaces." A wet surface was not evaluated since material is permeable.



ASPHALT TECHNOLOGIES, INC.

David May, DMA Engineering
Test & Evaluation Report: Flexi-Pave Pavement Performance Properties
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DATA/RESULTS:

Surface Toughness and Stress Resistance: ISSA (International Slurry Seal Association) test methods TB 100, *Wet Track Abrasion*; and TB 139, *Cohesion Measurement*, were selected to characterize Flexi-Pave's resistance to surface stress induced by vehicles (power steering) and pedestrians (skateboards, etc.). The ISSA protocols directly address these properties, the test methods are employed routinely for materials such as: slurry seals, micro-surfacing, and similar thin-lift layers placed on asphalt pavements.

Table 2: WET TRACK ABRASION, ISSA TB 100

Sample ID	Wt. Before Testing	Wt. After Testing	Mass Loss, g	Results, g/ft. ²
1 Hour Samples – Unaged				
1	1,712.0	1,710.4	1.6	4.9
2	1,705.3	1,703.9	1.4	4.3
			Avg.	4.6
6-Day Samples – Unaged				
3	1,710.4	1,707.6	2.8	8.6
4	1,703.9	1,701.1	2.8	8.6
			Avg.	8.6
1 Hour Samples – Aged, 500 hours Accelerated Aging (Xenon Arc with water)				
5	1,622.6	1,617.2	5.4	16.5
6-Day Samples – Aged, 500 hours Accelerated Aging (Xenon Arc with water)				
6	1,617.2	1,611.4	5.8	17.7

DISCUSSION: ISSA guidelines allow for mass losses of 50 g/ft.² for 1-hour samples and losses of 75 g/ft.² for 6-day samples. Flexi-Pave exhibited mass losses well below the guideline limits, which define good performance. The data suggests Flexi-Pave will exhibit a high degree of resistance to permanent surface deformation induced by vehicles and pedestrian activities.

Results, after accelerated aging, indicated an overall excellent retained resistance to scuffing and power steering induced surface damages to Flexi-Pave.

Table 3: COHESION TEST, ISSA TB 139

Sample ID	Specimen, Diameter, inches	Dimensions, Height, inches	Cohesion Value, Kg-cm	Ranked Results
1	4.038	1.574	15	Solid Spin ¹
2	4.038	1.549	15	Solid Spin ¹

1. Solid Spins = no visual cracking, no aggregate dislodged or raveled, no tearing, nor other deficiencies.

DISCUSSION: Flexi-Pave exhibited excellent cohesion properties, the specimen remained totally intact without visible deformation induced by the test procedure. Aggregates remained firmly bonded.



ASPHALT TECHNOLOGIES, INC.

David May, DMA Engineering
Test & Evaluation Report: Flexi-Pave Pavement Performance Properties
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DATA/RESULTS: continued

Table 4a: PERMEABILITY – Lab Specimen, Florida DOT FM 5-565

Sample ID	Head _{Initial} , cm	Head _{Final} , cm	Water Temp. °C	Temp. Correction	Time _{sec.}	Coefficient of Permeability, kg-cm/sec.
Core 1, Trial 1	83.52	20.52	28.2	0.83	1.88	1.7×10^{-1}
Core 1, Trial 2					1.72	1.9×10^{-1}
Core 1, Trial 3					1.94	1.7×10^{-1}
					Avg.	1.77×10^{-1}

Core Data: Bulk Specific Gravity: 0.916
Average Core Thickness: 6.530 cm
Average Core Diameter: 15,251 cm
Average Cross-Sectional Area: 182.678 cm²

Table 4b: PERMEABILITY – Lab Specimen, Florida DOT FM 5-565

Sample ID	Head _{Initial} , cm	Head _{Final} , cm	Water Temp. °C	Temp. Correction	Time _{sec.}	Coefficient of Permeability, kg-cm/sec.
Core 1, Trial 1	83.47	20.47	26.4	0.86	1.75	1.8×10^{-1}
Core 1, Trial 2					1.82	1.7×10^{-1}
Core 1, Trial 3					1.81	1.8×10^{-1}
					Avg.	1.77×10^{-1}

Core Data: Bulk Specific Gravity: 0.938
Average Core Thickness: 6.180 cm
Average Core Diameter: 15,247 cm
Average Cross-Sectional Area: 182.582 cm²

DISCUSSION: Flexi-Pave specimens exhibited a high degree of permeability. (Note: $\leq 10^{-7}$ cm/sec. is a guideline value to define impermeability.)

Table 4c: PERMEABILITY – Field Specimen, Florida DOT FM 5-565

Sample ID	Head _{Initial} , cm	Head _{Final} , cm	Water Temp. °C	Temp. Correction	Time _{sec.}	Coefficient of Permeability, kg-cm/sec.
Core 1, Trial 1	87.17	24.77	24.2	0.91	2.40	1.1×10^{-1}
Core 1, Trial 2					2.39	1.1×10^{-1}
Core 1, Trial 3					2.44	1.1×10^{-1}
					Avg.	1.1×10^{-1}

Core Data: Bulk Specific Gravity: 1.018
Average Core Thickness: 5.411 cm
Average Core Diameter: 15.75 cm
Average Cross-Sectional Area: 180.862 cm²



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DATA/RESULTS: continued

FLEXIBILITY: Photos at 0, 7, and 15 days

Flexibility – 1.0 & 2.0: Initial

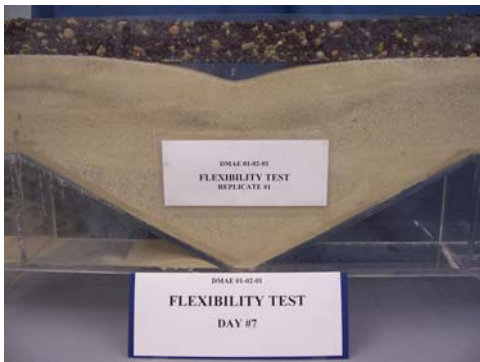


Replicate 1

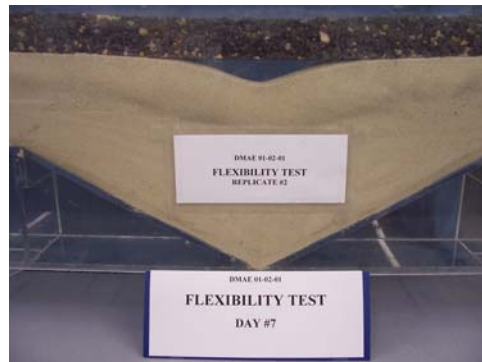


Replicate 2

Flexibility – 1 – 7 & 2 – 7: 7th Day



Replicate 1



Replicate 2

Flexibility 1-15 & 2-15: 15th Day



Replicate 1



Replicate 2

DISCUSSION: Photos document minimal deflection after 15 days at center of beam.

