



EVOPAWE RUBBER PAVERS AND VERSATILE RUBBER TILES

LAYOUT, DESIGN, AND INSTALLATION

Pre-Planning

The customer or main contractor should always be made aware of the duration of the installation and limitations involved with rubber surfacing. No other trades are to be allowed in or around the work area 24 hours before installation and 7 full days afterwards.

NOTE: Rubber flooring is a flexible product, with manufacturing tolerances of +/- 2mm. Temperature, load stress and humidity can vary the size of a paver or tile by as much as 0.7% (smaller or larger). Installing without depalletizing and acclimatizing is not recommended.

Materials

Only Innovative Equine Systems specified materials are to be used. All chemicals, whether adhesive or top coatings, should be kept from frost, rain or excessive heat. Exposure of any adhesive or top coatings to these elements voids any warranty.

Sub-Surface Requirements: Solid Underlayment

The Evopawe surfacing will follow the contours of the sub-surface which it covers. The smoother the sub-surface, the better the Evopawe surfacing finish.

For 5/8" and 7/8" paver installation, the sub-surface shall be constructed out of asphalt or concrete in accordance to qualified engineers or General Contractor specifications.

Asphalt shall be left to cure for a minimum of 14 days after completion. The finished sub-surface shall be smooth and trimmed and have no compaction or trowel ridges and shall not vary from the required levels by more than .15 inches measured under a 13 ft. straight edge, measured in any direction. Any resultant ponding of water on the surface after flooding should be corrected until no pond is deeper than .039 inches.

All cracks and holes must be patched, and new asphalt should be cured for at least 14 days before installation. Asphalt must be smooth, dry and cleaned of dust, dirt and oil with a pressure washer before installation.

Concrete shall be left to cure for a minimum of 30 days. The finished sub-surface shall be smooth and trimmed and have no compaction or trowel ridges and shall not vary from the required levels by more than .15 inch measured under a 13 ft. straight edge, measured in any direction. Any resultant ponding of water on the surface after flooding should be corrected until no pond is deeper than .039 inch.

All cracks and holes must be patched in existing concrete. Concrete must be smooth, dry and cleaned of dust, dirt and oil with a pressure washer before installation. If curing agents were used in

the concrete, the surface must be acid etched for maximum adhesion. In all cases, surfaces must be absolutely dry before installation. **Moisture testing should be done if there is any reason to believe the concrete has not been cured, if moisture barriers have not been used or if underground water exists.**

Sub-Surface Requirements: Loose Laid

Only 1-5/8" and 1-3/4" thick pavers can be installed loose laid - or what is called dry set on compacted soil or crushed rock.

Our EPX-40 and EPX-45 pavers have dimpled bottoms for a solid set. If flat back bottoms are required or need adhesion to underlayment, those are available as special order only.

A crushed rock base should be compacted road type base 4-8" deep (depending on soil conditions) leading to an underground drain.

Drainage must be adequate to prevent heaving of surface due to water saturation.

The layer above that should be a minimum depth of 1" of fine sand compacted to 90% dry density. If a slope in excess of 1/4" per foot exists or there is any question about the suitability, stability or compaction of the soil, a qualified engineer or General Contractor should be consulted. The sub-grade and sub-surface shall be constructed to a qualified engineer's specification, however, no significant settlement of either should occur as a result of its own weight or removal of soil.

Above grade installations should have at least a 1% fall. For below grade installations, the 1% fall should lead to a drain. Both types of construction must not allow for water accumulation either with diverter drainage or drain, otherwise rubber will float.

Surface variation should not exceed .1 inches in a 3-yard span, measured in any direction.

Optional: For the 1-5/8" and 1-3/4" pavers, dress the finished Evopave surface after installation with a fine silica sand and broom the sand into the seams to achieve tight seams. Once completed, remove any excess sand.

Installation Procedure

The installation of Evopave should not begin until all works and trades have been completed and the entire area cleared of extraneous materials. If the requirements are as such that the Evopave surface must be installed before other trades have completed their work, the installed Evopave surface should be covered with a suitable protective covering and no heavy equipment should be allowed before or after installation. That would include trucks, scissor lifts, large loaded gators, tractors, skid loaders etc.

Installation Solid Underlayment

For interior installation, Evopave and adhesive should be left to acclimatize at a minimum of 68°F for at least 24 hours before, during and after the installation is completed. NOTE: To minimize installation difficulties, avoid extreme temperatures between storage and installation areas. For optimal ease, store material at room temperature (68°F).

For glued-down installations, spread the adhesive evenly, at the recommended rate, and with the recommended trowel size (**see PU88 installation instructions below**). When the Evopave surfacing is installed and embedded into the adhesive, it is recommended that the entire surface be rolled using a 110 lb. hand-held flooring roller. It may be necessary to roll the installed Evopave repeatedly for

up to 2 hours but should never stop until the adhesive has set. Rolling the Evopave surface ensures a proper bond to the sub-surface. This is done to embed Evopave into the adhesive and eliminate any entrapped air. This must be done simultaneously as Evopave is being installed. Care should be taken when embedding Evopave into the adhesive. Do not drag the Evopave pavers across the adhesive, thereby possibly contaminating the adjacent paver.

