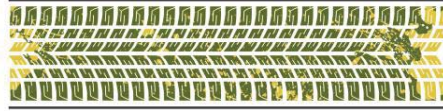




THE TYRED FLOORING COMPANY



CUSHIONWALK[®] PAVERS OUTDOOR RUBBER SURFACING INSTALLATION/ MAINTENANCE GUIDELINES

$\frac{3}{4}$ " INTERLOCKING PAVER
 $\frac{3}{4}$ " NON-INTERLOCKING PAVER



Interlocking Paver



Non-Interlocking Paver

The following pages are guidelines only... please read this manual thoroughly before installing DINO FLEX Rubber Surfacing products.

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
PRODUCT		
I	MATERIAL STORAGE & HANDLING	3
II	TOOLS & ACCESSORIES	4-5
INSTALLATION		
III	BEFORE STARTING THE INSTALLATION	5
IV	PREPARATION OF THE SUB-SURFACE	5-6
V	INSTALLATION OF RUBBER PAVERS	6
	INTERLOCKING METHOD	7
	GLUE DOWN METHOD	8
VI	MEASURING & CUTTING	8-9
VII	ADHESIVE	9
VIII	FINISHING KITS	10
MAINTENANCE		
IX	GENERAL CLEANING & MAINTENANCE	10
GENERAL		
X	WEIGHTS & MEASURES	11

SECTION I

MATERIAL STORAGE & HANDLING

General packaging information

All DINO FLEX products are packaged on wooden pallets, covered with a plastic hood, and secured by steel strapping.

On receipt of merchandise:

A) The product in front of you has gone through several quality assurance checks. However, we recommend that you double-check that your order is correct, that no damage occurred during transport, and for any other possible shortcomings. For your own protection, ensure that defective product is identified prior to the start of the installation.

Do not install product if there are any such shortcomings.

DINO FLEX IS NOT RESPONSIBLE FOR INSTALLATION COSTS, AND WILL NOT BE LIABLE FOR MATERIAL OR LABOR IF DEFECTIVE PRODUCT IS INSTALLED.

B) If adhesives were exposed to freezing temperatures, place indoors and bring to room temperature before using. Read technical data sheets and material safety data sheets for adhesive. Check adhesive cans for damage that may have occurred during transit.

C) Storage: During storage, rubber pavers must be kept dry and adhesive must be stored above 50°F (10°C) in a dry, heated space.

D) Installation after short term storage: At least 24 hours before starting the installation lay out all pavers on the sub-surface to allow them to acclimate. A paver laid in the morning hours at 32°F (0°C) would be a different size than a paver laid at 68°F (20°C) later in the day. Acclimation is complete

when the products have reached their specified dimensions. Refer to the Weights and Measures chart at the back of these guidelines. Short term storage should be considered as two weeks or less.

E) Installation after prolonged storage:

During prolonged storage, the pavers in the lower portion of the stack will compress to a greater degree than those in the upper portion. This will show as thickness variations in the products taken from the top of the pallet as compared to those on the bottom. Product dimensions (length and width) may also be affected. A longer acclimation time will be required for product that has had a longer storage time. Exactly how long is very difficult to predict but can take upwards of 48 – 72 hours. The product should be taken off the pallet and distributed throughout the installation area in small piles consisting of three or less pavers. Acclimation is complete when the products have reached their specified dimensions. (see the Weights & Measures chart at the back of these guidelines).

KEEP PAVERS CLEAR OF TOOLS AND CONSTRUCTION MATERIALS DURING ACCLIMATION TO PREVENT UNEVEN DISCOLORATION.

F) It is important to keep a clean working surface at all times. Protect pavers from dust and dirt.

G) Keep DINO FLEX rubber surfacing dry. Moisture will cause adhesion problems.

H) Petroleum distillants (e.g. solvents) as well as liquid animal fats may cause the surface bonding to fail. Test results for other harmful chemicals and compounds are available on request.