DMA-01-02-01

PRI's Accreditations: AASHTO/AAP; NES, ICBO, Metro-Dade an ISO/IEC 17025 Lab

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DISCUSSION: Both beam specimens exhibited approximately 22 mm of deflection at the beam's center without cracking or other visible permanent deficiency. *(Note: conventional asphalt pavements typically do not exhibit this ability to deflect to this degree without cracking or separation.)*

Table 6: RUT RESISTANCE BY HAMBURG LOADED WHEEL TESTER, Texas DOT 242-F

Stroke Count	Replicate 1 (BSG: 0.937)		Replicate 2 (BSG: 0.939)	
	Temperature, °C	Rut Depth, mm ¹ .	Temperature, °C	Rut Depth, mm ¹ .
0	61	0.0	61	0.0
100	56	0.83	59	1.02
500	61	1.00	60	0.92
1,000	61	1.68	61	1.18
1,500	60	1.45	61	1.96
2,000	60	1.60	61	2.12
2,500	61	1.69	61	2.18
3,000	60	1.76	61	1.64
3,500	61	2.45	61	1.66
4,000	61	2.53	61	1.73
4,500	61	1.95	60	2.41
5,000	61	2.01	61	2.55
5,500	61	2.71	61	1.98
6,000	61	2.00	61	1.98
6,500	60	2.01	61	1.95
7,000	61	2.08	61	2.57
7,500	61	2.20	60	2.02
8,000	61	2.24	60	2.19

1. Depth measurement influenced by high resiliency/recovery properties of Flexi-Pave. Material, unlike conventional asphalt pavements, did not exhibit a permanent deformation, rather the material responded/deformed under immediate (passing of wheel) load, but started recovery when the load passed.



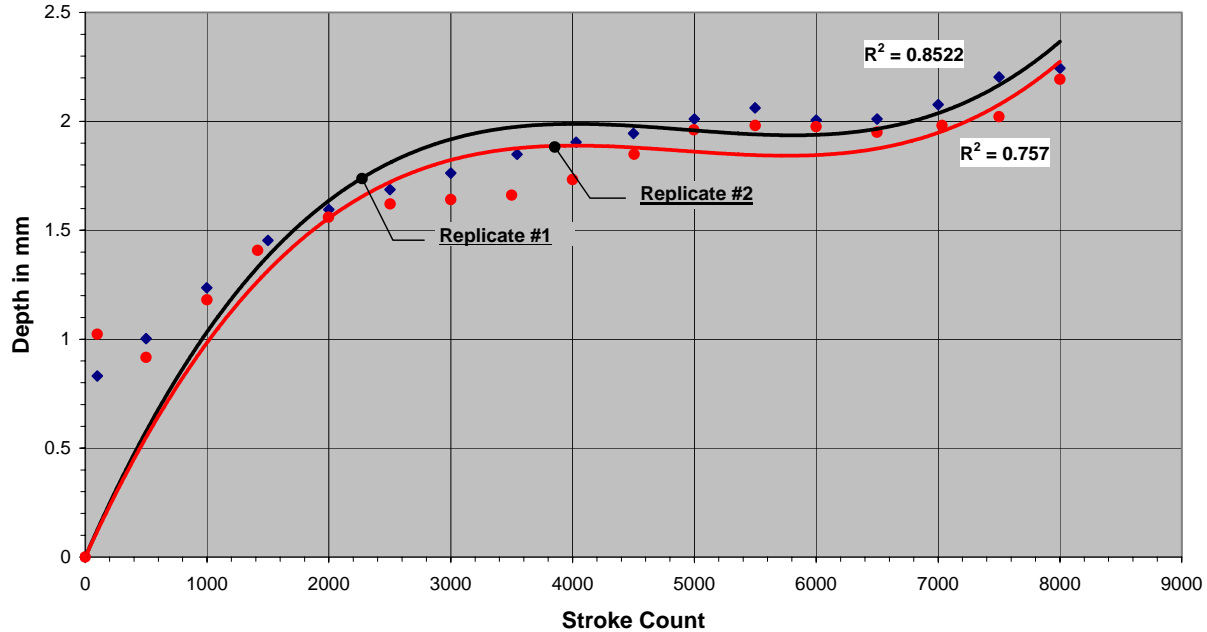
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DATA/RESULTS: continued

1.

HAMBURG LOADED WHEEL GRAPH Replicates 1 & 2



Graph 1: Rut Resistance by Hamburg Loaded Wheel Tester, Texas DOT 242-F

DISCUSSION: Flexi-Pave specimens exhibited excellent rut resistance, approximately 2.2 mm of permanent deformation after 8,000 cycles (discretionary test terminated due to excellent performance – test duration pre-defined as rut depth > 12.5 mm or 8,000 cycles).

The test was conducted at 60°C, 10°C above Texas DOT's recommended parameters. Rut susceptibility is strongly correlated to temperature; higher temperatures resulting in increased susceptibility. Consequently, these Flexi-Pave specimens exhibited superior rut resistance.

The Hamburg procedure is conducted in a water environment and is also used to assess water sensitivity (adhesion of asphalt binder to aggregate in a conventional hot mix asphalt system). The Flexi-Pave specimens exhibited no adhesion loss between the binder and aggregate/particulate materials (ground tire rubber and conventional river gravel).



