PaveSafe Pavers, Paver Tiles and Big E Tiles Technical Manual

Installation – Maintenance – Warranty

Revised on 11Jul2023
Supersedes all previous versions
Check website for updates

Manufactured in the U.S.A.

Installation

PaveSafe Specifications	1
Sub-Base / Surface	2
Job Sit Conditions	2
Subfloor	2
Concrete Base	3
Paved Asphalt Base	4
Compacted Crushed Stone Base	4
Material Storage and Handling	5
Adhered Installations	5
Loose Lay Installation	6
Maintenance	7
Warranty	9

I. PAVESAFE SPECIFICATIONS

Product	Dimensions	Nominal Thickness & Weight	Usage
Interlocking Pavers	7-7/8 x 6-3/8" x 4-1/2"	1" (25mm) – 1.2 lb. /pc. 1-3/4" (44mm) – 2.5 lb. /pc. (3.42 Pavers / sq. ft.)	Fitness areas Parade, Sales & Saddling areas Barn corridors Walkways Service roads Stalls Stall walls Wash bays Breeding sheds
Paver tiles	2' x 2'	1-1/4" (32mm) – 20.0 lb. /pc.	
Wall / Big E-Tile	2' x 2'	1-1/4" (32mm) – 20.0 lb. /pc. 1-3/4" (44mm) – 28.0 lb. /pc.	
Border Edge / Safety Curbing	10" x 39-3/8"	2" (51mm) – 22 lb. /pc.	Border / Curbing
Beveled Edge Reducer/ Anti-Stumble Edges	2-3/8" x 39-3/8" 12" x 39-3/8"	1" (25mm) – 1.7 lb. /pc. 1-3/4" (43mm) – 14.0 lb. /pc.	

II. SUB-BASE / SURFACE

	Interior					Exterior				
Sub-Base / Surface	**Intrlkg[5] Paver 1”**	**Intrlkg[5] Paver 1-3/4”**	**Paver Tile**	**Big-E Tile**	**Border / Beveled Edge Reducer**	**Intrlkg[5] Paver 1”**	**Intrlkg[5] Paver 1-3/4”**	**Paver Tile**	**Big-E Tile**	**Border / Beveled Edge Reducer**
Concrete Slab[1,3]	Full glue	Full glue or loose laid	Full glue or loose laid	Full glue or loose laid	Full glue	Full glue	Full glue	Full glue	Full glue	Full glue
Asphalt[1,3]	N/A	N/A	N/A	N/A	N/A	Full glue	Full glue	Full glue	Full glue	Full glue
Plywood[1,6]	Full glue	Full glue or loose laid	Full glue or loose laid	Full glue or loose laid	Full glue	No	No	No	No	No
Compacted Crushed Stone [2, 4]	N/A	N/A	N/A	N/A	N/A	No	Loose laid	No	No	No

Please note:
1. “Full glue” requires full spread adhesive using E-Grip III with 1/8” square notch trowel. Bond test is recommended; installer responsible to determine suitability.
2. Compacted Crushed Stone base may experience movement and subsidence; sub-base out-of-flatness, movement, subsidence, etc. are warranty exclusions.
3. Note regarding Intrlkg 1-3/4” Pavers only - Full-glue installation on fully cured concrete or asphalt are practical options for load bearing areas with heavy traffic or moving vehicles.
4. Loose laid Intrlkg 1-3/4” Pavers require border / curb.
5. Intrlkg = Interlocking, “dog bone” shaped Pavers
6. Particle board, chip board/OSB, Masonite and lauan are not considered suitable underlayments.

III. JOB SITE CONDITIONS

1. Installation should not begin until after all other trades are finished in the area. If the job requires other trades to work in the area after the installation of the floor, the flooring should be protected.
2. Indoor areas to receive flooring should be weather tight and maintained at a minimum uniform temperature of 65° F (18° C) for 48 hours prior to, during and after installation.
3. Outdoor areas require additional care when installing. Varying temperatures and humidity levels may cause the rubber to expand and contract before the adhesive cures. Temperatures above 70°F and/or relative humidity above 50% will cause the adhesive to set up more quickly. Temperatures below 70°F and/or relative humidity below 50% will cause the adhesive to set up more slowly. The installer should monitor the on-site conditions and adjust the open time accordingly.

IV. SUBFLOOR

PaveSafe may be installed indoors over concrete, Portland based self-leveling materials, and wood and outdoors over concrete, asphalt, and compacted crushed stone per Sub-base / Surface table above.

