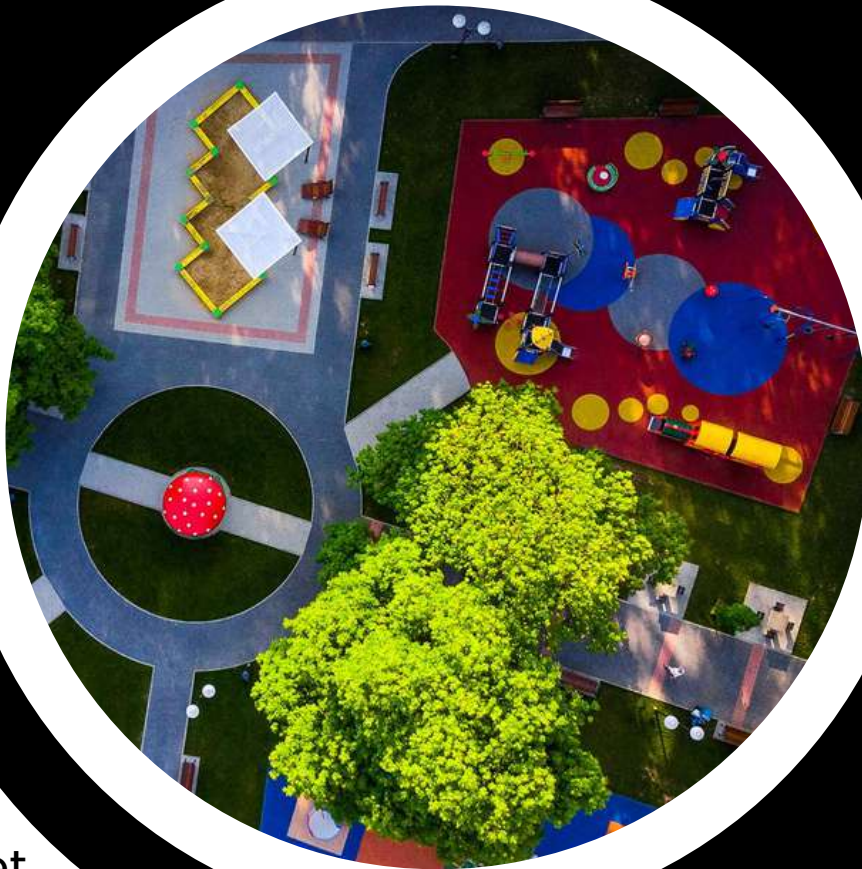




CUSTOM PARK **SURFACING**

Installation Guides + Safety Data Sheets



Justin Armstrong

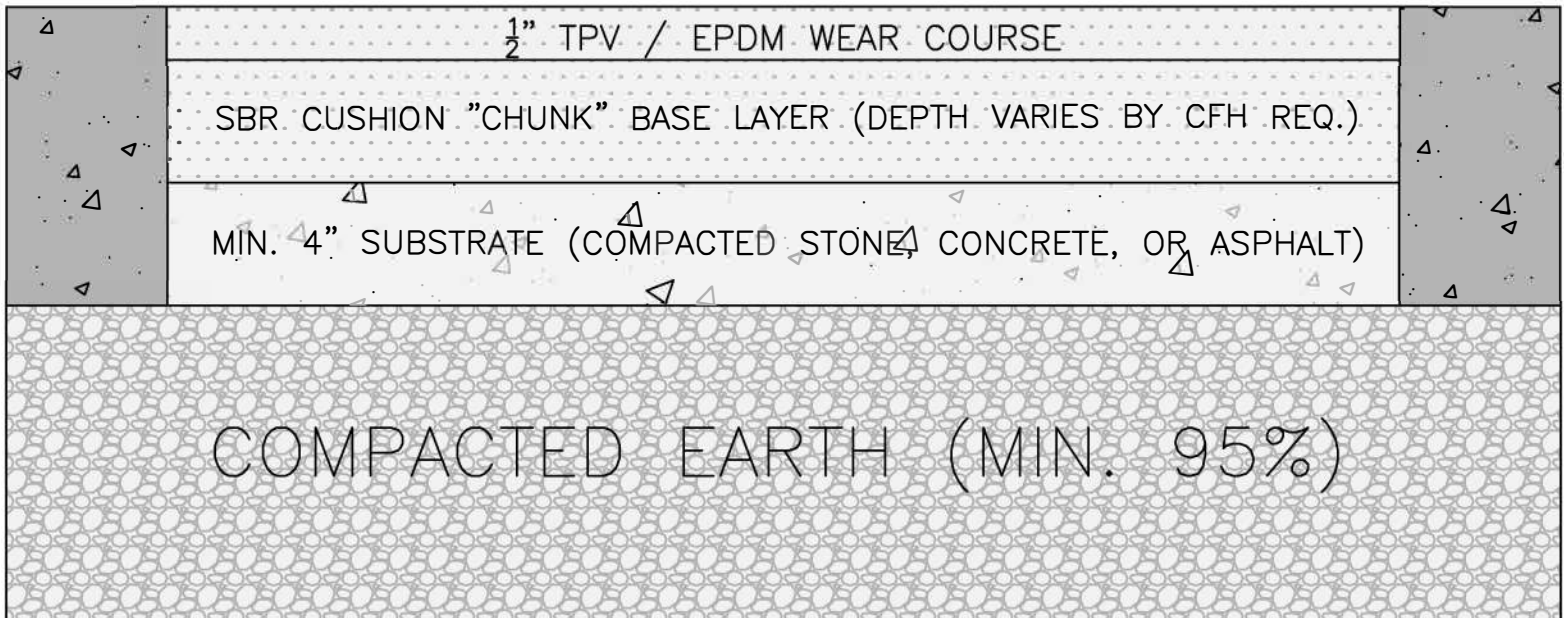
info@custompark.net

Mid-Atlantic: (410) 760-8200

Southeast: (904) 420-2249

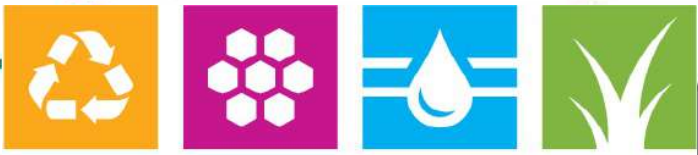


Poured-in-Place
(PIP) Flush to
Border/Curb



Notes:

1. INSTALLATION TO BE COMPLETED WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS NOT FOR CONSTRUCTION USE.
4. ALL INFORMATION MUST BE REVIEWED AND APPROVED BY MANUFACTURER TO DETERMINE ACCURACY.

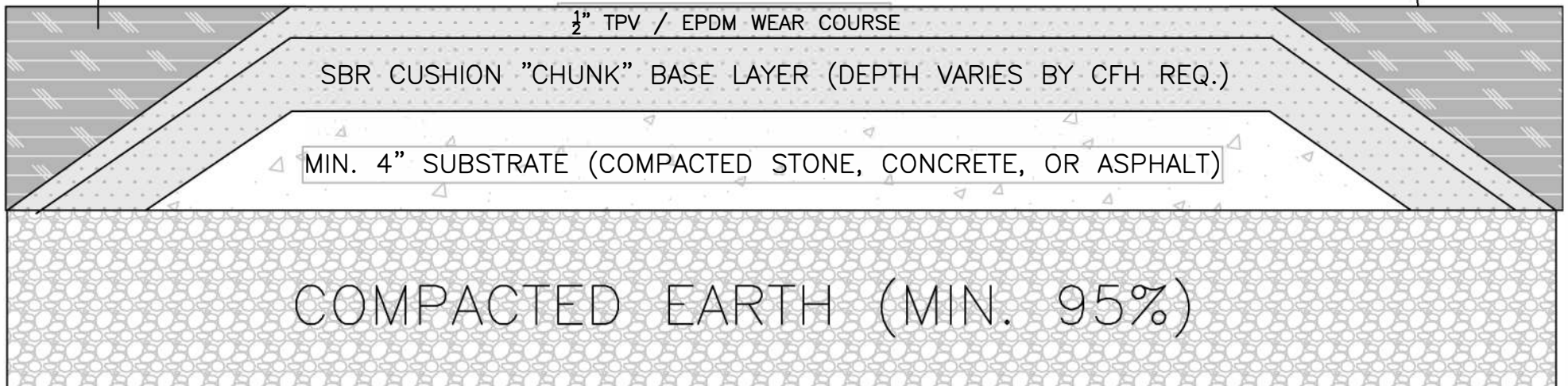


CUSTOM PARK SURFACING

Poured-in-Place (PIP)
with TURNDOWN EDGE

Backfill Material
(i.e. Loose Fill Dirt,
EWF, etc.)

Backfill Material
(i.e. Loose Fill Dirt,
EWF, etc.)



Notes:

1. INSTALLATION TO BE COMPLETED WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS NOT FOR CONSTRUCTION USE.
4. ALL INFORMATION MUST BE REVIEWED AND APPROVED BY MANUFACTURER TO DETERMINE ACCURACY.

SAFETY DATA SHEET

This form may be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200 and WHMIS Canadian Legislation.

10/26/2017

Premium Rubber Granules

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name: Premium Black Rubber Granules
Chemical Family: Polymeric (*fully processed*) Cured.
Specific Materials: EPDM, SBR (*high quality virgin industrial polymers*)

Product Weight: 55 lb , 1000 lb, 2000 lb

Details of the supplier of the safety data sheet:

Supplier: American Recycling Center, Inc.
655 Wabassee Drive
Owosso, MI 48867

Emergency Telephone Number

24-Hour Emergency Phone number: 800-424-9300
Customer Information Center: 989-725-5100

SECTION 2: HAZARDS IDENTIFICATION

Non-Hazardous as defined by OSHA Hazard Communication Standard CFR Title 29 Part 1910.1200 and the WHMIS Canadian Legislation.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Specific Gravity (H₂O = 1): 1.15 – 1.20
Solubility in water: Insoluble
Appearance & Odor: Granular, Black – Mild Characteristic Odor
%of Volatiles by volume: None

SECTION 4: FIRST AID MEASURES

Inhalation: Not Relevant
Eye Contact: Avoid Dust in Eyes, Do Not Rub eye.
Effects of Ingestion: None expected. Treat Symptomatically
First Aid Procedures: Not expected to require First Aid

SECTION 5: FIREFIGHTING MEASURES

Extinguisher Media:
Standard fire extinguisher, water, CO₂ Foam, Water fog, Water spray, Protein type air foam, Dry Chemical.
Special Fire Fighting Procedures:
Regular procedures for rubber fires.
Wear self-contained breathing apparatus.
Treat as a hydrocarbon fire.
Unusual Fire & Explosion Hazards:
NONE

SECTION 6: ACCIDENTAL RELEASE MEASURES

Not Relevant
No special procedures necessary.
Waste disposal method:
Sweep, vacuum into disposal containers
Dispose of according to Federal, State, and local regulations



SECTION 7: HANDLING AND STORAGE

Ventilation: Local exhaust

Eye Protection: Safety glasses

Precautions in handling:

Personal hygiene: frequent washing with soap and water of exposed areas, remove and clean solid clothing.

Precautions in storage: Normal material storage

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment

Hand Protection



For prolonged or repeated skin contact use suitable protective gloves

Use eye protection when necessary depending on use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Appearance Granular

Color black

Odor Odorless.

Solubility Insoluble in water

SECTION 10: STABILITY AND REACTIVITY

Stable under normal temperature conditions and its designed use

Conditions to avoid: Do not heat above ambient temperature. Do not store near flame or ignition source.