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DATA/RESULTS: continued



Hamburg Loaded Wheel Tester, 8,000 cycles @ 60°C – Replicate 1



Hamburg Loaded Wheel Tester, 8,000 cycles @ 60°C – Replicate 2

DMA-01-02-01

PRI's Accreditations: AASHTO/AAP; NES, ICBO, Metro-Dade an ISO/IEC 17025 Lab

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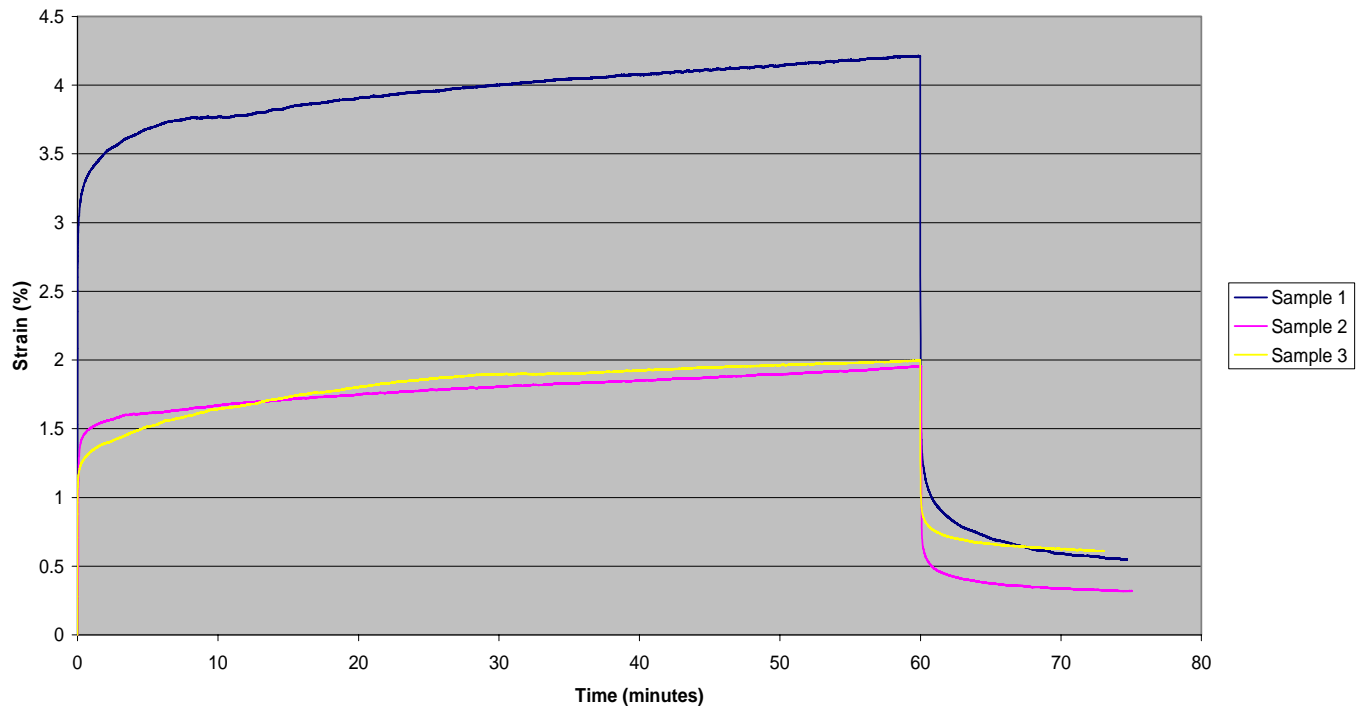
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DATA/RESULTS: continued

Table 7: STATIC CREEP @ 60°C, Texas DOT 231-F

Sample #	Total Strain, %	Permanent Strain, %	Slope of Creep Curve, mm/mm/sec.
1	4.213	0.593	0.000117
2	1.953	0.338	0.000072
3	1.995	0.610	0.000036
Average	2.7203	0.514	0.000201

Strain vs. Time Static Creep Test @ 60°C, Texas DOT 231-F



Graph 2: Static Creep @ 60°C – Strain % vs. Time

DISCUSSION: The Flexi-Pave specimens exhibited resiliency and recovery properties when subjected to static loading.



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DATA/RESULTS: continued

Table 8: RESILIENT MODULUS (RM) @ 25°C, ASTM D 4123

Sample #	RM Position A (psi)	RM Position B (psi)	Average (psi)
1	70,152	68,648	69,400
2	63,956	65,468	64,712
3	66,823	75,922	71,373
Average			68,495

DISCUSSION: Flexi-Pave specimens exhibited an average Resilient Modulus @ 25°C of 68,495 psi.

Table 9: SLIP RESISTANCE: ASTM D 2047 (James Machine)

Surface Condition	Results: Coefficient of Friction		
	Replicate 1 <small>4 cycles</small>	Replicate 2 <small>4 cycles</small>	Average <small>8 cycles</small>
Dry	0.65	0.65	0.65

DISCUSSION: A Coefficient of Friction values of ≥ 0.5 is generally accepted for classifying a walking surface as slip resistant.

The test was conducted dry, due to the high permeability of the Flexi-Pave specimens.



FLEXI-PAVE BASE SPECIFICATION Prepared by David May, P.E. January 17, 2005

**SECTION 100
GRADED AGGREGATE BASE**

100-1 Description

Construct a base course composed of graded aggregate of 1) 2 inches for pedestrian and bicycle use, 2) 4 inches for automobile vehicle use, 3) 6 inches for truck use or 4) construct as directed by Licensee.

