

# perkEpave

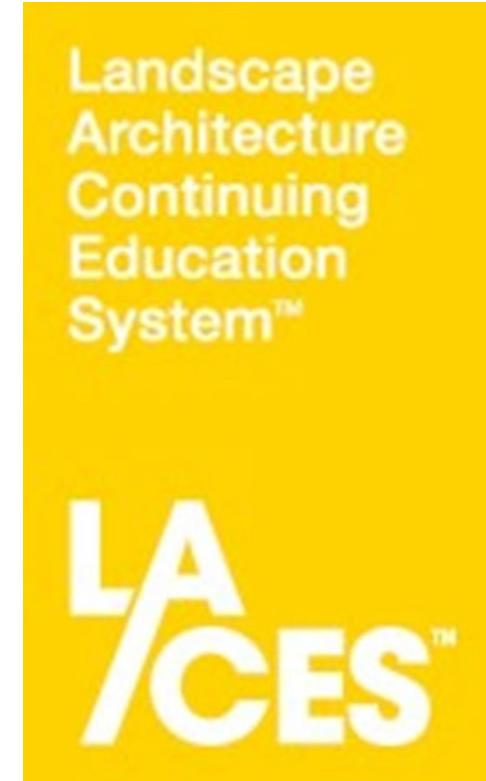
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A SUPERIOR BRAND OF  
FLEXIBLE POROUS PAVING

# Learning Objectives

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- Traditional porous paving VS Flexible Porous Paving
- Benefits of Flexible Porous Paving
- History
- Applications
- Color Options
- Installation Techniques
- Testing
- Available Documents
- Pricing
- Quiz





Concrete



Pavers



Asphalt

## Commonly Used Permeable Paving

Rigid, routine vacuuming required, susceptible to cracking through freeze thaw, poor permeability.

# What is Flexible Porous Paving

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Slip Resistant  
Extremely Porous  
Non-Cracking  
Minimal Maintenance



WIRE FREE RECYCLED, COLOR  
COATED RECYCLED TIRE CHIPS.



TRIPLE WASHED AND KILN  
DRIED STONE AGGREGATE.



METHYLENE DIPHENYL  
DIISOCYANATE (MDI) BINDER



Save on Maintenance



Joint Pain Relief



Minimize Runoff

Flexible porous makes Good Sense

Also, a practical use for discarded tires



**Pervious Pavements - Installation, Operations and Strength**  
**Part 4: Flexipave® (Recycled Rubber Tires) Systems**

Work Performed for the Florida Department of Transportation



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Orlando, FL 32816



FDOT Project Number: BDK78; Work Order #977-01  
UCF Office of Research Account Number: 16-60-7024

August 2011

Available  
On perkEpave  
Website

**DISTRICT OF COLUMBIA**  
**DEPARTMENT OF TRANSPORTATION**



**GREEN INFRASTRUCTURE  
STANDARDS**

2014

Available  
On perkEpave  
Website

# History of Flexible Porous Paving

Developed in Germany in early 1990s, Introduced to USA early 2000s under the Flexi Pave brand,. Studied by University of Central Florida in 2011, Added to the DC DOT Standards in 2014

# perkEpave LLC

Established in 2017

Providing a Superior Flexible Porous Paving at Competitive Pricing with Outstanding Customer Service

- Quality colored rubber
- High tensile strength binder
- Triple washed kiln dried stone
- Optimum mix ratio
- Installations in 16 States and the District of Columbia
- 48 contractors and/or municipal work crews trained on installation techniques

# Application

Save Trees and Minimize Sidewalk Maintenance - Walk Run Tree 11 Mix



SAVING MATURE TREES .

ELIMINATE TRIPPING HAZARDS.

MINIMIZE SIDEWALK MAINTENANCE.

# Application

## Walking and Running Trails and Paths - Walk Run Tree 11 Mix



FLEXIBLE RUNNING SURFACE

ALONG TREE LINE.

THROUGH ENVIRONMENTAL AREAS.

# Application

Playground Fall Protection - Play Safe 01 Mix



ALL RECYCLED WITH  
FLEXIBLE BINDER



MANAGING STORMWATER.