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Skin contact No specific health warnings noted.

Eye contact No specific health warnings noted.

Health Warnings No specific health warnings noted.

SECTION 12: ECOLOGICAL INFORMATION

Eco toxicity: Not regarded as dangerous for the environment

Not regarded to be toxic to fish

Degradability The product is not biodegradable

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with Local, State, and Federal Regulations

Dispose of at authorized landfill

SECTION 14: TRANSPORT INFORMATION

No transport warning sign required

SECTION 15: REGULATORY INFORMATION

Not Relevant

SECTION 16: OTHER INFORMATION

CALIFORNIA PROPOSITION 65:

SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT: TITLE 22 CALIFORNIA CODE OF REGULATIONS: California Proposition 65 provides for labeling and disclosure of the presence of a chemical(s) known to the State of California to cause cancer or reproductive toxicity. This product does contain carbon black that is bound in the rubber, therefore if used as designed it is not found to be listed as an airborne, unbound particle.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any Specific product features and shall not establish a legally valid contractual relationship.

American Recycling Center urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith



and believed to be accurate as of the effective date of the SDS. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all applicable federal, state, provincial and local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of American Recycling Center, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, American Recycling Center, Inc. is not and cannot be responsible for (M)SDSs obtained from any source other than American Recycling Center, Inc. If you have obtained an American Recycling Center, Inc (M)(M)SDS from a non American Recycling Center, Inc. source or if you are not sure that the (M)(M)SDS is current, please contact American Recycling Center, Inc. for the most current version.

Department issuing M(M)SDS: EH&S Delivery
Contact: Customer Service 989-725-5100

Premium Rubber Granules 10/26/2017

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. We warrant that our products will meet our written specifications. Nothing herein shall constitute and other warranty express or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.



American Recycling Center, Inc
655 Wabassee Drive, Owosso, MI 48867
(989) 725-5100 www.americanrecycling.com

TPV Colored Granule

1. Identification of the Substance

Product Name: TPV - Thermoplastic Vulcanized Rubber

Supplier Identification: American Recycling Center, Inc.
655 Wabassee Drive
Owosso, MI 48867
(989) 725-5100

2. Hazards Identification

Not regarded as a health or environmental hazard under current legislation.

ENVIRONMENT

The product is not expected to be hazardous to the environment.

HUMAN HEALTH

No specific hazards.

3. Composition/ Information of Ingredients

COMPOSITION COMMENTS

Does not contain any harmful or hazardous ingredients.

4. First-Aid Measures

GENERAL INFORMATION

No recommendation given.

NOTES TO THE PHYSICIAN

Treat symptomatically.

INHALATION

Not relevant

INGESTION

Not relevant.

SKIN CONTACT



American Recycling Center, Inc

655 Wabassee Drive, Owosso, MI 48867
(989) 725-5100 www.americanrecycling.com

Continued on Next Page...

Not relevant.

EYE CONTACT

Dust in the eyes: Do not rub eye.

5. Fire Fighting Measures

EXTINGUISHING MEDIA

Larger fires: Alcohol resistant foam, water spray, fog or mist. Small fires: water spray, dry powder or carbon dioxide, dry chemicals, sand, dolomite, etc.

SPECIFIC HAZARDS

Not classified as flammable but will burn. Carbon Monoxide may be evolved if incomplete combustion occurs.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures

PERSONAL PRECAUTIONS

For personal protection, see Section 8.

ENVIRONMENTAL PRECAUTIONS

Not regarded as dangerous to the environment

SPILL CLEAN UP METHODS

Not relevant.

7. Handling and Storage

USAGE PRECAUTIONS

No specific usage precautions noted.

USAGE DESCRIPTION

No special requirements.

STORAGE PRECAUTIONS

Store in closed original container in a dry place.

8. Exposure Controls/ Personal Protection

PROTECTIVE EQUIPMENT

Gloves

ENGINEERING MEASURES

Continued on Next Page...

Not relevant.

RESPIRATORY EQUIPMENT

Not relevant.

HAND PROTECTION

For prolonged or repeated skin contact use suitable protective gloves.

EYE PROTECTION

Eye protection may be necessary depending on use.

OTHER PROTECTION

Not relevant.

9. Physical and Chemical Properties

APPEARANCE	Granular
COLOR	Various colors
ODOR	Odorless
SOLUBILITY	Insoluble in water
RELATIVE DENSITY	0.20
VISCOSITY	Solid 25
PARTICLE SIZE (Micron)	500-5000
FLASH POINT (°C)	>200 Unknown.

10. Stability and Reactivity

STABILITY

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

None known.

HAZARDOUS POLYMERIZATION

Not relevant.

MATERIALS TO AVOID

No incompatible groups noted.

11. Toxicological Information

SKIN CONTACT

No specific health warnings noted.

EYE CONTACT

No specific health warnings noted.

Continued on Next Page...

HEALTH WARNINGS

No specific health warnings noted.

12. Ecological Information

ECOTOXICITY

Not regarded as dangerous for the environment.

MOBILITY

Not relevant, due to the form of the product.

BIOACCUMULATION

The product is not bioaccumulating.

DEGRADABILITY

The product is not readily biodegradable.

ACUTE FISH TOXICITY

Not considered toxic to fish.

13. Disposal Considerations

DISPOSAL METHODS

Incinerate in suitable combustion chamber, or dispose of on site landfill area.

14. Transport Information

GENERAL	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID). No transport warning sign required.
ROAD TRANSPORT NOTES	Not classified
RAIL TRANSPORT NOTES	Not classified
SEA TRANSPORT NOTES	Not classified
AIR TRANSPORT NOTES	Not classified

15. Regulatory Information

RISK PHRASES	NC	Not Classified
SAFETY PHRASES	NC	Not Classified

16. Other Information

Revision Date: 6/23/10

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. We warrant that our products will meet our written specifications. Nothing herein shall constitute and other warranty express or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.



American Recycling Center, Inc

655 Wabasse Drive, Owosso, MI 48867
(989) 725-5100 www.americanrecycling.com

ASTM 1292 FALL HEIGHT REQUIREMENTS

Poured In Place Surfacing - TPV Wear Course



To verify product certification, visit www.ipema.org

Critical Play Height of Equipment

Total System Depth

Up to 4' CFH

1.75"

Up to 5' CFH

2.25"

Up to 6' CFH

2.75"

Up to 7' CFH

3.25"

Up to 9' CFH

4.25"

Up to 10' CFH

4.75"

Sub-base: Compacted Stone, Asphalt, or Concrete

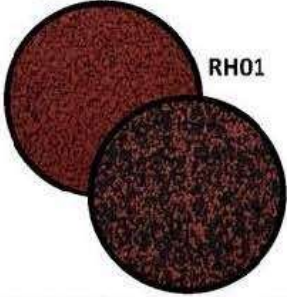
rev 10-11-19



PIP TPV RUBBER SURFACING Color Palette

CUSTOM PARK SURFACING

RED (S)



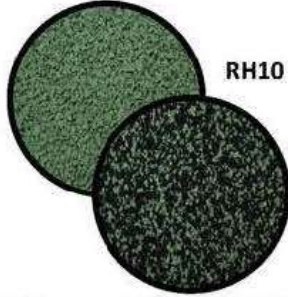
RH01

BEIGE (S)



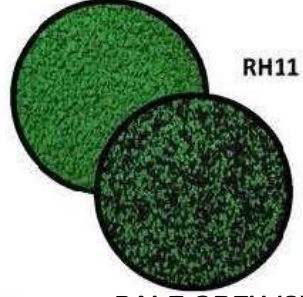
RH30

GREEN (S)



RH10

BRIGHT GREEN (S)



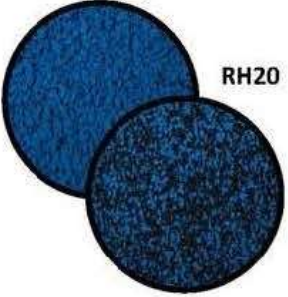
RH11

DARK GREEN (S)



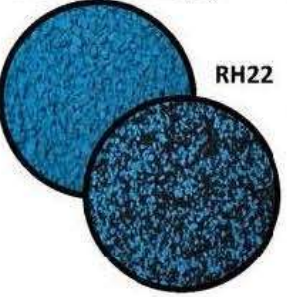
RH12

BLUE (S)



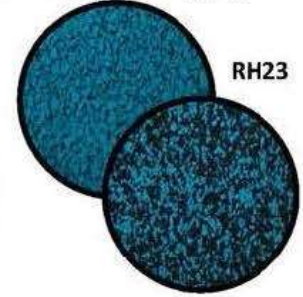
RH20

LIGHT BLUE (S)



RH22

TEAL (AZURE) (S)



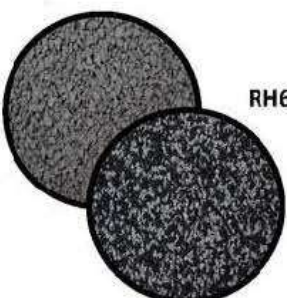
RH23

PALE GREY (S)



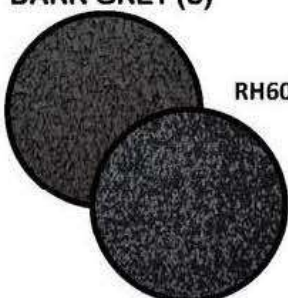
RH65

LIGHT GREY (S)



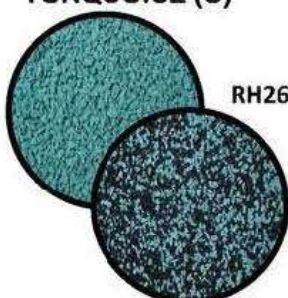
RH61

DARK GREY (S)



RH60

TURQUOISE (C)



RH26

EGGSHELL (C)



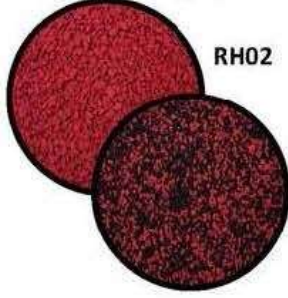
RH31

PURPLE (C)



RH21

BRIGHT RED (C)



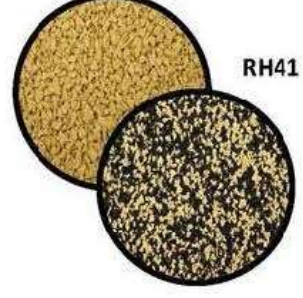
RH02

ORANGE (C)



RH50

YELLOW (C)



RH41

EARTH YELLOW (C)



RH40

BROWN (C)



RH32

(S) Standard Color - (C) Custom Color

PLAYGROUND MATERIALS FIVE YEAR WARRANTY

Contractor: _____

Project: _____

Purchase Order Number: _____

Scope of Warranty

Custom Park Surfacing, LLC (CPS) expressly warrants, subject to the terms and conditions contained below, to the Contractor set forth above that the materials supplied per the Purchase Order identified above shall remain free from defects for a period of five (5) years from the date of this Warranty (the "Warranty Period"). This Warranty shall provide for 100% of the cost for materials needed due to the failure of the materials provided by CPS for the Project. This Warranty includes only CPS' obligation to replace any defective materials in the Project that have failed during the Warranty Period. All costs of labor for any repairs shall be borne by the Contractor named above pursuant to a separate warranty for the performance of the Contractor's work. This Warranty does not lessen or eliminate any contractual obligation of Contractor to CPS.