100-2 Materials

Use graded aggregate material, produced from approved sources, which yields a satisfactory mixture meeting all the requirements of these Specifications after it has been crushed and processed as a part of the mining operations. Use graded aggregate base materials of uniform quality throughout, substantially free from vegetable matter, shale, lumps and clay balls, and having a Lime rock Bearing Ratio value of not less than 100. Use materials retained on No. 10 sieve composed of aggregate meeting the following requirements:

Soundness Loss, Sodium, Sulfate: AASHTO T 104.....15% Percent Wear:
AASHTO T 96 (Grading A).....65% Percent this group of aggregates is composed of granite, gneiss, or quartzite. Use graded base material meeting the following gradation:

SIEVE SIZE	PERCENT BY WEIGHT PASSING
¾ inch	90 to 100
3/8 inch	20 to 55
No. 4	0 to 10
No. 8 0 to 5	0 to 5
No.16	-
No. 50	-

Ensure that the materials passing the No. 10 sieve has a sand equivalent (AASHTO T 176) value of not less than 28. Graded aggregate may be referred to hereinafter as “aggregate”.

**SECTION 100
GRADED AGGREGATE BASE**

100-3 Equipment.

Use mechanical rock spreaders, equipped with a device that strikes off the rock uniformly to laying thickness, capable of producing even distribution. Where the use of a mechanical spreader is not practicable; the Contractor may spread the rock using bulldozers or blade graders or other means that result in an even distribution.

100-4 Spreading Aggregate.

Spread the aggregate uniformly removing all segregated areas of fine or coarse rock and replace them with properly graded rock.

100-5 Compacting and Finishing Base.

100-5.1 Moisture Content. When the material does not have the proper moisture content to ensure the required density, wet or dry it as required. When adding water, uniformly mix it in by disking to the full depth of the course that is being compacted. During wetting or drying operations, manipulate, as a unit, the entire width and depth of the course that is being compacted.

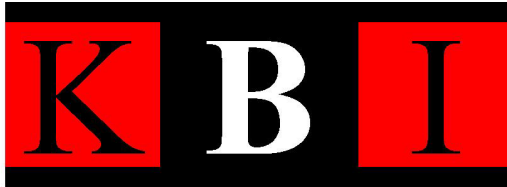
100-5.2 Density Requirements. After attaining the proper moisture conditions, uniformly compact the material to a density of not less than 95% of the maximum density as determined by AASHTO T-180, Method D. Ensure that the minimum density that will be acceptable at any location outside the traveled roadway (such as intersections, crossovers, turnouts, etc.) is 95% of the maximum density.

100-5.3 Density Tests. One density test is required per 500 lineal feet of finished base unless otherwise indicated by the engineer.

100 5.4 Dust Abatement. Minimize the dispersion of dust from the base material during construction and maintenance operations by applying small amounts of water or other dust control materials.

100-6 Testing Surface. Check the finished surface of the base course with a template cut to the required crown as designed in the plans or by the engineer. Correct all irregularities greater than ¼ inch to the satisfaction of the Engineer by scarifying and removing or adding rock as required and re-compact the entire area as specified herein before.

For any questions regarding the above specification, please contact David May, P.E. (863) 629-6586



THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PAVE™

HD2000, HD1000

Product Description: A heavy duty, flexible, porous surfacing designed to be used as paving material in low-speed applications. Made from recycled rubber tires and aggregate. It is 1" thick when installed over existing engineered surfaces and minimum 2" thick when installed over compacted sub-grade.

Features

Porous

Impact-absorbing surface

Slip-resistant

Resistant to freeze / thaw conditions

Resistant to separation and cracking caused by root intrusion

Customized colors available

Benefits

Reduces the need for separate retention areas

Increases usable square footage on your site

Increases potential building size and parking area

Reduces puddles in low-lying areas

Reduce injuries

Reduce slip and fall accidents

Reduces maintenance costs.

Reduces liability claims from "trip & fall"

Many design possibilities

Standard Colors: Black, Brown, Tan, Green, Granite, and Redwood (custom colors available)

Recommended Uses: Parking lots, driveways, sidewalks, boat ramps, decks, handicap ramps, cart paths, jogging trails, and for marine use

Pricing & Ordering: Pricing for Flexi-Pave™ is based on the square footage being covered, any substrate required, the particulars of the site, and the particulars of the job including forming, special equipment, and disposal. Each installation will be quoted separately.

Installation: This is a seamless poured-in-place product that is installed by certified technicians at the job site

Recommended substrate: HD 2000 (2" thick) should be installed over a minimum of 4" of crushed concrete or crushed asphalt with a minimum compaction rate of 95%. It can also be installed over existing engineered surfaces such as concrete or asphalt parking areas, sidewalks, paths, etc, at 1" thick (HD 1000)

Surface Preparation: Substrate must be clean, dry and primed before application

Required temperature for installation: Minimum ambient temperature of 50° F

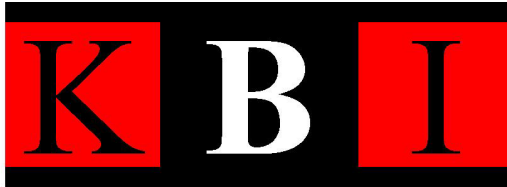
Drying Time: 24 hours

Specifications: HD 2000 and HD1000 are made from 3/8" recycled rubber granule and 1/2" nominal dry aggregate which is bonded together with a single-component moisture-cured urethane.

Safety Information: MSDS are available upon request.

Flexi-Pave™ products are manufactured by KB Industries, Inc. Data is based on facts that we believe to be accurate but all recommendations are made without warranty since conditions of use are beyond KB Industries Inc control. We do not assume any liability except what is expressly noted in warranty certificate if certified technicians install the product. We do not assume any liability from injury resulting from use. Liability, if any, is limited to replacement of products.

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THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PAVE™

HP2000, HP1000

Product Description: A specially-formulated and applied version of Flexi-Pave designed specifically for use in stables. A heavy duty, flexible, porous surfacing designed to provide an extremely durable surface that drains water and urine. Made from recycled rubber tires and aggregate. It is 1" thick when installed over existing engineered surfaces and minimum 2" thick when installed over compacted sub-grade.