TESTED FOR 5' - 15' FALL HEIGHT.

perkEpave Play Safe  
Fall Protection

## Application Ride Drive Park 31 Mix

Tested to withstand  
26,000 per square  
foot

Residential driveways,  
parking stalls and  
trench drains



**perkEpave Ride, Drive, Park  
is durable and extremely permeable;  
minimizing impervious surface, allowing  
for additional building foot print.**

Eliminating Impervious Surface

Products are  
mixture of Rubber,  
Stone and Binder

Rubber and Stone can be  
mixed in a many  
combinations to achieve  
the required look and  
application to fit with the  
project design.

## Color Options



GREEN



GRAY



CYPRESS



NATURAL BEIGE



TAN



REDWOOD



BROWN



CRUSHED  
SALT & PEPPER



# Popular Color Combinations



GREY BROWN S&P STONE



BROWN GREEN BEIGE STONE



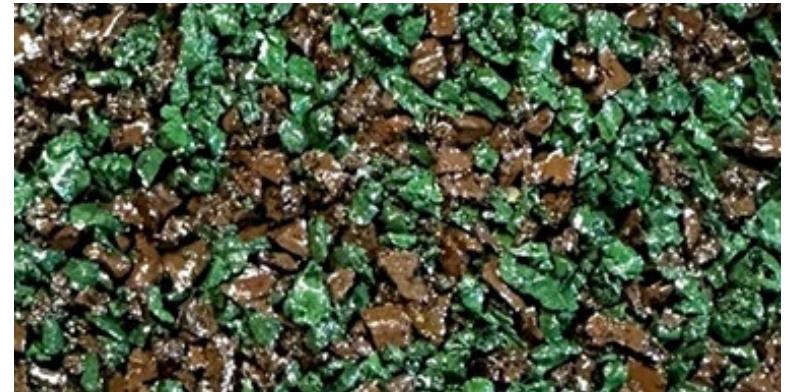
BROWN TAN GRAY



TAN BROWN BEIGE STONE



GREY GREEN S&P STONE



BROWN GREEN.

# Mixing Flexible Porous Paving

Rubber is supplied in 50 lb. bags, 40 bags to a full pallet

Stone is supplied in 50 lb. bags, 56 bags to a full pallet

Binder is supplied in either 5-gallon buckets or 250-gallon totes



Binder Stains  
Where Gloves  
And Keep off  
unwanted  
surfaces

Mist mixer with  
form release  
Often to  
prevent buildup

A crew of 6 can install an average 1,800 sq ft  
Over a prepared base in an 8-hr. workday

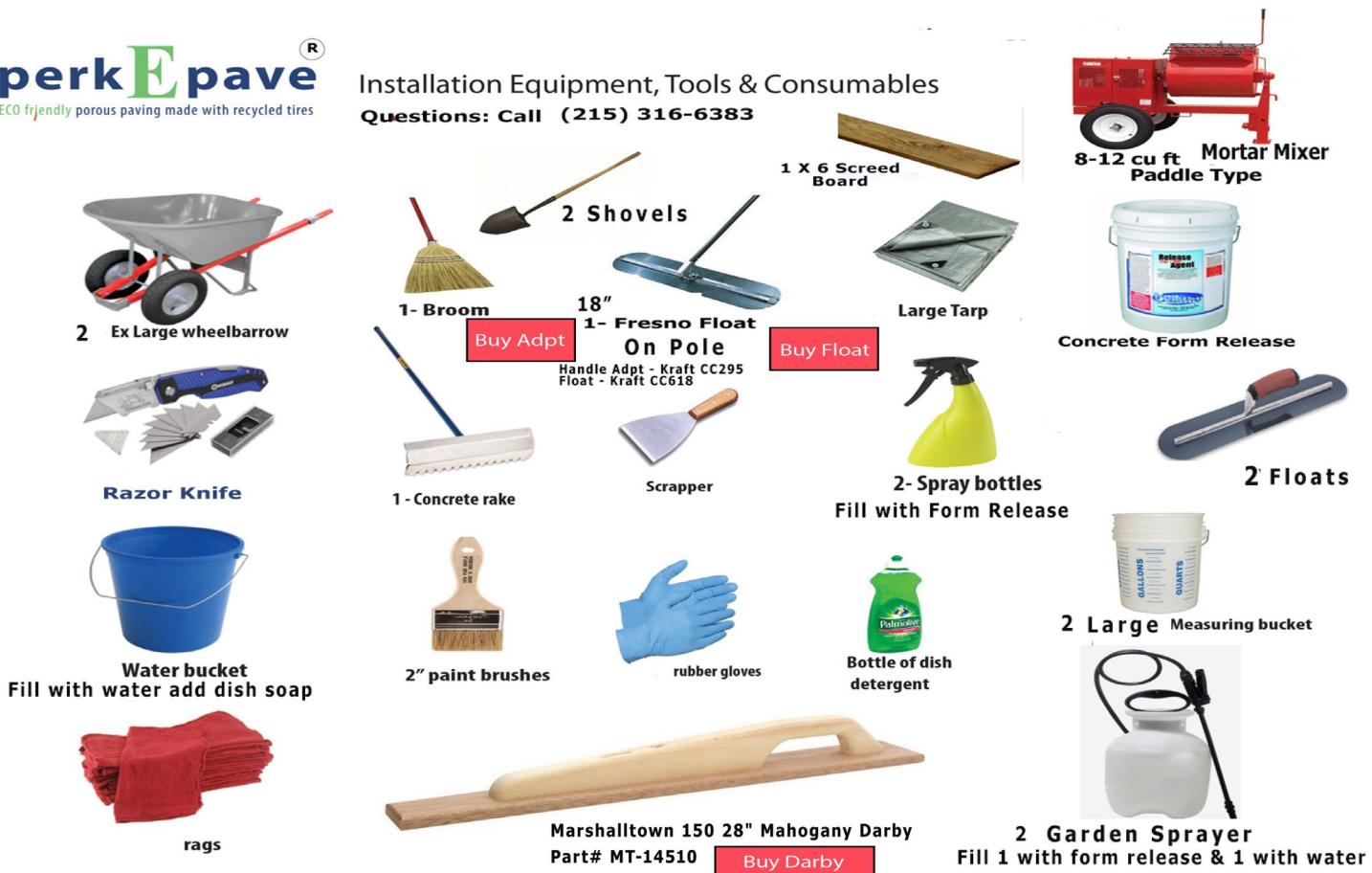
# perkEpave Installation Tools & Consumables