SECTION II

TOOLS & ACCESSORIES

A) Tools and safety equipment required:

DINOFLEX Installation Guidelines

Safety glasses

Heavy duty utility knife and replacement blades (1" blade recommended)

Rubber mallet

Measuring tape

Transit level and Straight edge

Caulking gun

Chalk snap-line

Trowel

- For f concrete surface
1/16" (1.6 mm) V-notch
- Disposable plastic spatula for spot gluing

Carpenter's square

Mineral spirits

Perimeter border if required (e.g. 2"x4" treated lumber)

Drainage Fabric such as Enkadrain® 3811 by Colbond (www.colbond-usa.com)

Woven geotextile fabric such as Geotex 200 ST® by Propex Geosynthetics (www.geotextile.com/product)

Duct tape for geotextile fabric only

B) Finishing kits

The Finishing Kit consists of 4kg rubber granules and 800g polyurethane binder. It is convenient to have on-site at the end of the project to make installations look professional and clean. Use the finishing kit to fill in cuts around vents, post holes, or structure mounts, etc.



C) Adhesive

DINOFLEX recommended adhesive:

1) Chemrex Urethane 941 (V.O.C. compliant)

- One component polyurethane adhesive
- 2 gallon pail: 26 lbs (12 kg)- approximate

coverage: 150 sq.ft. (14 m²) per pail

2) Chemrex Urethane 941 (V.O.C. compliant)

- One component polyurethane adhesive
- 5 gallon pail: 57 lbs (26 kg) - approximate coverage: 375 sq.ft. (35 m²) per pail

3) Chemrex Urethane 948 (V.O.C. compliant)

- One component polyurethane adhesive
- 313 ml gun grade: 2 lbs (10 oz tube)
- approximate coverage:
 - 1/8" (3mm) bead = 90 lineal feet
 - 5/16" (8mm) bead = 11 lineal feet

Rough or uneven sub surfaces will reduce the spread rate of adhesive. Please consider site conditions when calculating adhesive requirements.



It is not uncommon for a moisture cured urethane product, such as Chemrex CX941, to develop a slight skin on the top surface of the product. The slight skinning can be the result of product getting older, or in the case of newer product, perhaps a poor seal in the lid. Regardless, the product is still good; simply trim the skin and discard. In the case of older product, a thicker skin may have developed, and the viscosity of the overall product may have thickened, also making the application a bit more difficult, but in most cases will still perform.

For detailed information and product use, refer to BASF Product Data Guide, included with adhesive.

D) Pins for Interlocking Pavers

The interlocking pins are 2.5" (6.5cm) long and are made from black polyethylene. Each interlocking paver requires four (4) interlocking pins. They are included with every order, four per paver, at no charge.



Interlocking Pin

E) Reducer Strip

Size:

$\frac{3}{4}$ " (19mm)

Available in black solid core x 12'-1-1/2" lengths.



Attach reducer strip to pavers with compatible, non-solvent based adhesive or caulking (e.g. Bull Dog Adhesive PL400).

F) Half Pavers

Half pavers were designed so that full pavers can be installed in a staggered layout. Pavers may also be cut on site – see Section VI – Measuring & Cutting.

SECTION III

BEFORE STARTING THE INSTALLATION

Thoroughly remove all dirt and debris from the surface. A clean smooth surface will help in achieving optimum installation results.

A) During storage, rubber pavers must be kept dry and adhesive must be stored above 50°F (10°C) in a dry, heated space.

B) For glue-down applications, check the ambient temperature:
Temperature range for adhesive use: between 50°F (10°C) and 104°F (40°C). If indoors, in-floor radiant heat should be shut off. In all situations, higher temperatures and humidity increase the curing rate and reduce the working time (pot-life) of adhesive, possibly resulting in adhesion problems. **For detailed information and product use, refer to BASF Product Data Guide, included with adhesive.**

C) Refer to Section I, D regarding **acclimation**. Also note that if large areas are to be installed that will receive direct sunlight, care must be taken to ensure that proper gaps

at perimeter are allowed for expansion. It is NOT recommended that pavers be installed if ambient temperature is above **80°F (27°C)**, as this will result in larger gaps as the pavers cool.

SECTION IV

PREPARATION OF THE SUB-SURFACE

Ensure good drainage of the area by a well-defined gradient of the surface and well-placed drainage pipes in lower spots.