Features

Poured in place, permanent
Porous

Impact-absorbing surface
Slip-resistant

Resistant to freeze / thaw conditions
Customized colors available

Benefits

Horses can't disturb it
Reduces amount of bedding used in stalls
Keeps surface non-slip at wash rack
Allows for easy cleanup – no mats to move around
Softer surface is easier on horse's legs
Eliminate cost and ongoing maintenance associated with rubber mats
Reduce injuries related to slipping or falling
Reduces maintenance costs.
Many design possibilities

Standard Colors: Black, Brown, Tan, Green, Granite, and Redwood (custom colors available)

Recommended Uses: Stables – stalls, aisleways, and wash racks

Pricing & Ordering: Pricing for Flexi-Pave™ is based on the square footage being covered, any substrate required, the particulars of the site, and the particulars of the job including forming, special equipment, and disposal. Each installation will be quoted separately.

Installation: This is a seamless poured-in-place product that is installed by certified technicians at the job site

Recommended substrate: HP2000 (2" thick) should be installed over a minimum of 4" of crushed concrete or crushed asphalt with a minimum compaction rate of 95%. It can also be installed over existing engineered surfaces such as concrete or asphalt parking areas, sidewalks, paths, etc, at 1" thick (HP1000)

Surface Preparation: Substrate must be clean, dry and primed before application

Required temperature for installation: Minimum ambient temperature of 50° F

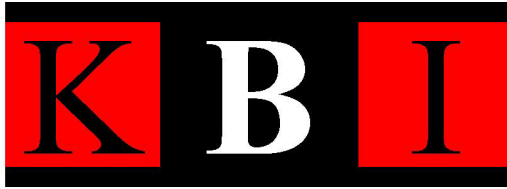
Drying Time: 24 hours

Specifications: HP2000 and HP1000 are made from 3/8" recycled rubber granule and 1/2" nominal dry aggregate which is bonded together with a single-component moisture-cured urethane.

Safety Information: MSDS are available upon request.

Flexi-Pave™ products are manufactured by KB Industries, Inc. Data is based on facts that we believe to be accurate but all recommendations are made without warranty since conditions of use are beyond KB Industries Inc control. We do not assume any liability except what is expressly noted in warranty certificate if certified technicians install the product. We do not assume any liability from injury resulting from use. Liability, if any, is limited to replacement of products.

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THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PAVE™

P3000, P2000, P1000

Product Description: A flexible surfacing / paving material that is made from recycled rubber tires. It is highly porous.

Features

Impact-absorbing surface
Slip resistant
Porous
Intricate designs possible
Wide variety of standard colors
Custom colors are available

Benefits

Reduce Injuries
Reduce slip and fall accidents
Reduces puddles in low-lying areas
Increases your design options
Match the color to your decor
Many design possibilities

Standard Colors: Black, Brown, Tan, Green, Granite, and Redwood (custom colors available)

Recommended Uses: Sidewalks, jogging paths, cart paths, decks & balconies, boat ramps, handicap ramps, as a refurbishment over existing concrete or asphalt, marine use such as docks, or safety surfacing under playground equipment

Pricing & Ordering: Pricing for Flexi-Pave™ is based on the square footage being covered, any substrate required, the particulars of the site, and the particulars of the job including forming, special equipment, and disposal. Each installation will be quoted separately.

Installation: This is a seamless poured-in-place product that is installed by certified technicians at the job site

Recommended substrate: P2000 should be installed over crushed stone or on an existing engineered surface (such as asphalt, concrete or pool decking). P1000 can only be installed over an engineered surface.

Surface Preparation: Substrate must be clean, dry and primed before application

Required temperature for installation: Minimum ambient temperature of 50° F

Drying Time: 24 hours

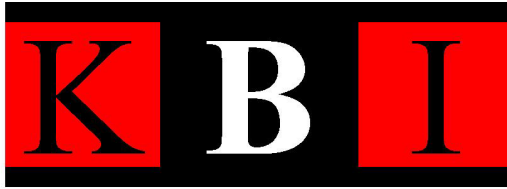
Specifications: The P 2000 is a 2" thick product that is made from 3/8" nominal granules of colored recycled tires bonded by a single component urethane. The P 1000 is a 1" variation of the same components.

ASTM Safety Standards: Meets ASTM 1292 safety requirements for 6 ft critical fall height at 2" thick.

Safety Information: MSDS are available upon request.

Flexi-Pave™ products are manufactured by KB Industries, Inc. Data is based on facts that we believe to be accurate but all recommendations are made without warranty since conditions of use are beyond KB Industries Inc control. We do not assume any liability except what is expressly noted in warranty certificate if certified technicians install the product. We do not assume any liability from injury resulting from use. Liability, if any, is limited to replacement of products.

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THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PAVE™

PF3000, PF2000

Product Description: Flexible surfacing/paving material that is made from recycled rubber tires and SBR granules. It is very porous. This material generally looks the same as typical play areas, but is only one layer, and uses no buffings in the base so that there will be no degradation or delamination.

Features

Impact absorbing surface
Slip resistant
Porous
Intricate designs possible
Wide variety of standard colors
Custom colors are available

Benefits

Reduce Injuries
Reduce slip and fall accidents
Reduces puddles in low-lying areas
Increases your design options
Match the color to your decor
Many design possibilities

Standard Colors: Black, Dark Blue, Light Blue, Bright Green, Brick Red, Bright Red, Pink (Custom colors are available)

Recommended Uses: Safety surfacing for use under playground equipment, in water parks and around pool decks, ramps, jogging paths, trails, balconies, sidewalks, etc.

Pricing & Ordering: Pricing for Flexi-Pave™ is based on the square footage being covered, any substrate required, the particulars of the site, and the particulars of the job including forming, special equipment, and disposal. Each installation will be quoted separately.

Installation: This is a seamless poured-in-place product that is installed by certified technicians at the job site

Recommended substrate: PF3000 should be installed over crushed stone (dynamic surface) or over an existing engineered surface (such as asphalt, concrete or metal decking). PF2000 should only be installed over an engineered surface.