CPS expressly warrants that if the surface is used as a playground, the materials, if properly installed, shall remain at or below 1000 HIC and 200 GMAX as tested in accordance with ASTM F1292 for a period of five (5) years from the date of this Warranty. Any repairs/replacements which are necessary because of the failure of the materials to maintain a temperature no higher than 1000 HIC and 200 GMAX shall be covered for a period of five (5) years from the date of this Warranty.

Owner's Compliance with Maintenance Manual

The Warranty stated above is subject to and conditioned upon compliance with CPS maintenance procedures provided to the Contractor and set forth in the Purchase Order (or a separate maintenance manual provided to the owner of the Project upon completion of the Project).

Exclusions from Warranty

The Warranty stated above shall specifically exclude damage due to:

- Improper or faulty subsurface preparation;
- Improper installation by the Contractor;
- Shrinkage (which is an inherent characteristic of elastic rubber);
- Normal wear and tear;
- Slight color variations;
- Improper snow removal;
- Neglect, abuse, deliberate act, accident, or vandalism;
- Act of God or other casualty;
- Vehicular traffic;
- Improper dry-cleaning fluids; or
- Improper cleaning methods and/or cleaning methods not sanctioned by CPS

Contractor agrees that it will not, under any circumstances, make alterations to the materials without the written authorization of CPS. Any unauthorized alteration by the Contractor shall result in the immediate termination of all warranties herein and shall also give rise to the duty of the Contractor to hold harmless, defend and indemnify CPS from any claim, suit or cause of action, personal injury, death, or property damage arising out of or related to said alteration.

Warranty Claims Procedure

All warranty claims must be made in writing and sent with photographs to CPS at the address listed below, within thirty (30) days after the owner of the Project has or should have knowledge of the alleged defect. Within a reasonable time of receipt of notice, CPS shall have the opportunity to inspect the site and investigate the affected area, including the right to take any photographs and/or tests of the area. Any repair or replacement work performed by a party other than Contractor shall invalidate this Warranty and terminate any further obligation of CPS.

CPS shall not be responsible for warranty claims for any notices received by CPS more than thirty (30) days after the owner’s first knowledge of the failure or if such notice comes after expiration of the Warranty Period.

Limitations and Exclusions of Warranty/Remedy

If an area of the surface is determined to be covered by this Warranty by CPS, CPS’ obligations under this Warranty shall be to provide the materials for repair or replacement. The remedy set forth herein shall be the Contractor’s sole and exclusive remedy. In no event shall CPS be liable for damages resulting from personal injury, for loss of use, loss of profits, consequential, incidental or punitive damages.

Any dispute as to whether and to what extent there is a valid warranty claim within the meaning of this warranty which is not mutually resolved within 30 days following the initial claim shall be resolved in arbitration. Such arbitration proceedings shall be submitted in accordance with the rules of the American Arbitration Association and shall be held and conducted in and Anne Arundel County, Maryland. A single arbitrator shall be appointed by the American Arbitration Association following filing of a claim and such Arbitrator shall make a determination in accordance with the rules and regulations of said American Arbitration Association and applicable law. The decision of said arbitrator shall be in writing, state the reasons for the award, and be final and binding on the parties. Judgment upon the award may be entered by any court having jurisdiction thereof or having jurisdiction over the relevant party or its assets.

This Warranty shall be of no force and effect if CPS is not paid in full for all materials in accordance with the terms set forth in the Purchase Order. CPS’ obligations under this Warranty are expressly contingent upon CPS being paid in full. If materials are required which would otherwise be covered under the Warranty but for non-payment, CPS and the Contractor may mutually agree that CPS shall provide such materials on a pre-pay basis, but CPS shall be under no legal obligation to provide such materials.

NO OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE ARE MADE AND ALL OTHER WARRANTIES EXCEPT AS EXPRESSLY STATED HEREIN ARE DISCLAIMED.

This limited warranty is expressly made in lieu of any other warranties and is exclusive to the Contractor. This Warranty is issued by Custom Park Surfacing, LLC in the State of Maryland and shall be governed by and interpreted in accordance with the laws of the State of Maryland.

Entire Agreement –

This Warranty supersedes any Warranty executed previously. Contractor and CPS acknowledge that this Warranty constitutes the entire agreement between the parties with respect to the subject matter herein, and that no other agreements exist, whether oral or written, express or implied, relating to the subject matter herein. This Warranty may only be amended by a written agreement signed by an officer of CPS. Contractor agrees that it will not rely on any written or oral representation made by CPS or any of CPS’ agents, employees or representatives that is contrary to or different from the representations set forth in this Warranty.

DATE: _____

SIGNATURE: _____
On behalf of Custom Park Surfacing, LLC.

ADDRESS FOR WARRANTY CLAIMS

**CUSTOM PARK SURFACING, LLC
7520 OLD COALING RD
HARMANS, MD 21077**

SAFETY DATA SHEET

03/29/2021

PremARC® 80-100 Urethane Binder (Aromatic)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name: PremARC® 80-100 Urethane Binder
Material Type: Isocyanate

Details of the supplier of the safety data sheet

Supplier: American Recycling Center, Inc.
655 Wabassee Drive
Owosso, MI 48867

Emergency telephone number

24-Hour Emergency Phone number – 800-424-9300
Customer Information Center: 989-725-5100

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Skin Irrit. 2 Causes skin irritation.
Resp. Sens. 1 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1 May cause an allergic skin reaction.
Carc. 2 Suspected of causing cancer.
STOT SE 3 May cause respiratory irritation.
STOT RE 2 May cause damage to organs through prolonged or repeated exposure.

GHS label elements

Hazard pictograms



Signal word : Danger

Hazard statements

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351.1 Suspected of causing cancer.
H373.2 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements Prevention

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash ... Thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a POISON CENTER/doctor/... if you feel unwell.
P314 Get medical advice/attention if you feel unwell.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P363 Wash contaminated clothing before reuse.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501.A Dispose of contents/container in accordance with applicable regulations.

Ingredient(s) with unknown acute toxicity:

None

Hazards not otherwise classified identified during the classification process:

None

OSHA/HCS status:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture

N/A

Mixtures:

Ingredient name	%	CAS number
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;	10 - 15	CAS:101-68-8, 101-68-8 EC:202-966-0 Index:615-005-00-9
PROPYLENE CARBONATE	1 - 5	CAS:108-32-7

SECTION 4: FIRST AID MEASURES

Description of necessary first aid measures

Description of first aid measures

In case of skin contact:

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

In case of eye contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

In case of Ingestion:

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

In case of Inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Most important symptoms/effects, acute and delayed

Eye irritation
 Eye damages
 Skin Irritation
 Erythema

Indication of any immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media
 Use an extinguishing agent suitable for the surrounding fire.

Suitable extinguishing media:

Water.
 Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

Hazardous combustion products:

- carbon dioxide
- carbon monoxide
- nitrogen oxides
- hydrogen cyanide
- isocyanate vapor

Explosive properties: N.A.

Oxidizing properties: N.A.

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Fire-fighters should wear positive pressure self-contained breathing apparatus and personal protective equipment, such as jacket (standard: EN469), helmet (standard: EN443), gloves (standard: EN407), boots (standard: EN345-S3 HI WRU HRO).

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Wear breathing apparatus if exposed to vapors/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

Methods and material for containment and cleaning up

Suitable material for taking up: absorb with inert, absorbent material.

In case of heavy spills: wash with plenty of water.

SECTION 7: HANDLING AND STORAGE

Store in accordance with local regulations.

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapors and mists.

Exercise the greatest care when handling or opening the container.

Do not use on extensive surface areas in premises where there are occupants.

Use localized ventilation system.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink or smoke while working.

See also section 8 for recommended protective equipment.

Conditions for safe storage, including any incompatibilities

Storage temperature: N.A.

Always keep in a well ventilated place.

Incompatible materials:

See Section 10.

Instructions as regards storage premises:

Cool, dry and adequately ventilated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Component	OEL	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;	ACGIH		.005		
	OSHA	.200	.020		
	NIOSH	.020	.020	.005	.005

Appropriate engineering controls:

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits. Handle in accordance with good industrial hygiene and safety practice.

Individual protection measures

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber (EN374).

Respiratory protection:

Use adequate protective respiratory equipment (EN529).

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Information on basic physical and chemical properties

Physical State:	Liquid
Appearance and color:	Viscous amber
Odor: like:	Isocyanate
Odor threshold:	N.A.
pH:	N.A.
Melting point / freezing point:	N.A.
Initial boiling point and boiling range:	N.A.
Flash point:	150.0 °C (302.0 °F)
Evaporation rate:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density (air = 1):	N.A.
Vapour pressure:	N.A.
Density:	1.09 REL
Solubility in water:	Reacts
Solubility in oil:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
Viscosity:	3,500.00 cPs
Explosive properties:	N.A.
Oxidizing properties:	N.A.
Solid/gas flammability:	N.A.

Other information

Substance Groups relevant properties	N.A.
Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	N.A.

SECTION 10: STABILITY AND REACTIVITY

Reactivity Stable under normal conditions.

Chemical stability

Data not Available.

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid

Stable under normal conditions.

Incompatible materials

Alcohols; Oxidizers; Water

Hazardous decomposition products

In case of fire, toxic gases (such as carbon dioxide, carbon monoxide, nitrogen oxides) may be formed. Hydrogen cyanide (HCN)

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Toxicological Information of the Mixture:

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological information on main components of the mixture:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4, 4'-diisocyanate;	a)Acute toxicity	LD50 Oral Rat 9200 mg/kg
PROPYLENE CARBONATE	a)skin corrosion/ irritation b)serious eye damage/irritation c)acute toxicity	Skin Irritant Rabbit No Eye Irritant Rabbit Yes LD50 Oral Rat > 5000.00000g/kg LD50 Skin Rabbit > 2000.00000 mg/kg

If not differently specified, the information required in the regulation and listed below must be considered as N.A.

- a) acute toxicity
- b) skin corrosion/irritation
- c) serious eye damage/irritation
- d) respiratory or skin sensitization
- e) germ cell mutagenicity
- f) carcinogenicity
- g) reproductive toxicity
- h) STOT-single exposure
- i) STOT-repeated exposure
- j) aspiration hazard

Substance(s) listed on the IARC Monographs:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;	Group 3
--	---------

Substance(s) listed as OSHA Carcinogen(s): 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;

Substance(s) listed as NIOSH Carcinogen(s): None

Substance(s) listed on the NTP report on Carcinogens:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

List of components with eco-toxicological properties

Component Ident.	Numb.	Ecotox Infos
PROPYLENE CARBONATE	CAS: 108-32-7	b) Aquatic chronic toxicity : LC50 Fish Cyprinus carpio (Carp) > 1000.00000 mg/L 96h a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna (Water flea) > 1000.00000 mg/L 48h a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus (green algae) > 900.00000 mg/L 72h c) Bacteria toxicity : EC10 Pseudomonas putida 7400.00000 mg/L - 16 hr

Persistence and degradability

Component Persistence/Degradability: Value

PROPYLENE CARBONATE Readily biodegradable 90.000

Bioaccumulative potential N/A

Mobility in soil N/A

Other adverse effects N/A

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Recover, if possible. Send to authorized disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

Disposal methods



The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

UN number

ADR-UN number: N/A
 DOT-UN Number: N/A
 IATA-Un number: N/A
 IMDG-Un number: N/A

UN proper shipping name

ADR-Shipping Name: N/A
 DOT Proper Shipping Name: N/A
 IATA-Technical name: N/A
 IMDG-Technical name: N/A

Transport hazard class(es)

ADR-Class: N/A
 DOT Hazard Class: N/A
 IATA-Class: N/A
 IMDG-Class: N/A

Packing group

ADR-Packing Group: N/A
 DOT-Packing group: N/A
 IATA-Packing group: N/A
 IMDG-Packing group: N/A

Environmental hazards

Marine pollutant: No
 Environmental Pollutant: N.A.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N.A.