NOTE: Gypsum based patching and leveling compounds are not acceptable

NOTE: The selected Portland-based patching and self-leveling materials must be moisture resistant and rated to withstand the RH moisture levels on the project.

1. Wood Subfloors: Wood subfloors should be double construction with a minimum thickness of 1". The floor must be rigid, free from movement and have at least 18" of well-ventilated air space below.
2. Underlayments: The preferred underlayment panel is APA underlayment grade plywood, minimum thickness of 1/4", with a fully sanded face.

   Note: Particle board, chip board/OSB, Masonite and lauan are not considered suitable underlayments.

3. Concrete Floors: Concrete shall have a minimum compressive strength of 3000 psi. It must be fully cured and permanently dry. Allow for 1" in 8 LF slope for drainage as applicable.

V. CONCRETE BASE

1. Subfloor shall be dry, clean, smooth, level, and structurally sound. They should be free of dust, solvent, paint, wax, oil, grease, asphalt, sealers, curing and hardening compounds, alkaline salts, old adhesive residue, and other extraneous materials, according to ASTM F710.
2. Subfloor should be smooth to prevent irregularities, roughness, or other defects from telegraphing through the new flooring. The surface should be flat to the equivalent of 3/16" (4.8 mm) in 10 feet (3.0 m).
3. Mechanically remove all traces of old adhesives, paint, or other debris by scraping, sanding, or scarifying the substrate. Do not use solvents. All high spots shall be ground level and low spots filled with a Portland-based patching compound.
4. All saw cuts (control joints), cracks, indentations and other non-moving joints in the concrete must be filled with a Portland based patching compound.
5. Expansion joints in the concrete are designed to allow for expansion and contraction of the concrete. If a floor covering is installed over an expansion joint, it more than likely will fail in that area. Expansion joint covers designed for resilient floor coverings should be used.
6. Always allow patching materials to dry thoroughly and install according to the manufacturer's instructions. Excessive moisture in patching material may cause bonding problems or a bubbling reaction with the adhesive.

HAZARDS:

SILICA WARNING - Concrete, floor patching compounds, toppings and leveling compounds can contain free crystalline silica. Respirable crystalline silica (particles 1-10 micrometers) can be produced by cutting, sawing, grinding, or drilling. Respirable silica is classified by OSHA as an IA carcinogen and is known to cause silicosis and other respiratory diseases. Avoid actions that cause dust to become airborne. Use local or general ventilation, or protective equipment, to reduce exposure below applicable exposure limits.

ASBESTOS WARNING - Resilient flooring, backing, lining felt, paint or asphaltic "cutback" adhesives can contain asbestos fibers. Avoid actions that cause dust to become airborne. Do not sand, dry sweep, dry scrape, drill, saw, beadblast or mechanically chip or pulverize. Regulations may require that the material be tested to determine asbestos content. Consult the documents titled, "Recommended Work Practices for Removal of Existing Resilient Floor Coverings," available from the Resilient Floor Covering Institute.

LEAD WARNING - Certain paints can contain lead. Exposure to excessive amounts of lead dust presents a health hazard. Refer to applicable federal, state, and local laws and the publication, "Lead Based Paint: Guidelines for Hazard Identification and Abatement in Public and Indian Housing," available from the United States Department of Housing and Urban Development.

7. Moisture must be measured using the RH Relative Humidity test method per the ASTM F2170 test standard. Moisture content should not exceed the allowable limit of the selected Ecore adhesive.

   a. E-Grip III – RH limit of 85% – normally selected
   b. E-Grip 95 – RH limit of 95% – higher RH applications
   c. E-Grip 99 – RH limit of 99% – highest RH applications

   If RH levels exceed the selected Ecore adhesive's RH limit, stop and correct situation.

   If outside, simply use E-Grip III

8. When a moisture mitigation system is required, it must conform to the ASTM F3010 Standard Practice for Two-Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings.
9. Perform pH tests on all concrete floors per ASTM F3441 Testing Concrete pH for Resilient Flooring. If greater than the allowable limit of the selected Ecore adhesive, neutralize prior to installation.
10. Adhesive bond tests should be conducted in several locations throughout the area. Glue down 3´ x 3´ test pieces of the flooring with the recommended adhesive and trowel. Allow to set for 72 hours before attempting to remove. A sufficient amount of force should be required to remove the flooring and, when removed, there should be adhesive residue on the subfloor and on the back of the test pieces.