Surface Preparation: Substrate must be clean, dry and primed before application

Required temperature for installation: Minimum ambient temperature of 50° F

Drying Time: 24 hours

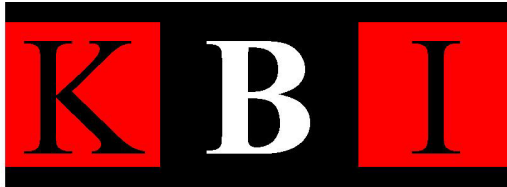
Specifications: PF3000 is a 2½" thick product that is made from 3/8" granules of recycled tires bonded by a single component urethane over which a ½" layer of ¼" SBR rubber is laid. PF2000 is a 1½" version using the same components.

ASTM Safety Standards: Meets ASTM 1292 safety requirements for 6 ft critical fall height at 2" thick.

Safety Information: MSDS are available upon request.

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THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PAVE™

PE3000, PE2000

Product Description: Flexible surfacing/paving material that is made from recycled rubber tires and EPDM granules. It is very porous. This material generally looks the same as typical play areas, but is only one layer, and uses no buffings in the base so that there will be no degradation or delamination.

Features

Impact absorbing surface
Slip resistant
Porous
Intricate designs possible
Wide variety of standard colors
Custom colors are available

Benefits

Reduce Injuries
Reduce slip and fall accidents
Reduces puddles in low-lying areas
Increases your design options
Match the color to your decor
Many design possibilities

Standard Colors: Black, Dark Blue, Light Blue, Bright Green, Brick Red, Bright Red, Pink (Custom colors are available)

Recommended Uses: Safety surfacing for use under playground equipment, in water parks and around pool decks, ramps, jogging paths, trails, balconies, sidewalks, etc.

Pricing & Ordering: Pricing for Flexi-Pave™ is based on the square footage being covered, any substrate required, the particulars of the site, and the particulars of the job including forming, special equipment, and disposal. Each installation will be quoted separately.

Installation: This is a seamless poured-in-place product that is installed by certified technicians at the job site

Recommended substrate: PE3000 should be installed over crushed stone (dynamic surface) or on an existing engineered surface (such as asphalt, concrete or metal decking). PE2000 should only be installed over an engineered surface.

Surface Preparation: Substrate must be clean, dry and primed before application

Required temperature for installation: Minimum ambient temperature of 50° F

Drying Time: 24 hours

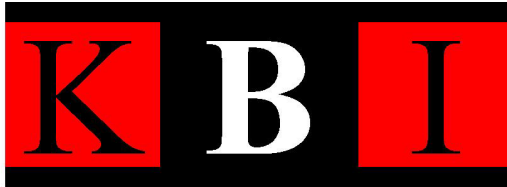
Specifications: PE3000 is a 2½" thick product that is made from 3/8" granules of recycled tires bonded by a single component urethane over which a ½" layer of ¼" EPDM (synthetic rubber) is laid. PE2000 is a 1½" version using the same components.

ASTM Safety Standards: Meets ASTM 1292 safety requirements for 6 ft critical fall height at 2" thick.

Safety Information: MSDS are available upon request.

Flexi-Pave™ products are manufactured by KB Industries, Inc. Data is based on facts that we believe to be accurate but all recommendations are made without warranty since conditions of use are beyond KB Industries Inc control. We do not assume any liability except what is expressly noted in warranty certificate if certified technicians install the product. We do not assume any liability from injury resulting from use. Liability, if any, is limited to replacement of products.

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THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PAVE™

E500, EA500

Product Description: Flexible surfacing/paving material that is made from EPDM Granules (1-4mm). It is porous.

Features

Impact absorbing surface
Slip resistant
Porous
Intricate designs possible
Wide variety of standard colors
Custom colors are available

Benefits

Reduce Injuries
Reduce slip and fall accidents
Reduces puddles in low-lying areas
Increases your design options
Match the color to your decor
Many design possibilities

Standard Colors: Black, Dark Blue, Light Blue, Bright Green, Brick Red, Bright Red, Pink (Custom colors are available)

Recommended Uses: Water parks and around pool decks, jogging paths, balconies

Pricing & Ordering: Pricing for Flexi-Pave™ is based on the square footage being covered, any substrate required, the particulars of the site, and the particulars of the job including forming, special equipment, and disposal. Each installation will be quoted separately.

Installation: This is a seamless poured-in-place product that is installed by certified technicians at the job site

Recommended substrate: The E500 can only be installed over an engineered surface.

Surface Preparation: Substrate should be clean, dry and primed before application

Required temperature for installation: Minimum ambient temperature of 50° F

Drying Time: 24 hours

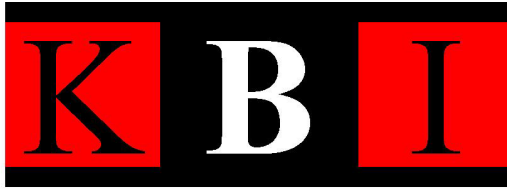
Specifications: E500 is a ½" layer of EPDM (synthetic rubber) granule compressed to a nominal 3/8" with a single component urethane binder.

ASTM Safety Standards: This product would not meet safety requirements for playground use.

Safety Information: MSDS are available upon request.

Flexi-Pave™ products are manufactured by KB Industries, Inc. Data is based on facts that we believe to be accurate but all recommendations are made without warranty since conditions of use are beyond KB Industries Inc control. We do not assume any liability except what is expressly noted in warranty certificate if certified technicians install the product. We do not assume any liability from injury resulting from use. Liability, if any, is limited to replacement of products.

KB Industries, Inc 28100, Us Hwy. 19 North, Suite 410, Clearwater, FL. 33761
Tel: 727-726-2700 Fax: 727-726-7800 www.kbius.com



THE INNOVATIVE FORCE BEHIND TIRE RECYCLING

FLEXI-PADS™

Product Description: A flexible surfacing/paving material that is pre-formed into large transportable sections. Made from recycled rubber tires. It is highly porous.