Special precautions

Department of Transportation (DOT):

DOT-Special Provision(s): N/A
 DOT Label(s): N/A
 DOT Symbol: N/A
 DOT Cargo Aircraft: N/A
 DOT Passenger Aircraft: N/A
 DOT Bulk: N/A
 DOT Non-Bulk: N/A

Road and Rail (ADR-RID):

ADR-Label: N/A
 ADR - Hazard identification number: N/A
 ADR-Transport category (Tunnel restriction code): N/A

Air (IATA):

IATA-Passenger Aircraft: N/A
 IATA-Cargo Aircraft: N/A
 IATA-Label: N/A
 IATA-Subrisk: N/A
 IATA-Erg: N/A
 IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage Code: N/A
 IMDG-Stowage Note: N/A
 IMDG-Subrisk: N/A
 IMDG-Special Provisions: N/A
 IMDG-Page: N/A
 IMDG-Label: N/A
 IMDG-EMS: N/A
 IMDG-MFAG: N/A

SECTION 15: REGULATORY INFORMATION

USA - Federal regulations

TSCA - Toxic Substances Control Act

TSCA inventory:

All the components are listed or exempted on the TSCA inventory

TSCA listed substances:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; is listed in TSCA Section 8b
 PROPYLENE CARBONATE is listed in TSCA Section 8b

SARA - Superfund Amendments and Reauthorization Act

Section 302 - Extremely Hazardous Substances: no substances listed

Section 304 - Hazardous substances: no substances listed

Section 313 - Toxic chemical list: 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA: no substances listed

CAA - Clean Air Act

CAA listed substances: no substances listed

CWA - Clean Water Act

CWA listed substances: no substances listed

USA - State specific regulations

California Proposition 65

Substance(s) listed under California Proposition 65: no substances listed

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;
 PROPYLENE CARBONATE

New Jersey Right to know

Substance(s) listed under New Jersey Right to know:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate;
 PROPYLENE CARBONATE

SECTION 16: OTHER INFORMATION

Hazardous Material Information System (U.S.A.)



NFPA

HEALTH	2	1
FLAMMABILITY	1	
PHYSICAL HAZARD	1	
PERSONAL PROTECTION	G	

HMIS Health: 2 = MODERATE

HMIS Flammability: 1 = Combustible if heated

HMIS Reactivity: 1 = SLIGHT

HMIS P.P.E.: G - Safety glasses, gloves, vapor respirators

NFPA Health: 2 = MODERATE

NFPA Flammability: 1 = Combustible if heated

NFPA Reactivity: 0 = MINIMAL

NFPA Special Risk: NONE

Legend to abbreviations and acronyms used in the safety data sheet:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
- RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
- IMDG: International Maritime Code for Dangerous Goods.
- IATA: International Air Transport Association.
- IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
- ICAO: International Civil Aviation Organization.
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
- CLP: Classification, Labeling, Packaging.



EINECS: European Inventory of Existing Commercial Chemical Substances.
 INCI: International Nomenclature of Cosmetic Ingredients.
 CAS: Chemical Abstracts Service (division of the American Chemical Society).
 GefStoffVO: Ordinance on Hazardous Substances, Germany.
 LC50: Lethal concentration, for 50 percent of test population.
 LD50: Lethal dose, for 50 percent of test population.
 DNEL: Derived No Effect Level.
 PNEC: Predicted No Effect Concentration.
 TLV: Threshold Limiting Value.
 TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
 STEL: Short Term Exposure limit.
 STOT: Specific Target Organ Toxicity.
 WGK: German Water Hazard Class.
 KSt: Explosion coefficient.
 y for the damage.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

American Recycling Center urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date of the SDS. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all applicable federal, state, provincial and local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of American Recycling Center, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Due to the proliferation of sources for information such as manufacturer-specific SDSs, American Recycling Center, Inc. is not and cannot be responsible for SDSs obtained from any source other than American Recycling Center, Inc. If you have obtained an American Recycling Center, Inc SDS from a non American Recycling Center, Inc. source or if you are not sure that the SDS is current, please contact American Recycling Center, Inc. for the most current version.

Department issuing SDS: EH&S Delivery
Contact: Customer Service: 989-725-5100

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. We warrant that our products will meet our written specifications. Nothing herein shall constitute and other warranty express or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.



American Recycling Center, Inc
655 Wabassee Drive, Owosso, MI 48867
(989) 725-5100 www.americanrecycling.com

TECHNICAL DATA SHEET

PremARC® 80-100 Urethane Binder

Description

PremARC® 80-100 is a single component prepolymer designed to be used as a moisture cure material for binding rubber crumb. It is specifically designed for application on playgrounds and other sport surfacing using appropriate recycled rubber, EPDM and TPV granules in 80-100°F (27-38°C) weather conditions.

Application

Cure Profile

PremARC® 80-100 is a moisture curing prepolymer designed as a binder for rubber granules. The best application temperature is from 80°F (27°C) to 100°F (38°C). Typically there is enough moisture in the rubber crumb to ensure complete cure. Do not apply over damp surfaces or when rain is imminent. Surface and ambient temperatures must be at least 45°F (7°C). The ratio of granules to binder depends on the end use requirements and the crumb mesh size. Sufficient testing should be done prior to production to determine the granule to binder ratio. Substrates must be clean and free from dust, oil, and grease.

UV Stability

As with any urethane based on aromatic isocyanates, this product is not UV stable and may show discoloration after exposure to direct sunlight. This effect is magnified when using urethanes of vibrant color's or when used in tandem with rubber granules of lighter or more vibrant shades. Mechanical properties are not impacted. (laboratory and field testing are strongly recommended)

STORAGE

Binder must be protected against humidity and stored above 50 °F(10°C). The ideal storage temperature is in the range of 59-77 °F(15-25°C). Higher storage temperatures over a longer period of time can shorten the shelf life. At ideal storage conditions, the material can be stored for six months in the original unopened packaging. Opened drums or totes should be used quickly.

Precaution

Prior to application, the user *must* read and become familiar with the risks and hazards associated with the use of this product. Adherence to and observation of proper safety techniques cannot be overemphasized. For any information, please consult your American Recycling Center, Inc. sales representative

please read the SDS carefully before use.

Typical Properties

% NCO	10.3 – 10.7
Brookfield Viscosity @ 25o C, cps	2,500 – 4,500
Appearance	amber liquid

Handling

Wear proper protective equipment at all times. Avoid contact with skin and eyes. In the event of eye contact, flush eyes thoroughly with water and seek medical attention. Consult SDS before handling and observe all recommended safety and handling practices. Pressure can build up in new and previously opened containers, open all containers carefully. Protect open containers from moisture. Dispose of contaminated materials and empty containers in accordance with Federal, State, and Local regulations.

Customer Notice

ARC encourages its customers to review their application of ARC products from the standpoint of human health and environmental quality. To help ensure that ARC products are not used in ways for which they were not intended or tested.

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TECHNICAL DATA SHEET
TPV Colored Granules

GENERAL

Rosehill TPV is a colored granulate designed and manufactured by Rosehill Polymers Ltd and is the alternative to the granules presently available for the use in impact absorbing rubberized sports surfaces. It is produced here at our factory using state of the art technology, under strict in-house quality controls. The material is produced using a high quality virgin polymer. The product has been formulated without the incorporation of sulphur, clay fillers, heavy metals such as Zinc and Phthalate plasticizers. Contrary to popular belief, being a vulcanised thermoplastic material does not mean that ROSEHILL TPV will leach out harmful sulphurs or peroxides into the environment. Unlike TPE's the vulcanisation process ensures that the granule will continue to perform in all weather extremes. It is ideal for use all over the world irrespective of weather conditions and temperatures. It has been formulated to give optimum performance at a realistic price. ROSEHILL TPV offers excellent thermal stability and does not leach out carbon black or colored pigments like many of its rivals on the market. The product is UV stable and weather resistant. It will not brittle with age.

ROSEHILL TPV offers better color consistency from bag to bag. ROSEHILL TPV will not self-ignite nor is it flammable. ROSEHILL TPV offers you the next generation of consistent colored granulate for a resilient, hardwearing indoor or outdoor safety surface. ROSEHILL TPV is highly durable and is seen as a major breakthrough for the use in children's safety surfacing, multigame areas (MUGA'S), general sports surfacing, swimming pool surrounds, running tracks and rubber play tile production. It offers excellent compatibility with polyurethane binders and adhesives. It also compliments our Flexi SC structural spray topping. ROSEHILL TPV is also used as an Artificial Grass infill. Please contact our sales department with any questions.

Health and Safety

No risk towards human health and/or environment because of carefully selected ingredients. Absence of toxic or carcinogenic ingredients. It is also recommended that you refer to the information offered in the material safety data sheet (MSDS) for this product.

Typical Properties

TPV	
Appearance	Angular granules
S.G.	1.55 kg/dm ³
Tolerance	± 0.05
BASE POLYMER CONTENT	>20%
Hardness Shore A	65°A
Tolerance	± 5
Tensile Strength	>3.0 mpa
Elongation @ break	>400%
Particle size	1-4mm for sports & play surfaces Other grades available, please refer to relevant data sheet 0.5 - 2.5mm for grass infill 0.5mm -1.5mm for sports & Spray applications
Colors currently available	Over 24 colors available – refer to sample pack All colors offer greater UV stability than current competitor materials.

SIEVE ANALYSIS

> 4.00mm	0 – 5%
3.35 – 4.00mm	5 – 20%
2.36 – 3.35mm	40 – 60%
1.70 – 2.36mm	15 – 35%
1.00 – 1.70mm	5 – 20%
< 1.00mm	0 – 1%

Handling

Wear proper protective equipment at all times. Avoid contact with skin and eyes. In the event of eye contact, flush eyes thoroughly with water and seek medical attention. Consult SDS before handling and observe all recommended safety and handling practices. Pressure can build up in new and previously opened containers, open all containers carefully. Protect open containers from moisture. Dispose of contaminated materials and empty containers in accordance with Federal, State, and Local regulations.

Customer Notice

ARC encourages its customers to review their application of ARC products from the standpoint of human health and environmental quality. To help ensure that ARC products are not used in ways for which they were not intended or tested, ARC personnel will assist customers in dealing with ecological and products safety. Your ARC sales representative can arrange the proper contacts.

10/27/17

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Client: Recreation Surface Technologies, Inc.
Client Location: Davie, FL
Phone Number: (808) 313-2656

Report Date: 6/22/2022
Job Number: 72181032

Test Requested: Water Permeability

Test Sequence: Testing was performed on June 22, 2022.

Sample Description: One (1) 22in. wide, by 22in. long, by 1.75in. thick sample, identified by Recreation Surface Technologies, Inc., as Ultra Max PIP, was provided for testing.

Test Procedure: A cylinder, 3.25in. tall and 3.25in. I.D., with a known volume was placed on the Ultra Max PIP – 1.75in. test sample and adhered with silicone sealant. The volume of a cylinder is determined by multiplying pi (Π), times the radius (half of the diameter) of the cylinder squared, times the height of the cylinder ($V = \Pi * r^2 * h$). The volume of the cylinder was determined to be 26.9612in.³ ($V = \Pi * 1.625in.^2 * 3.25in.$), or approximately 14.939 fluid ounces (US). One (1) cubic inch (in.³) is equal to approximately 0.554 fluid ounces (oz.).