Available on the documents page of [perkEpave.com](http://perkEpave.com)

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Paddle type  
mortar mixer  
must be used  
to mix products

**perkEpave**  
ECO friendly porous paving made with recycled tires



Form release  
needs to be  
applied to  
floats often for  
smooth finish

# Tree Surround Remediation

## IMPORTANT

- Do not damage roots
- Coat matting surface with binder
- Binder stains, avoid getting it on finished surfaces
- Tamp and compact stone base



### Step 1- Remove Existing Soil

Remove existing soils to depth of 4"- 6" below elevation of existing concrete, where possible and without damaging existing tree roots.



### Step 2 - Place Clean #57 Stone

Place stone and tamp to 1.5 inches below existing concrete.  
No geotec fabric required around the root ball area of the tree.



### Step 3 - Coat Concrete With Binder

Coat mating surface with binder to assure perkEpave adheres to the surface and eliminates tripping hazards that may develop over freeze thaw cycles



### Step 4 - Mix & Place perkEpave

Mix 1 bag of rubber with 1 bag of stone and 5 quarts of binder (producing 16 sq ft - 1.5 thick) and place over stone; screed and finish with float coated with form release

# Trail, Path, Sidewalk Installation

## IMPORTANT

- The product is as good as the base, compact as necessary to support the required weight.
- Screeeding is the first task in the finishing process
- Form release must be applied to the finishing tools often to achieve a smooth finish.
- Tools and mixer should be cleaned as soon as possible.
- Binder reacts with the binder and should never be introduced to the mix.



PLACE GEOTECH FABRIC AND STONE BASE



COMPACT STONE BASE



TRANSFER MIX TO POINT OF INSTALLATION



SCREED FIRST AND FINISH WITH FLOAT

# Extremely Permeable and Porous

- Flow through rate of over 2,000 gallons per hour per sq ft.
- Over 30% void capacity



# perkEpave Test Results

## Available on the documents page of perkEpave.com

**CTL**  
CERTIFIED TESTING LABORATORIES, INC.

CLIENT:	perkEpave, LLC	DATE TYPED:	9/26/18
PROJECT:	perkEpave	REPORT NO:	PP-1
DATE RECEIVED:	September 26, 2018	TECHNICIAN:	CTL/G. Riegel

**COMPRESSION TEST**

MATERIAL: Flexible Porous Paving (4" x 4") Material

IDENTIFICATION	Standard Mix #1	Standard Mix #2	Standard Mix #3	HD Mix #1	HD Mix #2
Submitted Measurement:	1.71	1.64	1.52	1.69	1.66
Measurement after 1,000 lbs.	1.68	--	--	--	--
Measurement after 2,000 lbs.	--	1.60	--	--	--
Measurement after 3,000 lbs.	--	--	1.49	1.69	--
Measurement after 4,000 lbs.	--	--	--	1.65	1.56
Measurement after 10,000 lbs.	1.55	--	--	--	1.53

REMARKS: The high density (HD) mix retained its rigidity structure up to 3,000 lbs. (13.5 TSF), it sprung back to original thickness within 0.10", and the destruction of its rigidity and bond was at 4,000 lbs.