Weights such as sandbags must be placed on edges, seams, corners, and ends until such time the adhesive has cured. Allow the adhesive to cure for a minimum of 12 hours before using the Evopave surface. Refer to *Maintenance Procedures* for cleaning and finishing options before handing over work.

SPECIAL NOTES TO INSTALLER

If there is any doubt about the suitability and condition of the subfloor or compacted base on which the rubber product is being installed, please contact a suitable expert and DO NOT start installation. WE ARE NOT RESPONSIBLE FOR ANY INSTALLATION OR RE-INSTALLATION COSTS IF DEFECTIVE/INCORRECT PRODUCTS ARE INSTALLED, IF THE PRODUCT IS IMPROPERLY INSTALLED, OR IF THERE ARE PROBLEMS WITH UNDERLAYMENT PREPARATION NOT IDENTIFIED PRIOR TO INSTALLATION.

- 1) Slight color variations are normal in rubber pavers. Because our pavers are made with an aromatic polyurethane binder, some fading of color may occur over time.
- 2) Make sure the underlayment (if any) is clean, dry and conforms to installation instructions for appropriate product being installed.
- 3) Climatize all products, including adhesive and/or application materials at least 24 hours prior to installation. De-palletize rubber into smaller piles so that rubber can relax. Move materials into the installation area that has the same relative temperature and humidity.
- 4) Do not walk on flooring when adhesive is wet. Allow adhesive to set overnight before walking on floor.
- 5) Weight the seams of the rubber flooring with a 100-lb. roller for 2 hours or until adhesive has set.
- 6) Protect the floor from other trades during installation.
- 7) Follow installation instructions and spread rates for adhesive.
- 8) PU88 adhesive can only be applied above 50 degrees Fahrenheit.

SPECIAL NOTES TO OWNERS

Evopave is meant to be installed as a nonskid surface for equine use as either thinner pavers over a solid and suitable underlayment or thicker pavers over a compacted base. Evopave may, to some extent, fade over time and may wear with use or abuse by horses with steel shoes, especially in areas such as tight containment, tack up, wash racks or areas where horses can paw at the floor. Standing water or standing urine will shorten the life of this type of recycled shredded rubber. Horses with shoes such as bohrium, therapeutic lifts, some correctional shoes or cross-country spikes should not be allowed on rubber floors such as Evopave or Versatile. Horses with these types of shoes WILL destroy the rubber.

Driving any vehicle on Evopave that is dry set is not acceptable. There may be exceptions for gator type vehicles if a solid underlayment is used such as concrete and a thin paver is adhered to the concrete with a **caution** of no turning or skidding on the floor. Skid loaders should never be used on rubber flooring. Evopave used on aprons or slope situations in excess of 1-2% should have an

underlayment of concrete or asphalt with rubber adhered. If dry set pavers are required for slopes in excess of 1% you should consult your contractor or engineer for suitability.

CUTTING TIPS:

- 5/8-7/8-inch pavers can be cut with a mat or carpet knife.
- 1-5/8" and 1-3/4"-inch pavers can be cut with a Band Saw (8-10 teeth per inch).

PU88 - Polyurethane Flooring Adhesive

Bonds Innovative Equine Systems' rubber flooring inside and out

Solvent free - Resistant to moisture & weather - Highly economical in use

PU88 is a solvent free non-flammable, moisture, and weather resistant 2-part polyurethane adhesive suitable for indoor and outdoor applications.

APPLICATION FIELD

PU88 is recommended for bonding Innovative Equine Systems' Evopave rubber interlocking pavers and Versatile tiles. It will also bond needle felt, carpets, concrete/glass/ceramic and quarry tiles, expanded polystyrene, chipboard, plywood, hardboard, fiber/cement sheet and metals.

COMPOSITION

A solvent free 2-component polyurethane adhesive with inorganic fillers.

CHARACTERISTICS

	Part A	Part B
Viscosity	Paste	Liquid
Color	Grey	Dark brown
Specific Gravity	3.75 lb./gal.	2.65 lb./gal.
Mixing ration	5 parts by wt.	1 part by wt.

Pot life at 68°F	± 30 minutes High temperatures accelerate, while low temperatures retard curing 50°F - ± 90 minutes 86°F - ± 15 minutes
Consumption	1/8 x 3/32 trowel serration at ± 1.25 lb./sq yard on smooth cement/concrete
Coverage	14 oz. – 2.5 lb./sq. yard depending on condition of sub- floor material. (Examples: on smooth cement sub-floor, use ± 1.25 lb./sq yard. On fine compacted smooth asphalt, use ± 2.25 lb./sq. yard.
Waiting time	Usable immediately after curing
Resistance	Normal flooring traffic after ± 8 hours
Resistance to chemicals	After 7 days
Storage time	12 months when stored in a cool, dry place

APPLICATION

Part A and Part B materials are supplied in separate containers. The mixing ratio is already established (resin to hardener = 5:1).