Approximately 14.939oz. of water was poured into the cylinder. Time was recorded from the start of the water emptying the cylinder, until the cylinder was empty.

The flow rate of the water was determined by ounces per second, then ounces per minute, then gallons per minute. One (1) gallon (US) is approximately 128 fluid ounces.

Results: The time for the water to exit the cylinder was 6.74 seconds. The flow rate is approximately 1.04 gallons per minute (gpm). No pass/fail criteria were provided and shall be determined by client.



Cylinder adhered to surfacing



Water seeping through sample material

Test performed by: Timothy Foubie Date: 6/22/2022

TECHNICAL DATA SHEET

Premium Rubber Granules

Description

Ambient ground black rubber, cut and classified to within each specific size parameter, reclaimed from new, pre consumer post-industrial scrap rubber, *NOT* from discarded tires. Our premium granule has a greater longevity in UV conditions due to its superior quality of polymer content.

Applications

Used in playground wearing course, Shock pads / E-layers, infill for turf, and synthetic running track applications. This material can be spreader-applied or paved with the appropriate equipment in conjunction with an approved binder.

Features

Free of metal, stone, fiber and other contaminants
Less than 2% dust content
Sieve analysis standards available upon request

Typical Physical Properties

<u>Test</u>	<u>Result</u>
Specific Gravity	1.10 – 1.20
Hardness (Shore A):	60 – 90
Tensile Strength:	3000 psi
Rubber Hydrocarbon:	35% minimum

**Results may vary slightly, relative to the average scrap rubber raw material used.

Storage and Handling

Keep material dry at all times and out of direct UV contact while in the plastic packaging. *Read the Premium Rubber Granule "Safety Data Sheet" before handling, or using this product.*

Packaging Form

Available in 2000 pound Tote Sacks or palletized in 55 pound (3 mil "Clear" plastic bags)

Customer Notice

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10/26/2017

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CUSTOM PARK
SURFACING

Justin Armstrong

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(410) 760-8200



KBI Flexi-Pave Submittals





KBI Flexi-Pave Submittals

Table of Contents

1. KBI Flexi-Pave HD2000 Specification
 2. KBI Flexi-Pave HD2000 Side Detail
 3. KBI Flexi-Pave Installation Instructions
 4. KBI Flexi-Pave Maintenance Document
 5. KBI Flexi-Pave HD2000 Testing Summaries
- Appendix 1 – KBI Flexi-Pave Application Guide
- Appendix 4 – Color Chart



flexipave HD2000 SPECIFICATIONS

Section _____ Flexible Porous Paving

1. GENERAL

- 1.1. The Flexible Porous Paving shall be KBI Flexi-Pave HD2000 made from recycled passenger tires, crushed stone and a urethane binding agent as manufactured by K.B. Industries, Inc. (KBI), 4600 140th Ave. N, Suite 200, Clearwater, FL 33762. Tel 727 723 3300.
- 1.2. All components, materials and compounds shall be 100% sourced and manufactured in the USA.
- 1.3. The Flexible Porous Paving shall be supplied by a manufacturer with at least 10 years experience that can supply references for similar applications and installations in the USA.

2. SUBMITTALS

- 2.1. The Flexible Porous Paving manufacturer shall submit;
 - 2.1.1. Certificates stating that materials meet or exceed the specified contract requirements.
 - 2.1.2. Site handling and storage instructions.
 - 2.1.3. Mixing and installation instructions.
 - 2.1.4. A sample that reflects the characteristics of the material to be installed. The sample, upon approval, shall be maintained as the standard of minimum quality for all the proposed surfacing and paving work required for the project.

3. CONTRACTOR

- 3.1. The Contractor's craftsmen or crew chief, installing the Flexible Porous Paving shall attend a training webinar and an on-site installation training session prior to installing KBI Flexi-Pave HD2000.
- 3.2. Contractors bidding on the installation of KBI Flexi-Pave HD2000 may start the training process by contacting KBI and attending a training webinar prior to contract award. On-site installation training may occur after the contract is awarded.
- 3.3. The Contractor shall;
 - 3.3.1. Furnish all labor, materials, tools, equipment, and incidentals required to install KBI Flexi-Pave HD2000.
 - 3.3.2. Provide an adequate number of skilled workers who are trained and experienced with installing KBI Flexi-Pave HD2000 and are familiar with the specified contract requirements and the methods needed for its installation.
 - 3.3.3. Install the crushed stone sub-base as described in the specifications and shown on the contract drawing unless the sub-base is installed/provided.
 - 3.3.4. Install the KBI Flexi-Pave HD2000 to depth and width as described in the specifications and shown in the contract drawings.
 - 3.3.5. Reduce the risk of damage to the Flexible Porous Paving surface by not allowing track vehicles (metal or rubber), forklifts (warehouse-variable reach), main lifts (booms or scissors), and/or dumpsters or roll-off containers on the KBI Flexi-Pave HD 2000 either during or following installation. Any explicit or implied warranty is voided through failure to comply with this section.

4. PRODUCTS

- 4.1. Recommended sub-base shall be either; crushed stone or for KBI Flexi-Pave HD2000 Titan Series use UltraBaseSystems Pro interlocking panels. KBI will provide advice on appropriate sub base for each installation and the materials based on the application and project location.
- 4.2. Crushed Stone;
 - 4.2.1. For load bearing applications KBI Flexi-Pave HD2000 shall be installed over a minimum of 4" (100mm) of compacted crushed concrete or crushed stone aggregate to a density of 95% minimum.
 - 4.2.2. The sizing of the stone and base soil will directly represent the desired "Curve Number" (percolation rate) required.

- 4.3. UltraBaseSystems Pro interlocking panels shall;
- 4.3.1. Measure 28" x 28" by 1¼" deep manufactured from recycled post industrial polymeric materials.
 - 4.3.2. Have a vertical drainage rating of 341" per hour and a horizontal flow rate of 96.4" per hour and each panel shall store up to 3.58 gallons of water.
 - 4.3.3. Have a static load capacity of 1664 psi.
 - 4.3.4. Be suitable for installation over properly prepared earth sub base without the need for compacted rock, concrete or asphalt.
- 4.4. KBI Flexi-Pave HD2000.
- 4.4.1. The KBI Flexi-Pave HD2000 shall be installed in accordance with the manufacturers written instructions to an average depth of 1.5 inches over the prepared sub-base.
 - 4.4.2. The KBI Flexi-Pave HD2000 shall be Natural colors; Black / Cypress / Redwood / Bark Brown / Green / Granite or ZX vibrant colors Brick Red / Concrete / Emerald / Mahogany / Olive Brown / Pitch Black / Sand Stone / Sky Blue / Slate in color.
 - 4.4.3. The KBI Flexi-Pave HD2000 shall be mixed with a urethane binding agent based on MDI Polyether Polyols and shall be free of extender oils to prevent leaching over time. Binders that use extender oils will not be acceptable.
 - 4.4.4. The KBI Flexi-Pave HD2000 shall be cured and fit for use within 24 hours of installation.
 - 4.4.5. The KBI Flexi-Pave HD2000 shall have a composition of 50% stone aggregate and 50% chipped rubber tires by weight for trails, carts paths, sidewalks and tree surrounds. For vehicular applications, such as driveways and parking lots, the composition shall be 50% stone aggregate and 50% chipped rubber tires by volume.
5. QUALITY ASSURANCE
- 5.1. The Contractor is responsible for supplying and installing a warranted material that meets, or exceeds, the manufacturer's specifications and testing:
- 5.1.1. ASTM C 666/C/666M- Freeze-Thaw testing with no cracks or breaks through 300 cycles of testing.
 - 5.1.2. Designated as "Highly Permeable" under FL DOT FM 5-565 permeability testing.
 - 5.1.3. Independent testing showing a perk rate of 2400 gph (40 gpm) per sq. ft. or higher.
 - 5.1.4. Scuff/Power Steering Resistance in accordance with ISSA TB 100 / ISSA TB 139.
 - 5.1.5. Accelerated Weathering using ASTM 4798.
 - 5.1.6. Hamburg Loaded Wheel Testing TX DOT 242-F, must be equivalent or better than 2.3 rut depth at 8,000 cycles and full recovery within 24 hours.
 - 5.1.7. Static Creep Testing TX DOT 231-F, shall be equivalent to or better than total strain +2.703% and permanent strain equal to 0.514%.
 - 5.1.8. Resilient Modulus Testing in accordance with ASTM D 4123 shall be equivalent or better than 68,495 pounds.
 - 5.1.9. Slip resistant and ADA compliant, in accordance with ASTM D 2047 testing.
 - 5.1.10. Heat resilient to 400 degrees in accordance with ASTM D 4123 testing.
 - 5.1.11. Sound absorbent, in accordance with ASTN C423-09a / E795-05 testing.
 - 5.1.12. Compression tested and be able to withstand 250 psi without permanent deformation or damage.
 - 5.1.13. Has a leachate less than 6 parts per billion and containing no organic compounds or heavy metals.
 - 5.1.14. The material shall be resistant to the following elements: transmission, hydraulic, and brake fluids, gasoline, diesel, saltwater, oil, chlorine, ozone, bromine, and muriatic acid.
6. PROJECT CONDITIONS
- 6.1. The Contractor shall provide appropriate and adequate protection to adjacent areas including but not limited to:
- 6.1.1. Protection of adjacent work space from splashing of Flexible Porous Paving materials.
 - 6.1.2. Remove all stains from exposed surfaces of paving, structures, and grounds.
 - 6.1.3. Remove all waste and spillage.
 - 6.1.4. Provide suitable protection to assure no damage or disturbance to existing improvements or vegetation before starting work and maintain protection throughout the course of the

work.

6.1.5. Restore and repair areas, at no additional cost to the owner, that have been damaged as a result of construction work, including existing paving on or adjacent to the site, to their original condition or repair as directed to the satisfaction of the Owner's Representative.

7. WEATHER

- 7.1. KBI Flexi-Pave HD2000 urethane binder is engineered based on the geographical location of the project and climate expectations during installation. KBI will provide the appropriate binder for each installation and the materials delivered will be based on project location and seasonality.
- 7.2. KBI Flexi-Pave HD2000 shall not be installed when the ambient air temperature in the shade near the installation site is above 95° F or below 32° F. Temperatures below 50° F can extend the curing time and would fall outside of normal "use ready in 24 hours" guidelines.
- 7.3. The urethane binder shall be stored on site at between 40°- 77° F and used within 12 months of delivery.
- 7.4. The Contractor shall not pave on days when rain or snow is forecast, unless a change in the weather results in favorable paving conditions as determined by the Owner's Representative.
- 7.5. In the event of rain on days prior to installation, the sub base must be dry and not contain any standing or moving water.

8. SAFETY AND TRAFFIC CONTROL

- 8.1. When construction work will interfere with existing, traffic and sidewalks the Contractor shall notify and cooperate with local authorities, and other jurisdictional organizations, and provide temporary barriers, signs, warning lights, flaggers, and other protections as required by the authorities to assure the safety of pedestrians and vehicles around the construction area and to organize the smooth flow of traffic.