VI. PAVED ASPHALT BASE

1. Coarse aggregate mixtures will provide a stable base. The aggregate size best suited for the adhered system is 3/8" to ½". Do not use asphalt mixtures that contain a high percentage of fines, as they may become soft. Allow for 1" in 8 LF slope for drainage as applicable.

2. The soil subgrade must be compacted with a minimum of two passes of a 10-ton vibratory roller with no soft or moving areas upon completion. The compacted crushed stone base must also be compacted with a minimum of two passes of a 10-ton vibratory roller. The binder and wear courses of the asphalt must both meet 95% of the theoretical maximum density of the JMF (Job Mix Formula).

Analysis of Asphalt Wear Course

Total Passing Sieve	Percent by Weight
½"	100
3/8"	80-100
#4	45-90
#8	30-65
#50	5-25
#200	2-8
Asphalt Cement	6-8

3. New asphalt surfaces should cure for 28 days before adhering PaveSafe.

VII. COMPACTED CRUSHED STONE BASE– *not suitable for 1" thick Interlocking Pavers, Paver Tiles, Big-E Tiles, or Border or Beveled Edging*

1. Excavate approx. 9 inches of soil below the required finished level of the 1-3/4" PaveSafe Interlocking Pavers.

2. Replace the soil with approximately 6 inches of compacted crushed stone and one inch of stone dust. Allow for 1” in 8 LF slope for drainage as applicable. Some bases may require a perforated drainpipe to remove moisture build-up.
3. The stone for the base must be compacted to 95% standard proctor compaction and should be a homogeneous mix suitable for and available in your geographic area. One example mix might be:

Total Passing Sieve	Percent by Weight
3/8”	100
#4	85-100
#100	10-30

NOTE: Compacted Crushed Stone sub-base may experience movement and subsidence. Subbase out-of-flatness, movement, subsidence, etc. are warranty exclusions.

NOTE: Inspect all pavers for visual defects including shade variances prior to beginning installation. No labor claim will be honored on material installed with visual defects or shade variations. Any discrepancies must be reported immediately before beginning the installation.

4. Determine a starting point for the first course of tile to best suit the site area. Because most walls / borders are not straight or corners square, tile installation generally starts in the middle of the area. Measure the width and length of the space, divide the room into 4 equal quadrants and snap chalk lines that are perpendicular (90 degrees) to each other.
5. Adjust the starting point to balance the tiles in the space and not end up with small cuts of tile against the perimeter. Begin installation where the two perpendicular chalk lines meet.

VIII. MATERIAL STORAGE AND HANDLING

1. Material should be delivered to job site in its original unopened packaging with all labels intact.
2. Material should only be stored inside on a clean, dry, smooth surface.
3. Inspect all material for visual defects prior to beginning the installation. No labor claim will be honored on material installed with visual defects. Verify the material delivered is the correct style, color, and amount. Any discrepancies must be reported immediately before beginning installation.
4. For indoor installations, the material and adhesive must be acclimated at room temperature for a minimum of 48 hours before, during and after installation.
5. **Outdoor areas require additional care when installing. Varying temperatures and humidity levels may cause the rubber to expand and contract before the adhesive cures. Temperatures above 70°F and/or relative humidity above 50% will cause the adhesive to set up more quickly. Temperatures below 70°F and/or relative humidity below 50% will cause the adhesive to set up more slowly. The installer should monitor the on-site conditions and adjust the open time accordingly.**

IX. ADHERED INSTALLATION

1. For indoor installations, the material and adhesive must be acclimated at room temperature for a minimum of 48 hours before, during and after installation.
2. **Outdoor areas require additional considerations when installing. Varying temperatures and humidity levels may cause the rubber to expand and contract before the adhesive cures. Temperatures above 70°F and/or relative humidity above 50% will cause the adhesive to set up more quickly. Temperatures below 70°F and/or relative humidity below 50% will cause the adhesive to set up more slowly. The installer should monitor the on-site conditions and adjust the open time accordingly.**

NOTE: Inspect all pavers for visual defects including shade variances prior to beginning installation. No labor claim will be honored on material installed with visual defects or shade variations. It may be necessary to lay out and hand select tiles for color consistency. Any discrepancies must be reported immediately before beginning the installation.

NOTE: Do not allow E-Grip III to cure on your hands or the flooring. Wipe off excess adhesive with a rag dampened with mineral spirits! Cured adhesive is very difficult to remove and we recommend wearing gloves!