Pavers should not be allowed to sit in pools of water before, during or after installation.

We recommend that Enkadrain® 3811R by Colbond (www.colbond-usa.com), be laid prior to the installation of the pavers. We then suggest that a woven geotextile fabric such as Geotex® 200ST by Propex Geosynthetics be installed on top of the Enkadrain® 3811 R and secured to the perimeter borders.

Pavers may then be “Spot Glued” to the Geotex® 200ST fabric. (see Section VII – C)

A) Concrete sub-surfaces

New concrete surfaces must be thoroughly cured and free from hydrostatic pressure before rubber pavers are installed (a minimum of 28 days after pour). Consult adhesive specifications for allowable moisture tolerance.

If existing concrete is too rough, it can be leveled by sanding or applying a cement based leveling compound (patch), allowing a curing time as recommended by the patch manufacturer. (Follow manufacturer's installation guidelines).

B) Asphalt sub-surfaces

This type of surface must be level and free of grease, oil, and other contaminants. Surface should be pressure washed to remove all loose materials and be thoroughly dry before commencing the installation. New asphalt must be cured for a minimum of 14 days. To ensure good adhesion and minimize expansion issues,

install a woven geotextile fabric such as **Geotex 200 ST® by Propex Geosynthetics** over the asphalt surface. Provide a minimum of 12" overlap of all joints and secure overlap with duct tape or equivalent. Secure geotextile fabric to the perimeter border with adhesive, rust proof nails or staples.

C) Compacted granular surface Compacted granular surfaces are defined as dirt or gravel base. Excavate the area to the depth of the thickness of the paver, plus a minimum of 4 inches. Level and compact the area with a medium to coarse crushed gravel (3/4" minus gravel range). Moisten and compact with a flat plate vibrator to **95% Modified Proctor**. Depending on the irregularity of the resulting surface, use up to 1/4" granular fines to make a smoother surface. For flat surfaces the rolling variance should be no more than 1/4" per 10 feet.

Install a woven geotextile fabric such as **Geotex 200 ST® by Propex Geosynthetics** over top of compacted, level sub-surface. Provide a minimum of 12" overlap at all joints and secure overlap with duct tape or equivalent. Secure geotextile fabric to the perimeter border with adhesive, rust proof nails or staples.

Be aware that even after proper compacting, over time this type of installation may be susceptible to ground settling.

HEAVING OR SETTLING OF SOFT GROUND SUB-SURFACE AS A RESULT OF FREEZE/THAW IS THE SOLE RESPONSIBILITY OF THE INSTALLER AND/OR OWNER.

D) Rooftop applications over roofing membrane

Rubber Pavers should not be installed directly on top of any roofing membrane due to possible compatibility issues with PVC membranes as well as possible expansion and contraction issues. With Rooftop or Roof-deck applications, we recommend a drainage layer such as Enkadrain® 3811 R by Colbond

www.colbond-usa be installed on top of the membrane. We further suggest that a woven geotextile fabric such as Geotex® 200ST by Propex Geosynthetics be installed on top of the Enkadrain® 3811 R and secured to the perimeter borders. This will provide an acceptable surface to which the pavers may be "spot glued" This will also help to mitigate issues of expansion and contraction, and will allow for the removal of the pavers without damaging the drainage layer should access to the membrane be required at some future date.

For all rooftop applications, check with an accredited structural engineer to ensure the rubber pavers meet your **roof load and wind lift requirements** for this project. (Refer to the Weights & Measures chart at the back of these Guidelines).

A QUALIFIED INSTALLER OR ROOFING CONTRACTOR IS RECOMMENDED FOR ROOFTOP INSTALLATIONS.

SECTION V

INSTALLATION OF RUBBER PAVERS

LAYOUT

Dinoflex suggests that pavers be loose laid on the prepared surface prior to installing.

Dinoflex pavers may have minor color variation from paver to paver. This is a normal trait of products manufactured from recycled rubber. This color variation in no way affects the quality of the paver and can be minimized by placing these pavers in less visible areas.