9. MAINTENANCE

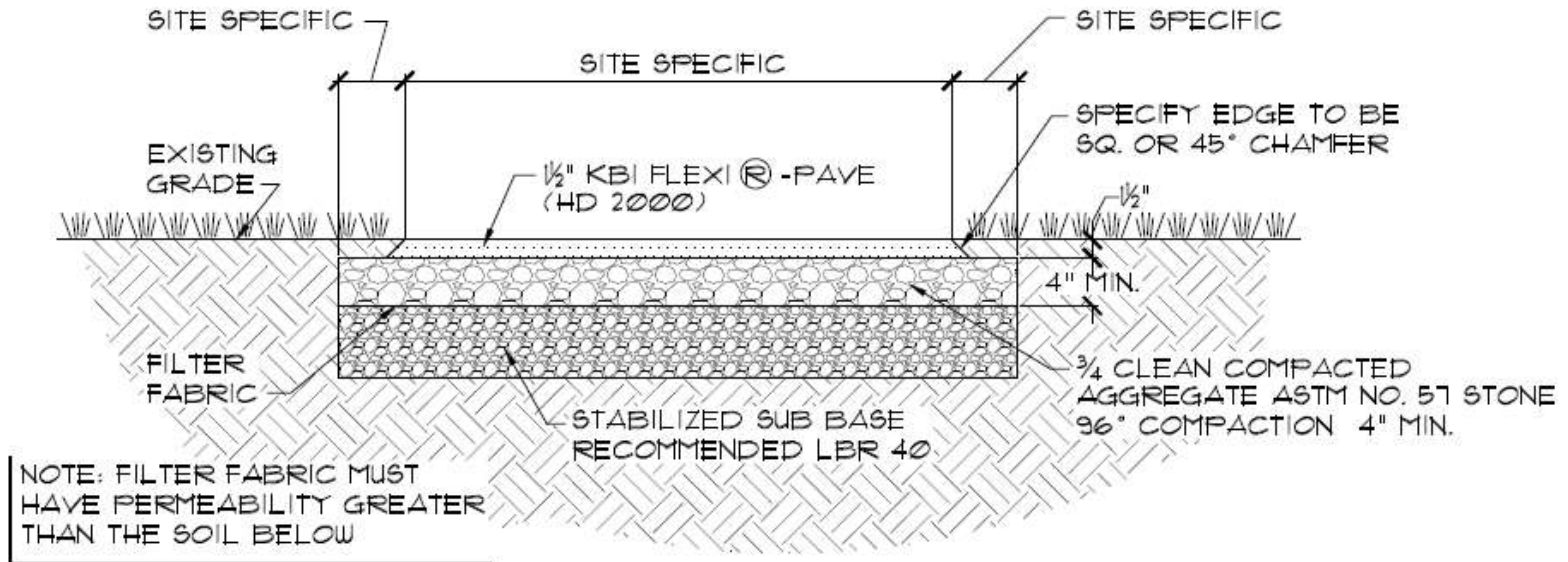
- 9.1. KBI Flexi-Pave HD 2000 installations are designed to operate and function trouble free with only minimal routine maintenance over the lifetime of the product.
- 9.2. The frequency and scope of the routine maintenance required will largely be dependent on the application and project location. The key objective will be to keep the surface clean and clear of debris to maintain the hydraulic conveyance capacity of KBI Flexi- Pave over time as well as maintaining the aesthetic appeal of the surface.
- 9.3. Prior to undertaking routine maintenance of KBI Flexi- Pave it is recommended that an annual inspection be completed to evaluate the condition of the surface. The following are suggested annual maintenance inspection points:
 - 9.3.1. Inspect the surface of the KBI Flexi- Pave for evidence of sediment deposition, organic debris, staining or ponding. If any signs of clogging are noted, schedule a vacuum sweeper (no brooms or water spray) to remove deposited material. Cleaned sections may then be tested by pouring water from a five-gallon bucket to ensure full hydraulic conveyance capacity has been restored.
 - 9.3.2. Inspect the structural integrity of the KBI Flexi- Pave surface, looking for signs of damage or surface deterioration, such as raveling, slumping, cracking, etc. Replace or repair affected areas, as necessary.
 - 9.3.3. Check for potential need to overspray/roll with urethane binder after 4-6 years.
- 9.4. If in doubt or should any unexpected situations or observations occur during the maintenance inspection, please contact KBI for consultation and advice.

10. WARRANTY

- 10.1. The KBI Flexi- Pave HD2000 shall have a material warranty of 1 year from the date of installation (extended warranties are available with the addition of a maintenance program)
- 10.2. The Manufacturers' warranty shall be issued on completion of the installation and final inspection.
- 10.3. The Manufactures' warranty is based on the installation completed by an on-site installation trained and qualified team of tradesmen. Faulty workmanship by tradesmen will be cause to void the warranty.

KBI FLEXI® PAVE

SCALE-3/4"=1'-0"



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DRAWN BY-TJG

DATE
 10/22/14

SCALE
 3/4"=1'-0"



“Smarter Materials For Next Generation Infrastructure™”

KBI Flexi®-Pave - Maintenance

KBI Flexi®-Pave installations are designed to operate and function trouble free with only minimal routine maintenance over the lifetime of the product.

The frequency and scope of the routine maintenance required will largely be dependent on the application and project location. The key objective will be to keep the surface clean and clear of debris to maintain the hydraulic conveyance capacity of KBI Flexi®-Pave over time as well as maintaining the aesthetic appeal of the surface.

One preventative maintenance task for parking lots, trails and walkways might involve vacuum sweeping on a frequency consistent with the use and solids loadings encountered. For example, for applications in northern states where large quantities of sediment may accumulate following winter sanding operations, vacuum sweeping in spring may be appropriate. If a vacuum sweeper is used, rotating brooms or water spray should be disabled, since spraying may lead to subsurface clogging and mechanical brushing may cause surface abrasion.

For applications in southern states a leaf blower or light sweeping in the fall or spring months might be important to remove trash and leaf debris.

Prior to undertaking routing maintenance of KBI Flexi®-Pave it is recommended that an annual inspection be completed to evaluate the condition of the surface. The following are suggested annual maintenance inspection points:

- Inspect the surface of the KBI Flexi®-Pave for evidence of sediment deposition, organic debris, staining or ponding. If any signs of clogging are noted, schedule a vacuum sweeper (no brooms or water spray) to remove deposited material. Cleaned sections may then be tested by pouring water from a five-gallon bucket to ensure full hydraulic conveyance capacity has been restored.
- Inspect the structural integrity of the KBI Flexi®-Pave surface, looking for signs of surface deterioration, such as raveling, slumping, cracking, etc. Replace or repair affected areas, as necessary.
- Check inlets, pretreatment cells and any flow diversion structures for sediment buildup and structural damage. Note if any sediment needs to be removed.
- Inspect any contributing drainage area for any controllable sources of trash debris, sediments and pollutants.
- Check for potential need to over pour/roll with binder after 4-6 years.

If in doubt or should any unexpected situations or observations occur during the maintenance inspection, please contact KBI for consultation and advice.

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Smarter Materials for Next Generation Infrastructure™

Table of Contents

- Leachate
- Flexibility
- Hamburg Loaded Wheel Test
- Initial Scuff/Power Steering Resistance
- Resilient Modulus
- Slip Resistance
- Static Creep
- Permeability
- Freeze/Thaw
- Water Quality
- Shock Absorption
- Surface Burning
- Infiltration
- Sound Absorption
- Electrical Resistance



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Testing Summary “Leachate”

Technical Description:

- ASTM E1252.

General Summary:

- Testing of leachate off of KBI Flexi®-Pave

Test Criteria:

- A sample of KBI Flexi®-Pave material was tested to determine total solids and analysis of the solids for chemical identification.

Result:

- KBI Flexi®-Pave leachate contains no organic compounds or heavy metals but does have elemental constituents all with concentrations less than 2.52 ppb. These values are far below primary and secondary drinking water standards, thus demonstrating KBI Flexi®-Pave’s leachate does not pose a threat to environmental quality of the watershed above the intake (or the aquifer around the well) and thus the drinking water resources.

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Testing Summary “Freeze/Thaw”

Technical Description:

- ASTM C 666/C/666M-03 Freeze/Thaw Testing.

General Summary:

- Testing of materials durability and resistance to Freeze/Thaw cycles.

Test Criteria:

- Material will be tested in multiple Freeze/Thaw cycles. Goal of test is to have no cracks, breaks or deterioration through 200 cycles of Freeze/Thaw.

Result:

- KBI Flexi®-Pave exceeded goal and showed no cracks, breaks or deterioration through 300 cycles of Freeze/Thaw.



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Testing Summary “Electrical Resistant”

Technical Description:

- ASTM G57-06.

General Summary:

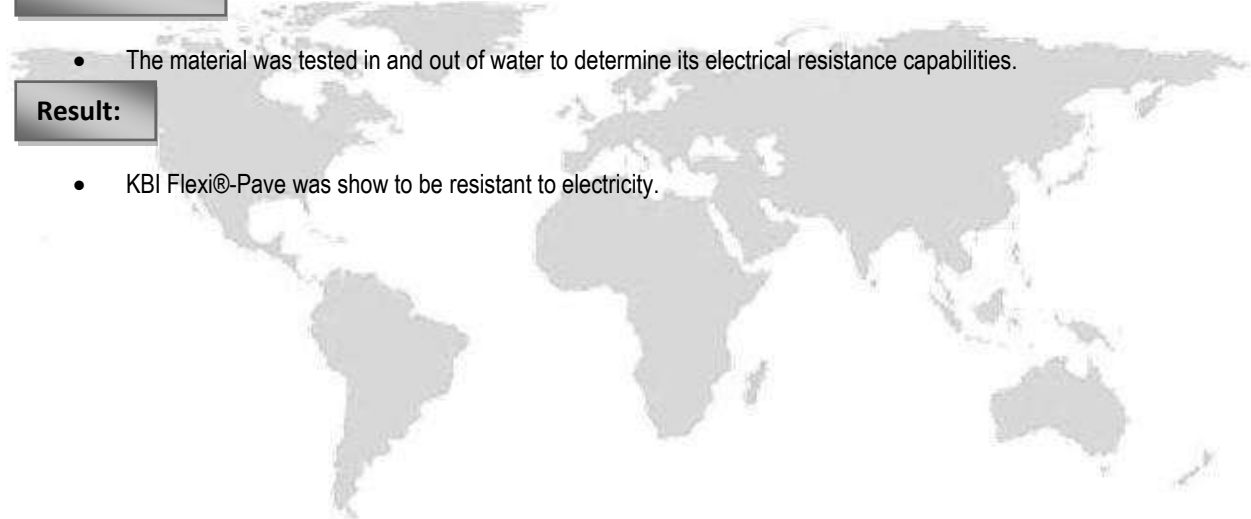
- Determining the electrical resistivity of the material.

Test Criteria:

- The material was tested in and out of water to determine its electrical resistance capabilities.

Result:

- KBI Flexi®-Pave was show to be resistant to electricity.



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Testing Summary “Infiltration”

Technical Description:

- ERIK Infiltration Testing.

General Summary:

- Determining the void capacity and silt load recoverability of the material

Test Criteria:

- Measuring the rate of water “upstream” of the sample install. Determining the recoverability after the embedment of soil.

Result:

- KBI Flexi®-Pave showed a superior void capacity. The material also showed extremely high recoverability after vacuuming.

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Testing Summary “Permeability”

Technical Description:

- FL DOT FM 5-565 Permeability Testing.