3. Sweep area clear of all dust and loose debris.
4. Determine a starting point for the first course of pavers to best suit the site area. Because most walls / borders are not straight or corners square, paver installation generally starts in the middle of the space. Measure the width and length of the space, divide the area into 4 equal quadrants and snap chalk lines that are perpendicular (90 degrees) to each other.
5. The first paver will be placed where the two perpendicular chalk lines meet.
6. Adjust starting point side-to-side to not end up with small cuts of tile against the walls.
7. After the above procedure is performed, begin application of E-Grip III, Ecore's recommended one-component polyurethane adhesive, using a 1/8" square-notch trowel for a yield of approximately 65 square feet per gallon.
8. Do not spread more adhesive than can be covered by pavers and rolled within 30 minutes.
9. Place the first paver into the wet adhesive making sure that its edges are precisely placed to the chalk lines where they intersect.
10. Lay pavers to perimeter, trimming outside pavers to fit against walls, edging / curb as required using a saber / jig saw using a coarse blade (7-9 TPI teeth per inch), or a bandsaw.

    NOTE: Do not allow E-Grip III to cure on your hands or the flooring. Wipe off excess adhesive with a rag dampened with mineral spirits! Cured adhesive is very difficult to remove and we recommend wearing gloves!

X. LOOSE LAY INSTALLATION (1-3/4" Interlocking Pavers only)

1. For indoor installations, the Pavers must be acclimated at room temperature for a minimum of 48 hours before, during and after installation.
2. For outdoor installations, the pavers must be acclimated at a predetermined ambient installation temperature (of between 40 and 100F) for a minimum of 48 hours before starting installation.
3. Sweep area clear of all dust and loose debris.
4. Install perimeter border / curb.
5. Determine a starting point for the first course of pavers to best suit the site area. Because most walls / borders are not straight or corners square, paver installation generally starts in the middle of the space. Measure the width and length of the space, divide the area into 4 equal quadrants and snap chalk lines that are perpendicular (90 degrees) to each other.
6. The first paver will be placed where the two perpendicular chalk lines meet.
7. Adjust starting point side-to-side to not end up with small cuts of tile against the walls, edging / curb.
8. Lay pavers to perimeter, trimming outside pavers to fit against walls, edging / curb as required using a saber / jig saw using a coarse blade (7-9 TPI teeth per inch), or a bandsaw.

Maintenance

It is the Specifier's responsibility to:

- Mandate covering and protection of floor from damage and construction debris until construction is complete.
- Assign to the appropriate party responsibility for the initial cleaning of floor following published procedures.

Ecore recommends our environmentally friendly line of maintenance products, including E-Cleaner.

It is the General Contractor's responsibility to provide:

- A building or installation area that is fully enclosed from the elements, e.g., finished roof, windows, doors, etc.
- Temperature that is climate controlled with a minimum uniform temperature of 65° F for 48 hours prior to, during, and after the flooring installation, for acclimation of flooring materials.
- Protection for those areas of the flooring that are subject to direct sunlight through doors or windows by having the doors or windows covered for such time until the installation of the material is complete.
- Protection for flooring from damage and construction debris by using an appropriate floor covering until such time that the recommended initial cleaning may be performed.

NOTE: Wash PaveSafe products immediately after installation to reduce possibility of a slippery surface.

Indoor Maintenance	**Cleaning Product**	**Mixture**	**Diluted Coverage**	**Equipment**
Initial Cleaning	Ecore's E-Cleaner	10 oz./ gal. water	2,000 sq. ft./gal.	Soft Nylon Brush or 3M 5100 Red Pad or Equal. Vacuum up water.
Daily Cleaning	–	–	–	Blow, vacuum or sweep loose debris.
Periodic Cleaning	Ecore's E-Cleaner	2-4 oz./ gal. water	4,000 – 6,000 sq. ft./gal.	Soft Nylon Brush or 3M 5100 Red Pad or Equal. Vacuum up water.
Heavy Soil and Restorative Cleaning	Ecore's E-Strip	16 oz./ gal. water	1,000 sq. ft./gal.	Soft Nylon Brush or 3M Blue 5300, Brown 7100, or Black 7200 pad as req'd. (Do not use High Productivity Pad). Vacuum up water.