The standard mix retained its rigidity structure up to 2,500 lbs. (11.25 TSF), it sprung back to original thickness within 0.10", and the destruction of its rigidity and bond was at 3,000 lbs.

Report to: - Email

Respectfully submitted,  
CERTIFIED TESTING LABORATORIES, INC.

  
Glenn M. Riegel

Laboratory Manager

ILs  
All reports are the confidential property of Clients, and information contained may not be published or reproduced, pending our written approval.

Walk Run Mix 22,000 lb. per sq ft  
Ride Drive 26,000 lb. per sq ft

**perkEpave** LLC  
ECO friendly porous paving made with recycled tires

418 Wilson St Pottstown, PA 19464 · (215) 316-6383 – perkEpave.com

### 1) System Construction Summary

- A 10" diameter by 2" thick sample of perkEpave was poured into a 5-gallon bucket with the bottom of the bucket removed. Sample 10" diameter – 78.5 sq. in. - .545 sq. ft.



### 2) Testing Procedures

- A second 5-gallon bucket was filled with water. This bucket of water was poured into the bucket containing the perkEpave sample and the time it took to flow through the sample was clocked and repeated 5 times. The time recorded ranged from 10.5 seconds to 12.35 seconds. For testing purposes and to be conservative in calculating the permeability 15 seconds is being used in determining the results.



### 3) Results

- 5 gallons of water will pass through .545 square ft of perkEpave in 15 seconds.
- Therefore 5 gallons of water will pass through 1 sq. ft in 8.175 seconds (conservatively 5 gallon of water will pass through 1 sq. ft of perkEpave in 9 seconds)
- 3,600 seconds in 1 hour divided by 9 = 400 x 5 = 2,000 gallons
- Published Factor: perkEpave has a permeability rate greater than 2,000 gallons per hour per square foot.**

I hereby verify that the results presented in this report were obtained on the sample as described, said date and are believed to be accurate representations of the performance of the perkEpave paving system.

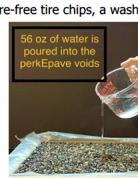
  
Thomas E. Carroll

**perkEpave** LLC  
ECO friendly porous paving made with recycled tires

418 Wilson St Pottstown, PA 19464 · (215) 316-6383 – perkEpave.com

### 1) System Construction Summary

- A perkEpave sample was constructed of recycled wire-free tire chips, a washed and kiln dried stone aggregate and a urethane binder. Sample dimensions: 12" x 12" x 1.5" thick.



### 2) Testing Procedures

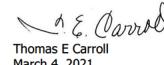
- The sample was removed from the form after it was fully cured. The sample was then wrapped tightly along the bottom and up the sides with plastic and placed back into the form to hold the plastic membrane tightly in place to assure pores within the sample are the only voids available to store water.
- Next water was poured into the sample until the water filled the voids within the perkEpave to the top of the sample with no puddling.



### 3) Results

- A square foot of perkEpave 1.5" thick will hold 56 oz of water.
- A cubic foot of perkEpave will hold (8 X 56 oz) 448 oz (3.5 gal) of water.
- 3.5 gal/7.48 gal (gal in a cu ft of water) / = .467 void in a cu ft of perkEpave
- Published Factor: perkEpave has a 40% void capacity**

I hereby verify that the results presented in this report were obtained on the sample as described, said date and are believed to be accurate representations of the performance of the perkEpave paving system.