Pour Part B into the container holding Part A gradually. At the same time, mix the resin and hardener using a hand drill with propeller attachment for a minimum of 2 minutes until an even grey color has been obtained.

Pot life is 30-45 minutes in the bucket at 68°F. At this temperature, the setting time is ± 5-8 hours, after which time the adhesive is resistant to mechanical strain. The final chemical setting and optimum bond strength is achieved after 7 days. Pot and setting times vary depending on temperature and relative humidity. Heat shortens them while cold prolongs them. Do not store adhesive in direct sunlight.

Do not use at temperatures below 50°F or humidity over 90%. Apply the adhesive to the sub-floor with a square notched trowel (3/32 x 1/8 or 1/8 x 1/8).

Do not scrape out the adhesives from the containers. The adhesive in this part may not be totally mixed and may not cure. PU88 adhesive is not a high grab adhesive, and it is recommended that weights be placed on Innovative Equine Systems' rubber flooring products until the initial set of the adhesive has taken place. It is recommended that the bonded rubber flooring is shielded from direct sunlight during the initial setting time.

IMPORTANT INFORMATION

Health and Safety

PU88 adhesive contains diphenyl methan 4, diisocyanate. Ensure adequate ventilation and fresh air during and immediately after use. Do not breathe fumes. Avoid skin contact. It is advisable to wear gloves and a face guard while handling the adhesive. PU88 can only be mechanically removed when fully cured. If not fully cured, Xylene may be used, although its success is dependent on how cured the PU88 is.

Direction of Use

The mixing quantities are set a 5:1. It is vital to observe this mixing ratio of resin and hardener.

Stir the hardener in the resin thoroughly until a uniform grey color is obtained. For best results, use an electric drill with suitable mixing paddle. Minimum mixing time is 2+ minutes. Pour the adhesive out of the bucket but do not scrape out remnants. Use the adhesive immediately. Curing time is dependent on atmospheric conditions and temperature. Curing will be considerably retarded at temperatures below 50°F.

Bulk product in the bucket will cure faster than film spread on the floor, due to chemically induced heat build-up during the curing process. This temperature increase is negated once spread on the floor. Higher temperatures will generally increase curing speed and reduce open time. Innovative Equine Systems recommends that trials are conducted to ascertain actual curing times before proceeding with the actual flooring installation.

Do not use PU88 at temperatures below 50°F.

The above data, particularly the recommendations for applications and use of this product is based on our knowledge and experience. Due to varying conditions during applications that are beyond our control, we strongly recommend carrying out sufficient tests in order to ensure that PU88 is suitable for the intended flooring installation. Except for willful act, any liability based on such recommendations, or any oral advice is hereby expressly excluded.

TECHNICAL SPECIFICATIONS

Name	Evopave Interlocking Rubber Pavers
Description	Prefabricated molded rubber interlocking pavers composed of recycled rubber particles and an MDI polyurethane resin binder
Uses	Equine facilities - along walkways, wash areas, stud areas and parades
Dimensions (plan)	200 mm (L) x 160/115 mm (W)
Thickness	EP45 - 45 mm (1.75") EP20 - 20 mm (7/8") EP15 - 15 mm (5/8")
Density	± 860 kg/m ³ (53.6 lb./ft ³)
Traction Coefficient	Dry 1.0 (μ) Wet 1.0 (μ) Rating: Good
Slip Resistance (u)	Dry 75 (μ) Wet 44 (μ) Rating: Good
Abrasion Resistance 5000 revs.	0.10 (g) Rating: Good (BS 7044)
Fatigue Resistance (new)	No cracking or fracture (BS 7044)
Spike Resistance	Grade 2 - up to 50,000 revs surface repairable under routine maintenance (BS 7044)
Resistance to Indentation	0.64 mm Rating: Good (BS 7044)
Static Load Limit	2,000 psi (ASTM E196)
Resistance to Air Aging	0.18 (g) Rating: Good (BS 7044)
Fatigue Resistance (after air aging)	No cracking or fracture (BS 7044)
Resistance to Water Aging	0.36 (g) Rating: Good (BS 7044)
Fatigue Resistance (after water aging)	No cracking or fracture (BS 7044)
Resistance to Artificial Weathering	0.20 (g) Rating: Good (BS 7044)
Fatigue Resistance (after artificial weathering)	No cracking or fracture (BS 7044)
Resistance to Ozone	No cracking or fracture (BS 7044)
Flammability	Class 1 (ASTM D2859 as well as DIN 51960)
Infiltration Rate	EP 45 = 285 mm/hr. EP 25 = 180 mm/hr. EP 15 = 80 mm/hr.