Outdoor Maintenance	Cleaning Product	Mixture	Diluted Coverage	Equipment
Initial Cleaning	Ecore's E-Cleaner	10 oz./gal. water	2,000 sq. ft./gal.	Power wash, or scrub using soft Nylon Brush or 3M 5100 Red Pad on low-speed scrubber. Vacuum up water.
Daily Cleaning	–	–	–	Blow, vacuum or sweep loose debris.
Periodic Cleaning	Ecore's E-Cleaner	2-4 oz./gal. water	4,000 – 6,000 sq. ft./gal.	Hose wash, power wash, or scrub using soft Nylon Brush or 3M 5100 Red Pad on low-speed scrubber.
Heavy Soil and Restorative Cleaning	Ecore's E-Cleaner E-Strip	10 oz./gal. water 16 oz./gal. water	2,000 sq. ft./gal. 1,000 sq. ft./gal.	Power wash, or scrub using 3M Brown 7100 or Black 7200 pad as req'd. on low-speed scrubber. (Do not use High Productivity Pad).

CAUTION: Use all applicable PPE when using power washers. Use power washer at a suitable distance from the surface with the appropriate pressure and correct nozzle / spray pattern. Power washers can cause significant and permanent damage. Hire a professional if unsure regarding power washing safety or use.

Warranty

All Ecore rubber flooring is guaranteed to be free from manufacturing defects on both material and workmanship. If such a defect is discovered, the customer will notify Ecore either through the contracting installer, distributor, or directly. If found to be defective under normal non-abusive conditions, the sole remedy against the seller will be the replacement or repair of the defective goods, or at the seller's option, credit may be issued not exceeding the selling price of defective goods. These warranties only apply to the original purchaser.

Please see the Ecore Warranty Guide for length specifics.

The PaveSafe warranty shall not cover dissatisfaction due to improper installation, sub-base failure, damage from improper maintenance or usage, or general misuse, including and without limitation: burns, cuts, tears, scratches, scuffs, damage from rolling loads, damage from cleaning products not recommended by Ecore, shade variation or shade variations due to exposure to direct sunlight, or differences in color between samples or photographs and actual flooring.

Excluded from Warranty - These warranties do not apply to the following:

1. The exact matching of shade, color, or mottling.
2. Any express or implied promise made by any salesperson or representative.
3. Tears, burns, cuts or damage due to improper installation, improper use or improper cleaning agents or maintenance methods.
4. Wear from chairs or other furniture without proper floor protectors will void the warranty. Care should be taken to protect the flooring from damage by using good quality protective feet for chairs, tables, and other furniture. Chair mats may be required under chairs with casters/wheels.
5. Labor costs for installation of original or replacement material.
6. Sale of "Remnants," "Seconds," "Off Goods" or other irregular (non-first quality) flooring materials. With respect to "Seconds," "Off Goods," or "Remnants" such are sold "as is," and Ecore makes no warranties whatsoever, express or implied with respect thereto, including warranties of merchantability or fitness for a particular purpose.
7. Problems caused by moisture, hydrostatic pressure, or alkali in the sub-floor.
8. Problems caused by uses, maintenance, and installation that are contrary to Ecore specifications, recommendations, or instructions.
9. Material installed with obvious defects.
10. Damage to flooring products from high heels or spike heels.
11. Damage or discoloration to flooring products from rubber mats, rubber backed mats, or car tires.
12. Installation of Ecore products with adhesives other than those recommended by Ecore.
13. Fading and/or discoloration resulting from heavy sunlight penetration and ultraviolet ray exposure from direct or glass-filtered sunlight.
14. Material that is not installed and maintained as recommended by Ecore.
15. Damage to flooring products from pallet jack and tow-motor traffic.
16. Environments where the product will be exposed to animal fats, vegetable oils, grease, or petroleum-based materials. (i.e.: commercial kitchens or auto repair facilities.)
17. Premature wear and deterioration from spikes and skate blade exposure.
18. Differences in color between products and photography.
19. Embossing / density deviations between product and samples, photography.

These warranties are in lieu of any other warranty expressed or implied. Ecore shall not be liable for any incidental or consequential damages which may result from a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. These warranties give you specific rights, and you may also have rights which may vary from state to state. To know what your legal rights are in your state, consult your local or state Consumer Affairs Office or your State Attorney General. For complete and latest warranty information, please visit www.ecoreintl.com

Manufactured in the U.S.A. by:

866-795-2732 – www.ecoreintl.com

715 Fountain Ave – Lancaster, PA 17601