  
Thomas E. Carroll

March 4, 2021

May Flow rate - over 2,000 gallons  
Per hour per square foot

Over 30 % void capacity  
1 sq ft x 1.5" holds 56 oz of water

Installation temperature range 45-90 degrees farinheit

6598 E Canton S. Boston Rd. | Salem, IN 47167 | USA

**ASET SERVICES**  
Engineering Consulting Product Research Field Testing and Inspections

Phone: 812.528.2743 Fax: 812.531.0045 [www.asetservices.comyou](http://www.asetservices.comyou)

### Suitability Test Report

Issued To:  
perkEpave LLC  
418 Wilson Street  
Pottstown, PA 19464  
USA

Standard:  
F1292 (2018): Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment

System Name:  
perkEpave Safe 3 inch

Date of Suitability Testing	Dec 17, 2019
Suggested Retest Date	Dec 17, 2026
Report Number	F1292-121719-01
Pages	5

Evaluated ASTM F2970 (2015) Performance Property	Test Results @ 6 ft Fall (Avg Values)		Test Results @ 7 ft Fall (Avg Values)	
	Gmax	HIC	Gmax	HIC
Point 1	135	711	156	945
Point 2	133	722	159	968
Average	134	717	158	957

### Meets a critical fall height of 7 ft using ASTM F1292-18

Notes:  
1 - Key construction details are highlighted in Section 3 (page 3) of this report. Specifications and installation instructions containing these key details have been supplied and reviewed. Necessary tools and methods to achieve proper anchoring have also been addressed in the specification and installation instructions.

2 - This document contains enhanced digital and duplication security features. More information can be found on our website: [www.asetservices.com/blog](http://www.asetservices.com/blog).

3 - This report contains 5 pages, and may not be used for commercial purposes unless it is reproduced in its entirety.

4 - Suggested Retest: Periodic retesting is suggested ASET Services in order to ensure that products continue to conform to the standard. Periodic retesting can involve lab or field testing.

Play Safe – tested for  
5'-11' Fall Heights

# perkEpave – Additional Documents

## Available on the documents page of perkEpave.com

Products  
Cure in  
24  
hours

 COMMONWEALTH OF PENNSYLVANIA 	<b>FULLY EXECUTED</b> Contract Number: 014-E22-243 Original Contract Effective Date: 04/09/2022
Supplier Name/Address PERKEPAVE LLC 418 WILSON ST POTTSSTOWN, PA 19464	Commodity Specialist Name: Kathy Garman Phone: 717-346-4056 Fax: 717-783-6241
Your SAP Vendor Number: 537326	Contract Name: Recreational & Fitness Equipment and Services
Supplier Phone Number: 215-316-6383	Solicitation No: COSTARS-14
<p>The issuance of this document constitutes evidence of a fully-executed contract between the Commonwealth of Pennsylvania and the Supplier.</p> <p>This contract is comprised of: The above referenced Solicitation, the Supplier's Bid, and any documents attached to this Contract or incorporated by reference in the solicitation and/or Supplier's Bid.</p>	

Member of COSTARS  
PA State Buying Program

**perkEpave™**

ECO friendly porous paving made with recycled tires

## MAINTENANCE

Maintenance is largely dependent on the location and amount of use. Keeping the surface clean and clear of debris; maintaining porosity and aesthetics of the surface is important.

Because of the 20 percent void capacity and flexibility of the recycled tire chips, perkEpave requires minimal maintenance. Small particles of debris will flow through the product, not stick to the recycled tire chips and accumulate in the clean #57 stone under the perkEpave to dissipate into the soil.

Routine maintenance can be achieved with the use of a leaf blower or light sweeping with a house hold broom.

Extensive maintenance may become necessary when, on the rare occasion the porosity of the product becomes clogged or if the surface begins to show signs of deterioration.

Prior to pursuing extensive maintenance, it is recommended the following be done on a yearly basis.

- Visually inspect the surface for evidence of sediment deposit and deterioration of the surface
- Pour water on the suspected area and note the water perk rate.
- Vacuum area if ponding occurs.
- If after 4 to 6 years of hard use, with deterioration of the surface beginning to show; a roll-on coating of perkEpave binder is the solution to maintaining the surface appearance.

Winter maintenance:

- Snow plowing perkEpave is acceptable for removing snow, if care is taken as not to dig the plow blade into the surface. Only rubber-tired equipment is to be used; track machines can cause damage to the surface. Mechanical brushing of snow from the surface is not permitted.
- Salting perkEpave is not required, but salt on the surface will not damage perkEpave.

In general; perkEpave should be maintained like any other outside surface; remove trash, leaves and debris that appear on the surface of the product and vacuum if necessary.