Make sure the sub-surface is properly prepared (see Section IV, Preparation of the Sub-surface). Determine a starting point that best suits the area. For irregular site configurations, a good starting point is often the center. Other installations are best started in the corner along a straight edge. **If installing on a roof or deck it is important**

that the pavers be installed in such a way as to have the interlocking pins face **two opposing walls**. This will help to keep the pavers contained as they expand in the heat of the day. Do not align them where the pins are facing a wall on one side and an open edge on the other.

INTERLOCKING PAVERS

A) Installing Along Straight Edge

Place the first paver at a 90° right angle at your designated starting point, either against a wall, existing border or chalk line. Align first row of pavers along the straight edge. Make sure that all interlocking holes are facing toward unfinished area. It is recommended to leave approx 1/8" – 3/16" space between each interlocking paver to allow for expansion during hot days.

Start second row with a "half paver", which is simply a full paver cut in half (see Measuring & Cutting section below). Continue installation in a staggered method, inserting the interlocking tubes into the paver prior to laying. Repeat first and second row until installation is completed.

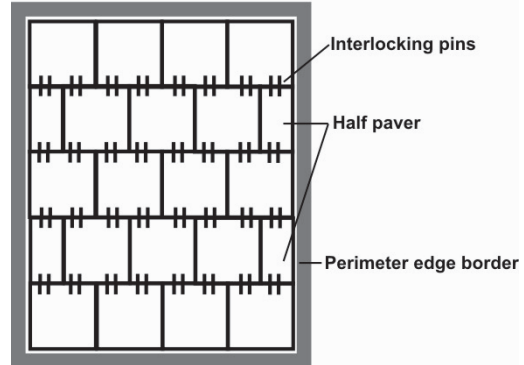
If installing a new perimeter border, it is best if you install two perpendicular edges before laying the pavers. This will reduce movement of the pavers during installation. After pavers are laid, install the last two remaining perimeter borders, making sure to leave room for expansion.

For Rooftop installations we recommend that each paver be "spot glued" to the geotextile fabric.

OUTDOOR INSTALLATIONS OF RUBBER PAVERS WILL ALWAYS EXPAND AND CONTRACT WITH CHANGES IN TEMPERATURE AND HUMIDITY. THE DEGREE OF CHANGE WILL DEPEND ON GEOGRAPHIC LOCATION AND THE SIZE OF PROJECT. BOTH OF THESE FACTORS SHOULD BE

CONSIDERED WHEN DETERMINING YOUR PERIMETER EXPANSION ALLOWANCE. A MINIMUM EXPANSION OF 0.5" PER 10 LINEAL FEET CAN BE EXPECTED IN MOST CIRCUMSTANCES.

Figure A - Staggered Installation



THE CORRECT INSTALLATION OF DINO FLEX INTERLOCKING RUBBER PAVERS IS A STAGGERED PATTERN. THIS WILL ENSURE PROPER ALIGNMENT, A TIGHTER FIT, AND REDUCTION OF VANDALISM.

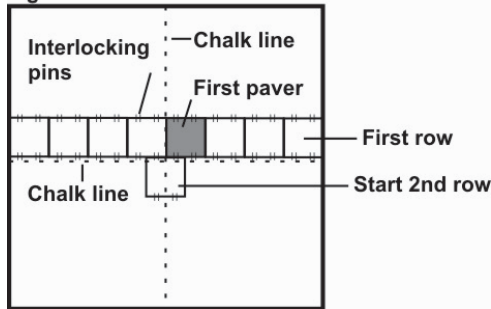
B) Installing Irregular Site Configurations

As reference for installation, measure the designated area and snap chalk lines both length & width at the center of the installation area. These reference lines will serve as a guide for laying the first row of pavers.

Place the first paver at a 90° right angle aligned with the perpendicular center of the chalk lines. Align first row of pavers along this chalk line making sure the interlocking holes are facing toward unfinished areas. Secure this first row of pavers by either spot gluing to sub-surface or creating a temporary border along one edge to hold the pavers in place.

Start second row at center of chalk line lining up with middle of paver above (see diagram below). Continue installation in a staggered method.