General Summary:

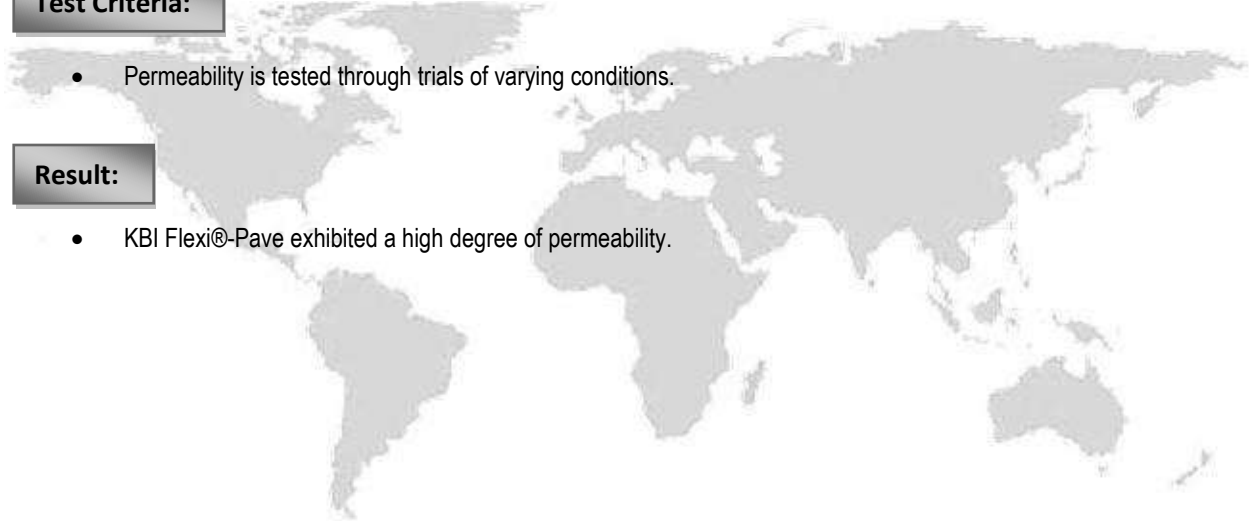
- Testing of permeability of specimen.

Test Criteria:

- Permeability is tested through trials of varying conditions.

Result:

- KBI Flexi®-Pave exhibited a high degree of permeability.



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Testing Summary “Shock Absorption” (P2000 Product Only)

Technical Description:

- Evaluated for Impact Attenuation in accordance with the procedures outlined in ASTM F1292-09 “Standard Specification or Impact Attenuation of surfacing materials within the zone of playground equipment” at ambient temperature conditions only.

General Summary:

- Testing of material to determine the chance of injury from falling off of playground equipment onto the material.

Test Criteria:

- Material must meet certain criteria for each fall height. That criteria is the “G” Max (G-max is the measure of the maximum acceleration (shock) produced by an impact) and the “HIC” (The Head Injury Criterion or HIC score is an empirical measure of impact severity based on published research describing the relationship between the magnitude and duration of impact accelerations and the risk of head trauma)

Result:

- KBI Flexi®-Pave exceeded the goal to meet 8’ fall requirement.

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Testing Summary “Sound Absorption”

Technical Description:

- ASTM C423-09a and E795-05.

General Summary:

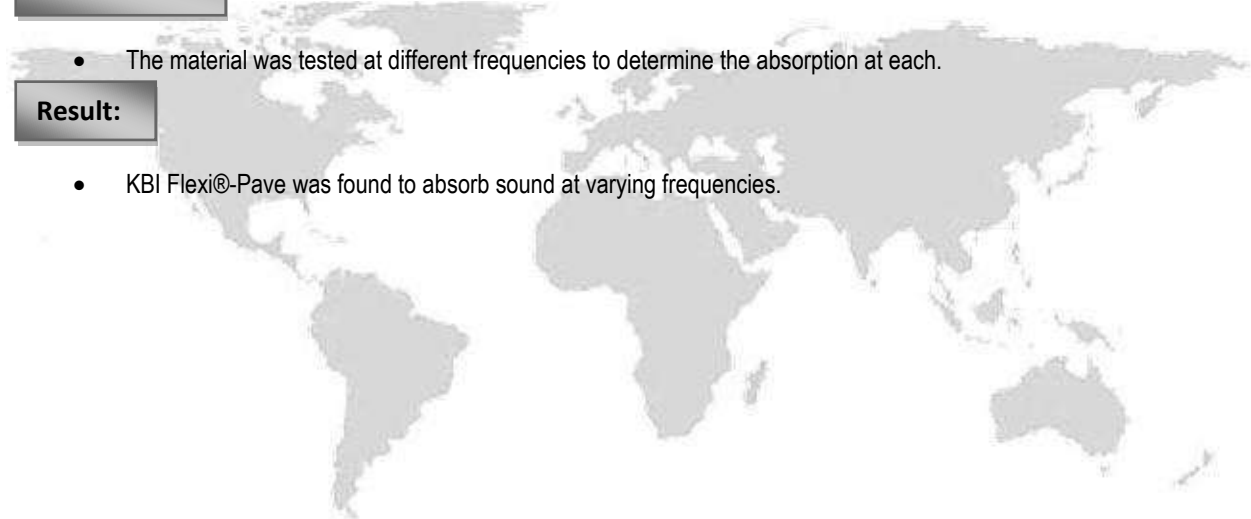
- Determining the materials sound absorption capabilities.

Test Criteria:

- The material was tested at different frequencies to determine the absorption at each.

Result:

- KBI Flexi®-Pave was found to absorb sound at varying frequencies.



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Testing Summary “Surface Burning”

Technical Description:

- ASTM E84-11a.

General Summary:

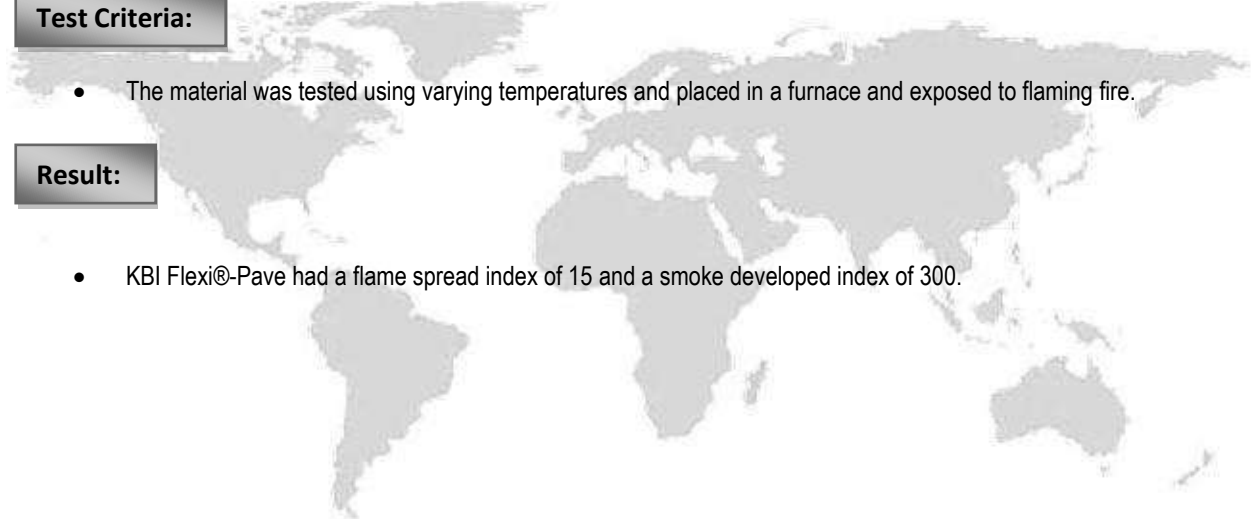
- A method for determining the comparative surface burning behavior of burning materials. The purpose of the method is to determine the relative burning behavior of the material by observing flame spread along the specimen.

Test Criteria:

- The material was tested using varying temperatures and placed in a furnace and exposed to flaming fire.

Result:

- KBI Flexi®-Pave had a flame spread index of 15 and a smoke developed index of 300.



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■ Testing Summary “Flexibility”

Technical Description:

- PRI – TM 025.

General Summary:

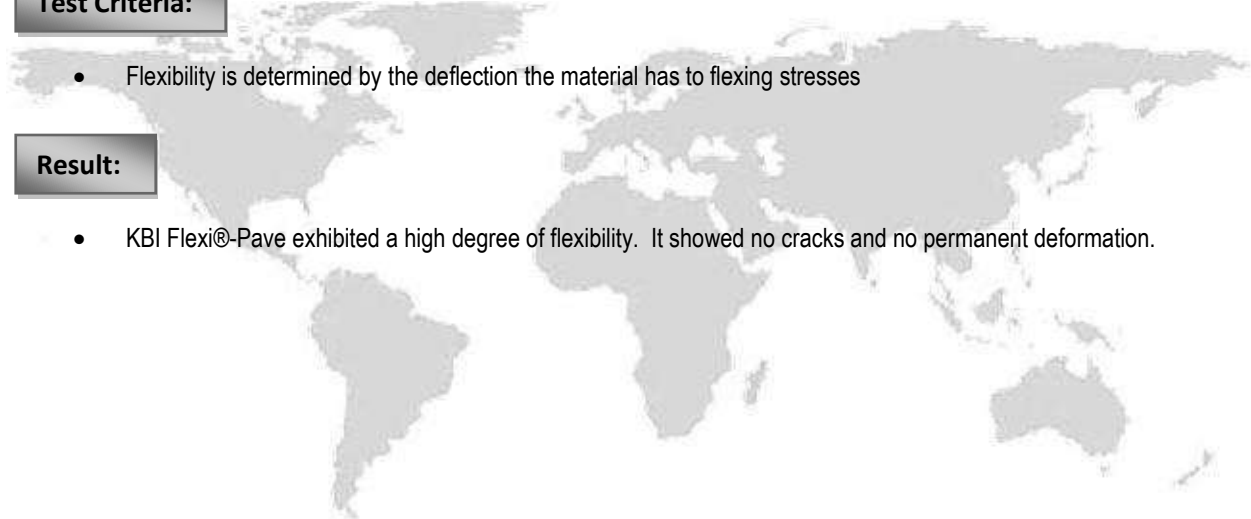
- Testing of the flexibility of the specimen.

Test Criteria:

- Flexibility is determined by the deflection the material has to flexing stresses

Result:

- KBI Flexi®-Pave exhibited a high degree of flexibility. It showed no cracks and no permanent deformation.



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Testing Summary “Hamburg Loaded Wheel Test”

Technical Description:

- TX DOT 242-F.

General Summary:

- This test method determines the premature failure susceptibility of bituminous mixtures due to weakness in the aggregate structure, inadequate binder stiffness, or moisture damage and other factors including inadequate adhesion between the asphalt binder and aggregate. This test method measures the rut depth and number of passes to failure

Test Criteria:

- A loaded steel wheel tracks over the samples in water, the deformation is observed vs. the number of loading passes.

Result:

- KBI Flexi®-Pave performed excellent, recovering fully after 24 hours. (Note: conventional asphalt pavement typically does not exhibit this ability to deflect to this degree without cracking or separation.)

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Testing Summary “Initial Scuff/Power Steering Resistance”

Technical Description:

- ISSA TB 100, Wet Track Abrasion / ISSA T B 139, Cohesion Measurement.

General Summary:

- Testing of surface toughness and stress resistance.

Test Criteria:

- Material was tested against surface stresses including power steering and other stresses. Material must withstand and show no signs of damage.

Result:

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

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Testing Summary “Resilient Modulus”

Technical Description:

- ASTM D 4123.