**perkEpave – product  
Maintenance Document**

**CURV-RITE**

## ALUMINUM EDGINGS

Home Page Landscape Edging Paver Restraint Installation Ideas Contact Us

<http://www.curv-rite.com/> 1-800-366-2878

### 4000 SERIES HEAVY DUTY EDGE RESTRAINT

#### Available Sizes and Finishes:

1" High x 2" Wide Base x 8' Long	Deco-Black and Mill Finish (Natural Aluminum)
1.5" High x 2" Wide Base x 8' Long	Deco-Black and Mill Finish (Natural Aluminum)
2" High x 2" Wide Base x 8' Long	Deco-Black and Mill Finish (Natural Aluminum)
2.5" High x 2" Wide Base x 8' Long	Deco-Black and Mill Finish (Natural Aluminum)
3" High x 3" Wide Base x 8' Long	Deco-Black and Mill Finish (Natural Aluminum)
4" High x 3" Wide Base x 8' Long	Deco-Black and Mill Finish (Natural Aluminum)

### 4000 Series Heavy Duty Edge Restraint by Curv-Rite



Aluminum Edging  
When permanent edging is

**perkEpave™**  
POROUS  
made with recycled tires

**Safety Data Sheet**  
acc. to OSHA HCS

Date of PDF Creation 03/01/2019

Page 1/11

Reviewed on 02/27/2019

#### 1 Identification

Product identifier:  
Trade name: perkEpave Play-Safe

Application of the substance / the mixture Binder

Details of the supplier of the safety data sheet

Manufacturer/Supplier:  
perkEpave LLC  
418 Wilson Street  
Pottstown, PA 19464  
215-316-6383  
[www.perkepave.com](http://www.perkepave.com)

Information department: Product Development Department

Emergency telephone number:  
For Chemical Emergency  
Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTRAC Day or Night.

Within USA and Canada (800) 424-9300  
Outside USA and Canada +1 (703) 527-3887 (Collect Calls Not Accepted)

#### 2 Hazard(s) identification

##### Classification of the substance or mixture

 GHS08 Health hazard

Resp. Sens. 1A H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

 GHS07

Acute Tox. 4 H332 Harmful if inhaled.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
Skin Sens. 1 H317 May cause an allergic skin reaction.  
STOT SE 3 H335 May cause respiratory irritation.

Storage:  
Store in a well-ventilated place. Keep container tightly closed. In closed containers, there may be a risk of pressure build up due to water contamination (liberated CO2 Gas). Store locked up.

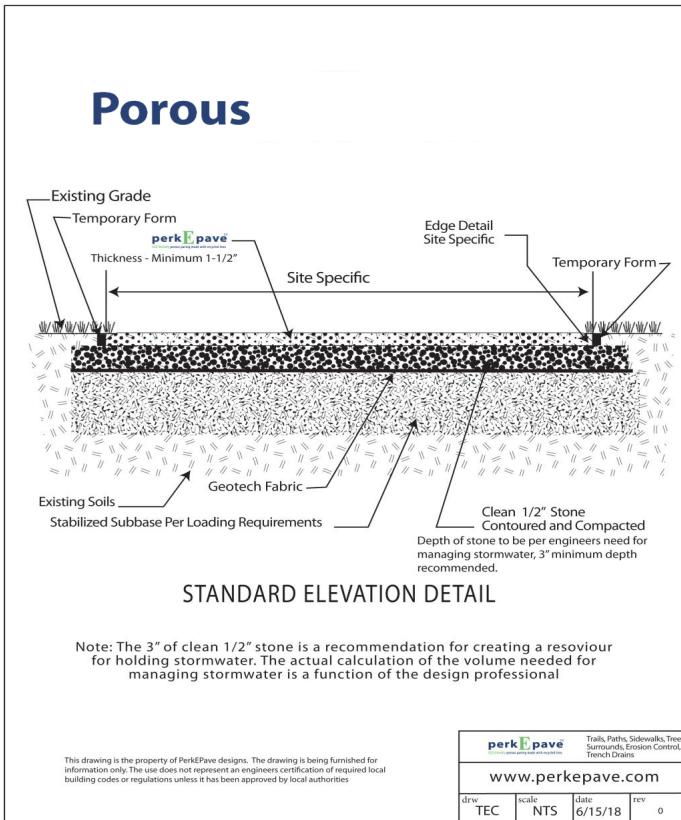
Label elements  
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).  
(Cont'd. on page 2)

**Safety Data Sheet**

# perkEpave Specs & Details

Available on the documents page of [perkEpave.com](http://perkEpave.com)

Water reacts with the binder and should never be introduced into the mix



## DEFINITION

- A. Flexible Porous Paving: Paving system comprised of combination of three components: recycled passenger car tires, aggregate, and urethane binder that provides a strong, pervious, yet flexible paving.