Features

Impact absorbing surface
Slip resistant
Porous
Movable

6 standard colors
Custom colors are available

Benefits

Reduce Injuries
Reduce slip and fall accidents
Reduces puddles in low lying areas
Use only where and when you need it – use with existing mulch/surfacing
Match the color to your décor
Many design possibilities

Standard Colors: Black, Brown, Tan, Green, Granite, and Redwood (custom colors available)

Standard Sizes: 4' x 4', 4' x 6', 4' x 8'

Weight: A pad 1" thick weighs 3.5 lb/ft², a pad 2" thick weighs 7 lb/ft², a pad 3" thick weighs 10½ lb/ft²

Recommended Uses: Safety surfacing for use under playground equipment, on walkways, decks, handicap ramps, cart paths, jogging trails, balconies, and for marine use

Pricing & Ordering: Pricing is by the unit of Flexi-Pad™. Freight and installation are not included. Installation is available if desired.

Installation: This is a pre-formed product that should be carefully installed. The weight is a significant factor and improper handling or installation can result in breakage.

Recommended substrate: Can be installed over crushed stone, mulch, compacted dirt or sand, or on an existing engineered surface such as asphalt, concrete, or pool decking

Surface preparation: Substrate should be flat before installation

Specifications: Made from pre-colored 3/8" nominal granules of recycled tires bonded by a single component urethane. Normally made 1", 2", or 3" thick.

ASTM Safety Standards: Meets ASTM 1292 safety requirements for 6 ft critical fall height at 2" thick.

Safety Information: MSDS are available upon request.

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MATERIAL SAFETY DATA SHEET

Page 1 of 3
DATE: AUGUST 2005

K.B.INDUSTRIES, INC.
28100 US HWY. 19 NORTH, SUITE 410,
CLEARWATER, FLORIDA. 33761 USA.
TEL: (001) 727- 726- 2700
FAX: (001) 727- 726- 2800

I. PRODUCT IDENTIFICATION

PRODUCT NAME: **FP35**
PRODUCT CODE: **FP35**

CHEMICAL FAMILY: **POLYURETHANE CEMENT**

OSHA HAZARD
COMMUNICATION STATUS: THIS PRODUCT IS NOT HAZARDOUS UNDER THE CRITERIA OF
THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29
CFR 1910.1200

FIRE: THIS PRODUCT IS CLASSIFIED AS NON FLAMMABLE

II. HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS NO.	CONTENTS	HEALTH CLASS	RISK
DIPHENYL METHANE-4, 4'-DI-ISOCYANATE WITH CATALYST (LESS THAN 0.1%)	101-68-8	10-30%	Xn	20, 26/37/38, 42/43

III. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Liquid
CHANGE IN PHYSICAL STATE:
Setting Point: -18°C
Initial boiling point: 260°C
DENSITY: approx. 1.1 g/cm³ at 20°C
VAPOR PRESSURE: <0.0003mmHg @ 25C
VISCOSITY: approx. 1800-2600 mPas at 25°C
SOLUBILITY IN WATER: insoluble, reacts
pH VALUE: not applicable
FLASH POINT: >200°C
FREE NCO CONTENT: approx. 10%
EXPLOSIVE LIMITS: N/A
THERMAL DECOMPOSITION: N/A
HAZARDOUS DECOMPOSITION PRODUCTS: No hazardous decomposition products if stored
and handled correctly.
HAZARDOUS REACTIONS: Exothermic reaction with amines and alcohols; reacts with water
forming CO₂.
FIRE & EXPLOSION HAZARDS: Not classed as flammable. If involved in a fire, it may emit noxious and toxic fumes. Due to reaction
with water producing CO₂ gas, a hazardous build-up of pressure could result if contaminated
containers are re-sealed.

FP35

IV. LABELLING FOR USER PURPOSES AND TRANSPORT

EEC Classification:	Harmful
Hazard Symbol:	X _n
Risk Phrases:	R20 Harmful by inhalation
	R42 May cause sensitization by inhalation
Safety Phrases:	S23 Do not breathe gas / fumes / vapor / spray
	S24/25 Avoid contact with skin and eyes
	S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
	S37 Wear suitable gloves
	S38 In case of insufficient ventilation, wear suitable respiratory equipment
	S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	P4 Contains isocyanates

V. STORAGE AND HANDLING

USAGE PRECAUTIONS: Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level.

STORAGE PRECAUTIONS: Keep in cool, dry ventilated storage and closed containers. Keep in original container. Store below 25C.

HAZARDOUS REACTIONS: Reaction with water (moisture) produces CO₂ gas. Exothermic reaction with materials containing active hydrogen groups.

VI. EXPOSURE AND PERSONAL PROTECTION

<u>INGREDIENT NAME:</u>	CAS No.	STD	LT EXP	ST EXP
Diphenyl Methane-4, 4'-Di-isocyanate	101-68-8	MEL	(8 hrs) 0.02MG/M3 (Sen)	(15 min) 0.07mg/m3 (Sen)

PERSONAL PROTECTION

Gloves: At all times.
Eye Protection: At all times.
Respirators: Suitable respiratory equipment with positive air supply should be used in cases of insufficient ventilation or where operational procedures demand it.
Hygienic Routine: DO NOT SMOKE IN WORK AREA. No eating or drinking while working with this material.

FIRE AND EXPLOSION HAZARDS:

Not classed as flammable. If involved in a fire, it may emit noxious and toxic fumes. Due to reaction with water producing CO₂ gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed.

DISPOSAL:

Disposal should be in accordance with local, state or national legislation.

Small quantities and empty drums: pre-treat to neutralize prior to disposal.
Large quantities: incinerate under approved controlled conditions, using incinerators suitable for the disposal of noxious chemical waste.

FP35

VII. EMERGENCY MEASURES

ACCIDENTAL RELEASE:

Wear necessary protective equipment. Ventilate well. Avoid contact with skin or inhalation of spillage, dust or vapor. Collect with absorbent, non-combustible material into suitable containers. Containers with collected spillage must be properly labeled with correct contents and hazard symbol. Avoid water on spilled material or leaking containers. Do not contaminate water sources or sewer.

FIRE FIGHTING EQUIPMENT.

Extinguishing media: Use powder, CO2 or foam. DO NOT use water if avoidable.