General Summary:

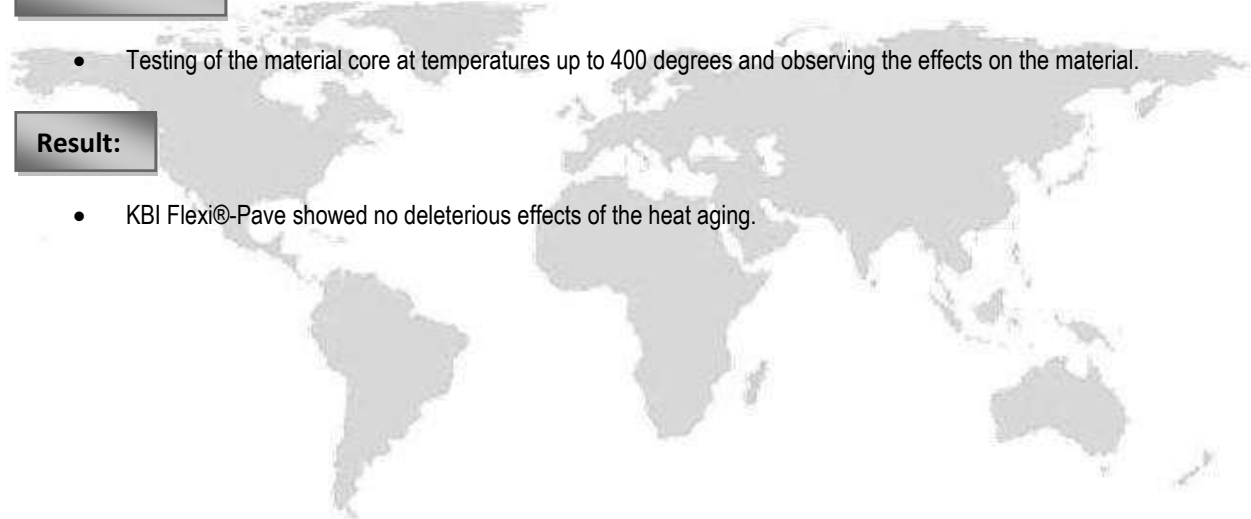
- Determining the impact of Heat Aging on the resilient modulus of a materials core.

Test Criteria:

- Testing of the material core at temperatures up to 400 degrees and observing the effects on the material.

Result:

- KBI Flexi®-Pave showed no deleterious effects of the heat aging.



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Testing Summary “Slip Resistance”

Technical Description:

- ASTM D 2047.

General Summary:

- Determining the materials classification as a slip resistant walking surface.

Test Criteria:

- Testing the coefficient of friction to the surface with human locomotion.

Result:

- KBI Flexi®-Pave was determined to be a non-slip hazard surface.



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Testing Summary “Static Creep”

Technical Description:

- TX DOT 231-F.

General Summary:

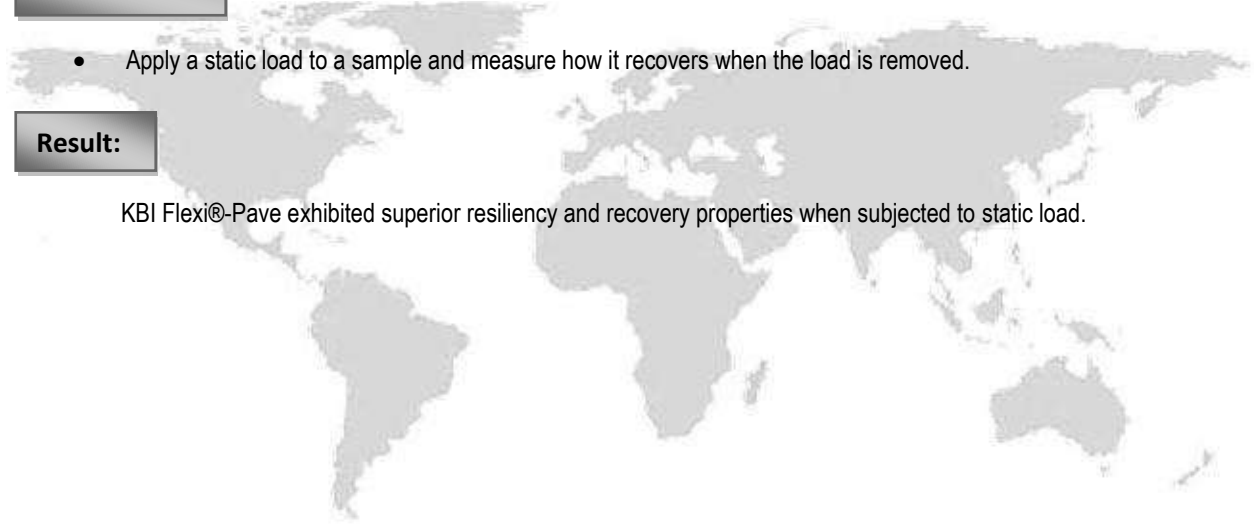
- Determining the resiliency and recovery properties of the material by placing and removing loads.

Test Criteria:

- Apply a static load to a sample and measure how it recovers when the load is removed.

Result:

KBI Flexi®-Pave exhibited superior resiliency and recovery properties when subjected to static load.



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Testing Summary “Water Quality”

Technical Description:

- EPA 353.2 / EPA 365.4.

General Summary:

- Determining the materials effect on water quality, specifically in the reduction in nitrate and phosphorous concentrations.

Test Criteria:

- The material was tested using an enclosed capture well system that isolated the spiked water samples from intrusion by other water sources, this isolated the FP system, thus maximizing it's as the major contributor/causal factor to the test results.

Result:

- Testing indicated that KBI Flexi®-Pave is effective in reducing nitrate and phosphorus loads to groundwater.

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Application Guide

Reduces Long-Term Maintenance and Liability Costs

Porous, Flexible and Non-Cracking

Tested and Proven with World Class Clients

LEED Certified and ADA Compliant



**Scott's Corner Sidewalk
Westchester County, Pound Ridge, NY**

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KBI Flexi®-Pave is an effective porous paving alternative to traditional concrete or asphalt, providing a superior solution to other porous alternatives. KBI Flexi®-Pave uses three parts; wire-free recycled tire granules, rock aggregate and KBI's proprietary binding agent. It is a LEED Certified, ADA Compliant construction material with multiple uses that solves a variety of common infrastructure problems.

- **Porosity Rate** - Percolating at 2,400 gallons per square foot per hour, KBI Flexi®-Pave eliminates standing water, pollution from urbanization in runoff, and provides positive groundwater recharge, thus allowing for increasing buildable space or decreasing retention.
- **Nutrient Reduction** - KBI Flexi®-Pave has been independently tested and proven to remove pollution from stormwater runoff that perks through it. Reducing upwards to 83% reduction in nitrates and 88% reduction in ortho-phosphates, KBI Flexi®-Pave is the ONLY porous paving solution proven to do so, thus allowing for increasing buildable space or decreasing retention.
- **Erosion Control** - KBI Flexi®-Pave's significant porosity quality allows it to act as a pressure relief valve from hydrostatic pressure. During a high water or flood event, KBI Flexi®-Pave "flexes" with the pressure and provides a monolithic expansion joint.
- **Virtually Maintenance Free** – Because KBI Flexi®-Pave is made from recycled tires, has a 20%+ void capacity and is flexible, yet load bearing and capable of supporting vehicular traffic; it is self-cleaning and virtually maintenance free.
- **Sustainable and Accessible** - KBI Flexi®-Pave is a completely sustainable LEED qualified construction material, meeting 6 out of 7 LEED categories and providing up to 11+ Points. KBI Flexi®-Pave also meets and exceeds ADA Compliance with a 0.65 Coefficient of Friction rating.
- **%100 Made in the U.S.A.** – All materials are sourced and manufactured in the U.S.A.



All Materials are sourced
and Manufactured in the U.S.A.



**Arlington
National Cemetery**

PROVEN

KBI Flexi®-Pave is the only approved sidewalk system in Arlington National Cemetery, an honor we are proud of. After two years of a rigorous review process by the National Parks Service and Department of Defense, KBI Flexi®-Pave was selected and installed as the first sidewalk/trail system at Arlington. We are also installed at the Smithsonian Institution, NASA, numerous universities; city, county, state and federal agencies as well.

TESTED

More than a \$1,000,000 has gone into internal and independent testing over the past decade, so KBI Flexi®-Pave is tested and proven with thousands of installations around the world. Test reports are available upon request.



- Permeability – PRI Asphalt Tech. & Stormwater Academy
- Performance – PRI Asphalt Tech.
- Silt Load & Structural Capacity – UCF Stormwater Academy
- Flexibility & Scuff Resistance – UCF Stormwater Academy
- Hamburg Loaded Wheel Test – UCF Stormwater Academy
- Slip Resistance – UCF Stormwater Academy
- Sound Absorption – SGS U.S. Testing Co., Inc.
- Heat & Jet Blast Test – PRI Asphalt Tech.
- Freeze/Thaw – CTL Group
- Class “A” ASTM e-84 Burning Characteristics of Building Materials – Intertek Testing Services, NA, Inc.

CURRENT & PAST CLIENTS

The following is a sampling. References provided upon request.



Smithsonian
Institution



US Army Corps
of Engineers®



Firestone



City of White Plains
The Birthplace of the State of New York

**Princeton
University**



Unilever



City of New York
Parks & Recreation

**Duke
UNIVERSITY**



HOLOGIC®
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Sidewalks & Tree Surrounds

KBI Flexi®-Pave is excellent to use for sidewalks, pathways or trails, because it won't crack in high flood events or from tree roots; reduces maintenance costs and reduces liability trip hazard risks.



Trails & Sidewalks

KBI Flexi®-Pave has been used all over the world and is excellent for parks, nature trails, horse trails, bike trails and many other applications. Because KBI Flexi®-Pave is virtually maintenance free, overall long term-maintenance costs are reduced.



Stormwater Erosion & Public Works

Public Works Departments utilize KBI Flexi®-Pave to solve a variety of stormwater erosion and drainage problems. Because of its flexibility and ability to diffuse water force, KBI Flexi®-Pave can be used in numerous applications.



Stormwater Erosion & Public Works

From roadside erosion problems, to drainage problems...KBI Flexi®-Pave is an excellent unsurpassed alternative to traditional concrete or other pervious materials.



Parks & Recreation Applications

KBI Flexi®-Pave is used by many Municipal Parks & Recreation Departments across the country for fitness trails, sports complexes, RV Parks and campgrounds. Due to KBI Flexi®-Pave's high porosity rate, it is an excellent choice for spray parks and aquatic facilities as well.



Other Applications

KBI Flexi®-Pave is used by Firestone Auto Care stores as a part of their sustainability program throughout the United States, because KBI Flexi®-Pave is made from recycled tires. All new facilities utilize KBI Flexi®-Pave as the entrance to the store. Check out other popular markets below:



Residential Applications

KBI Flexi®-Pave sister product, Perma-Drive incorporates a layer of rock, providing for a clean, impressive looking sidewalk, driveway patio area. Combine both products in and around your home for a great looking image.



You're Invited

To receive a brief **15-minute webinar** to learn how to reduce maintenance and other costs associated with stormwater issues, erosion problems, sidewalks, tree surrounds, fitness trails and many other applications by using KBI Flexi-Pave.

See how the City of Key West, FL saved 75% on capital costs and significantly reduced maintenance and liability costs on just one project.



Who Is Invited & Should Attend:

- Parks & Recreation
- Public Works
- Administrators
- Architects & Engineers



KBI Flexi®-Pave Has Been Specified and/or Used By:



**US Army Corps
of Engineers**



Call 1.727.723.3300

Or E-Mail RSVP@KBIUS.COM

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KBI Flexi-Pave Color Options