## INSTALLER QUALIFICATIONS

- A. Flexible Porous Paving installer shall be required to be familiar with installation procedures and to have attended the Manufacturer installation training program.
- B. Flexible Porous Paving installer shall employ no less than two Manufacturer-trained Flexible Porous Paving technicians on staff who directly oversee and perform the installations during all Flexible Porous Paving placement.

## PROJECT CONDITIONS

- A. Protect stored rubber and aggregate from moisture by covering material with sheet plastic. Binder to be stored within a temperature range of 45 to 90 degrees F.
- B. Avoid placing pervious paving if rain, snow, or frost is forecast within 24 hours. Protect fresh paving from moisture and freezing.
- C. Base aggregate shall be a clean #57 stone.

## FLEXIBLE POROUS PAVING

- A. Stone: Triple-washed and dried coarse aggregate (1/4 to 3/8 inch) per ASTM C 33. Bagged in 50 lb. quantity.
- B. Nominal maximum aggregate size shall not exceed 1/3 of the specified paving thickness.
- C. Rubber: Recycled passenger tires ground to 1/4" nominal with wire remnants removed.
- D. Binding agent: urethane liquid prepolymer based upon Diphenylmethane Diisocyanate.
- E. Mix Design: Using materials mix ratio as acceptable by the Manufacturer for the intended application.
- F. The volume by weight of aggregate shall be as required by the Manufacturer for the intended application.
- G. Forms shall be clean and free of debris of any kind, rust, and hardened concrete and make use of a Bio-diesel or vegetable oil as a form release.

## EXECUTION

- A. Prepare subgrade as specified in the contract documents or as directed by the Engineer. Porous Flexible Paving has a thickness of 1.5", over Clean Coarse Aggregate (#57 stone) with 95% compaction per AASHTO T-180, with an ideal thickness of 4 inches over stabilized sub-base.
- B. Construct subgrade to ensure that the required paving thickness is obtained in all locations.

**2026 Budget Pricing** Freight Included  
Contact us for a firm price proposal



**Approved Vendor**

Description	640-1,600 Sq Ft	1,600 -5,000 Sq Ft	5,000 -10,000 sq. ft.	10,000 sq. ft. +
perkEpave is sold by the square foot at the standard thickness of 1.5". Pricing is based on the 1.5" thickness; requests for thicker installations will be factored by the 1.5" pricing quoted. Pricing includes shipping cost.	\$ 7.95	\$ 5.95	\$ 5.50	\$ 4.75

#### APPLICATIONS

Running Tracks, Trails, Paths, Sidewalks, Tree Surrounds, Bridge Overlays, Erosion Control, Stormwater Management, Trench Drains, Bunker Lining (Golf Courses), Horse Stalls, Wash Down Stations, Road Verge (area between the curb and sidewalk), Driveways, Parking Stalls, Perimeter Drainage, Dog Parks, Permanent Mulch, Playground Safety Surface

#### INSTALLATION TRAINING

Remote webinar and onsite supervision and installation training.  
\$900.00

**perkEpave LLC**  
**perkepave.com**  
**(215) 316-6383**

**Specified as a porous flexible paving by DC DOT for the safe walks to school program.**

**Extremely permeable; over 2,000 gallons of rain water can pass through a square foot in one hour**  
**Crack resistant through freeze-thaw.**

**Slip resistant and ADA compliant**  
**Able to support 22,000 pounds per square foot over a properly install sub-base.**  
**Manufactured in the USA**  
**Requires minimal maintenance**  
**Simple to install**

# Quiz

---

What cures perkEpave and should never be added to the product mixture?

Moisture, Water

What is the average curing time for perkEpave?

24 Hours

What are storage requirements for perkEpave Rubber, Stone, and Binder?

Stored at above 45 degrees F and kept dry

What should be applied to the finishing floats to assure a smooth finish?

Form Release

# Quiz

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When should the tools and mixer be cleaned?

As soon as possible after use

What precaution should be taken when working with the binder?

Wear gloves and not allow the binder to get on unwanted surfaces.

What is the average square footage a 6-man crew can install in a day?

1,800 square feet

What type of mortar mixer is required for mixing perkEpave?