Special fire fighting procedures: Do not get water inside container. NOTE: Use air supplied respirators to protect against gases / fumes. Use special clothing. PVC boots should be worn.

FIRST AID:

<u>Skin contact:</u>	Wash immediately with water followed by soap and water. If symptoms persist, Obtain medical attention. Contaminated clothing should be laundered before Re-use.
<u>Eye contact:</u>	Irrigate immediately with plenty of clean water or an eyewash solution for at least 15 minutes. Obtain medical attention.
<u>Inhalation:</u>	The affected person should be moved to fresh air and made to rest. Obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm.
<u>Ingestion:</u>	Give water or milk to drink. Do <u>not</u> induce vomiting. Obtain medical attention as a precaution. Treat symptomatically. Get medical attention.

VIII. TOXICOLOGICAL INFORMATION

<u>HEALTH WARINGS:</u>	INHALATION. Preparation contains small amounts of isocyanate that may cause allergic reaction and irritation of respiratory system. Prolonged inhalation of high concentrations may damage respiratory system. SKIN CONTACT. Irritating to skin. May cause sensitization by skin contact. EYE CONTACT. Irritating to eyes INGESTION. May cause discomfort
<u>TARGET ORGANS.</u>	Skin. Eyes. Respiratory system, Lungs.

Summary: This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of the vapor at levels above the OEL could cause respiratory sensitization. It may cause mild eye irritation and slight skin irritation (P.I. Index = 1). It may cause skin sensitization. This product is of low acute toxicity by ingestion (LD50 > 5g/kg) and of no more than slight toxicity by skin absorption.

The information and recommendations in this publication are to the best of our knowledge, information and belief to be accurate at the date of publication. Nothing herein is to be construed as a warranty, express or implied. In all cases, it is the responsibility of users to determine the applicability of such information or the suitability of any products for their own particular purpose.



MATERIAL SAFETY DATA SHEET

Page 1 of 3

DATE: AUGUST 2005

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28100 US HWY. 19 NORTH, SUITE 410,
CLEARWATER, FLORIDA. 33761. USA.
TEL: (001) 727- 726- 2700
FAX: (001) 727- 726- 2800

I. PRODUCT IDENTIFICATION

PRODUCT NAME: **FP45**

PRODUCT CODE: **FP45**

CHEMICAL FAMILY: **POLYURETHANE CEMENT**

OSHA HAZARD

COMMUNICATION STATUS: THIS PRODUCT IS NOT HAZARDOUS UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200

FIRE: THIS PRODUCT IS CLASSIFIED AS NON FLAMMABLE

II. HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS NO.	CONTENTS	HEALTH CLASS	RISK
DIPHENYL METHANE-4, 4'-DI-ISOCYANATE WITH CATALYST (LESS THAN 0.1%)	101-68-8	10-30%	Xn	20, 26/37/38, 42/43

III. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Liquid

CHANGE IN PHYSICAL STATE:

Setting Point: -18°C

Initial boiling point: 260°C

DENSITY: approx. 1.07 g/cm³ at 20°C

VAPOR PRESSURE: <0.0003mmHg @ 25C

VISCOSITY: approx. 1800-2600 mPas at 25°C

SOLUBILITY IN WATER: insoluble, reacts

pH VALUE: not applicable

FLASH POINT: >240°C

FREE NCO CONTENT: approx. 10%

EXPLOSIVE LIMITS: N/A

THERMAL DECOMPOSITION: N/A

HAZARDOUS DECOMPOSITION PRODUCTS: No hazardous decomposition products if stored and handled correctly.

HAZARDOUS REACTIONS: Exothermic reaction with amines and alcohols; reacts with water forming CO₂.

FIRE & EXPLOSION HAZARDS: Not classed as flammable. If involved in a fire, it may emit noxious and toxic fumes. Due to reaction with water producing CO₂ gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed.

FP45

IV. LABELLING FOR USER PURPOSES AND TRANSPORT

EEC Classification:	Harmful
Hazard Symbol:	X _n
Risk Phrases:	R20 Harmful by inhalation R42 May cause sensitization by inhalation
Safety Phrases:	S23 Do not breathe gas / fumes / vapor / spray S24/25 Avoid contact with skin and eyes S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S37 Wear suitable gloves S38 In case of insufficient ventilation, wear suitable respiratory equipment S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). P4 Contains isocyanates

V. STORAGE AND HANDLING

<u>USAGE PRECAUTIONS:</u>	Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level.
<u>STORAGE PRECAUTIONS:</u>	Keep in cool, dry ventilated storage and closed containers. Keep in original container. Store below 25C.
<u>HAZARDOUS REACTIONS:</u>	Reaction with water (moisture) produces CO ₂ gas. Exothermic reaction with materials containing active hydrogen groups.

VI. EXPOSURE AND PERSONAL PROTECTION

<u>INGREDIENT NAME:</u>	CAS No.	STD	LT EXP	ST EXP
Diphenyl Methane-4, 4'-Di-isocyanate	101-68-8	MEL	(8 hrs) 0.02MG/M3 (Sen)	(15 min) 0.07mg/m3 (Sen)

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Gloves:	At all times.
Eye Protection:	At all times.
Respirators:	Suitable respiratory equipment with positive air supply should be used in cases of insufficient ventilation or where operational procedures demand it.
Hygienic Routine:	DO NOT SMOKE IN WORK AREA. No eating or drinking while working with this material.

FIRE AND EXPLOSION HAZARDS:

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DISPOSAL:

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FP45

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ACCIDENTAL RELEASE:

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<u>Inhalation:</u>	The affected person should be moved to fresh air and made to rest. Obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm.
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<u>TARGET ORGANS:</u>	Skin. Eyes. Respiratory system, Lungs.

Summary: This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of the vapor at levels above the OEL could cause respiratory sensitization. It may cause mild eye irritation and slight skin irritation (P.I. Index = 1). It may cause skin sensitization. This product is of low acute toxicity by ingestion (LD50 > 5g/kg) and of no more than slight toxicity by skin absorption.

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