Paddle Type

# Quiz

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What is the flow through rate for a square foot of perkEpave?

2,000 gallons

What is the installation temperature for installing perkEpave?

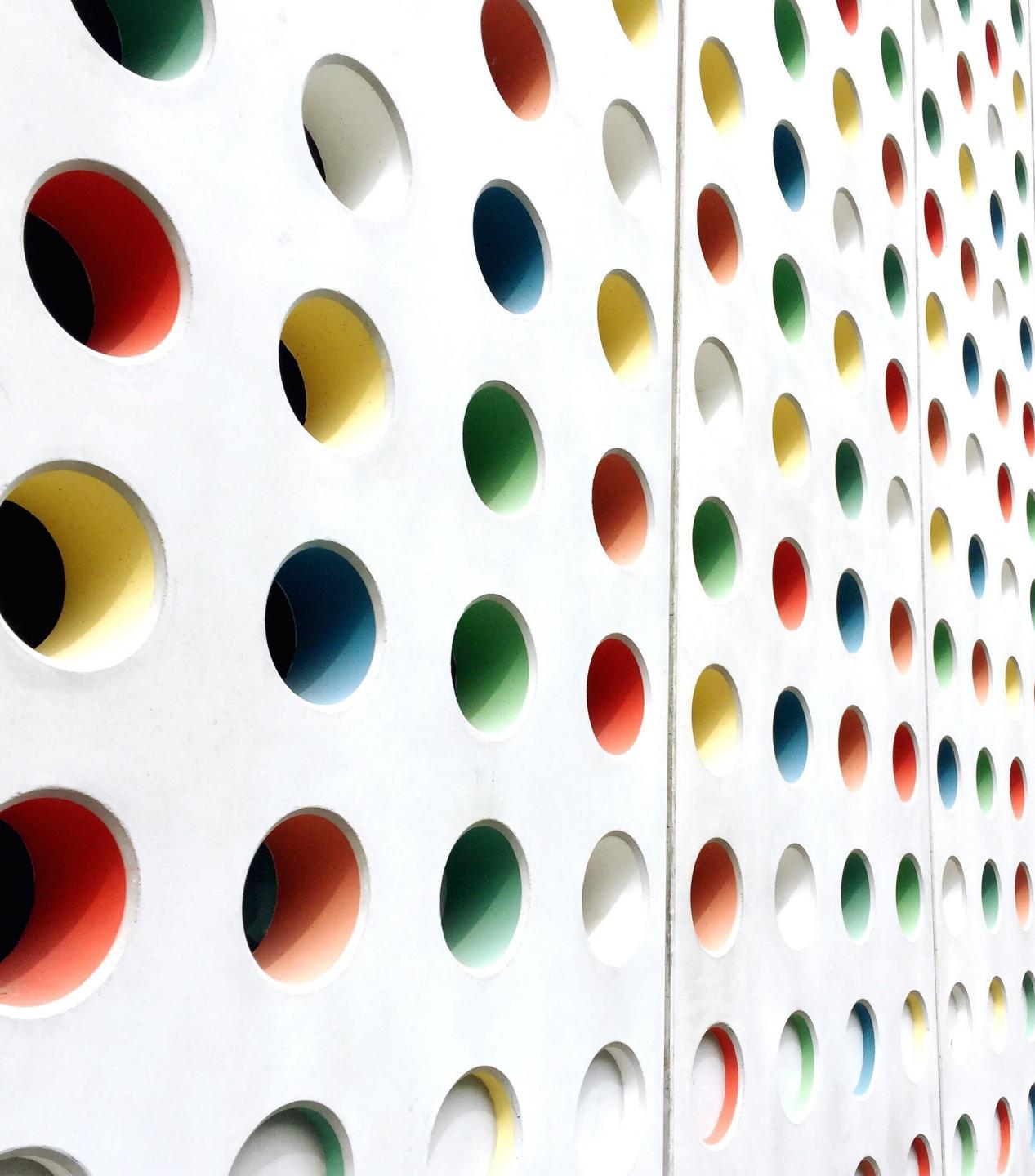
45-90 degrees F

What is the first phase of finishing to assure a flat surface?

Screeeding

What should be applied to the finishing floats to assure a smooth finish

Form Release



Thank You

perkEpave, LLC

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VISIT [PERKEPAVE.COM](http://PERKEPAVE.COM)

FOR ADDITIONAL INFORMATION