Figure B



Refer to Section VI - Measuring & Cutting for cutting irregular shapes.

NON-INTERLOCKING PAVERS GLUE DOWN INSTALLATION

Refer to Section VII- Adhesive before starting installation.

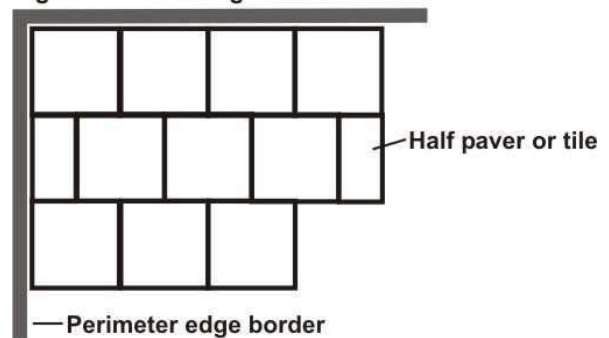
A) Installing Along Straight Edge Determine a starting point for the first row of pavers that best suits the area. (Either against perimeter border or along chalk lines). When installing on geotextile fabric, use string lines in place of chalk lines to eliminate error in paver placement caused by fabric movement.

Using a **1/16"** trowel (see Section II –Tools) spread adhesive on sub surface, slightly wider than the paver. Adhesive may also be applied to back of paver in a 5-Point Spot Glue pattern if easier for specific site conditions (see section VII). Press paver into place, following pre-established course lines. Use rubber mallet to tap pavers together before adhesive cures. Press each paver firmly in place to ensure a good bond with adhesive.

If necessary, cut last paver in row to fit, putting cut edge to outside against perimeter border. If outside edge is exposed, place factory edge out. (See Section VI Measuring & Cutting)

Start next row with a half paver and lay subsequent rows in same alternating pattern. Dinoflex recommends a staggered installation for best fit (Figure C), however a non-staggered installation (corner to corner) is also acceptable if pavers are glued in place.

Figure C - Installing within new border



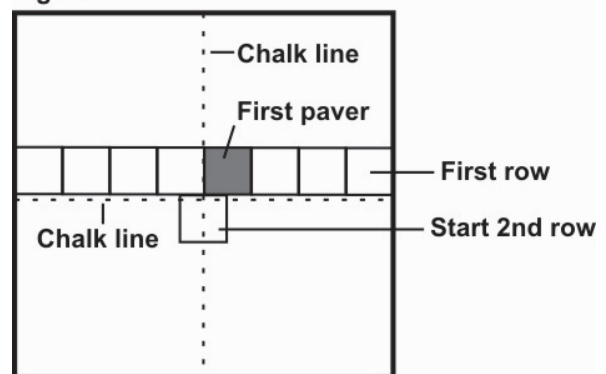
B) Installing Irregular Site Configurations

To create a starting point for installation, measure the designated area and snap chalk lines both length & width at the center of the installation area.

Place the first paver squarely aligned with the perpendicular center of the chalk lines. Align first row of pavers along this chalk line and adhere to sub-surface, following instructions as noted in section A above.

Start second row by placing the center of the first paver at center of chalk line, against the two pavers directly above (see diagram below). Continue installing in this staggered method.

Figure D



Refer to Section VI - Measuring & Cutting for cutting irregular shapes.

SECTION VI MEASURING & CUTTING

Lay paver on a flat surface, hold the metal straight edge on the cut line, and cut with sharp utility knife. Keep scoring the cut until

separated. Change or snap off blades frequently to ensure clean cuts. For odd angles, circular patterns, and to cut around structure mounts, a cardboard template is suggested

If a large amount of cutting is required, installers may consider using a jigsaw or reciprocating saw. If so, suggested blade is 12-14 teeth per inch, or a rubber cutting blade. Depending on thickness and length of cut, inserting a small wedge into start of cut will help to minimize any binding on the blade. Make sure that you measure carefully so that the paver will fit properly and does not leave gaps, resulting in the installation being out of alignment. Place cut edge facing perimeter border. If outside edge is exposed, place factory finished edge out.

Interlocking system:

When using a template to draw the cut marks on the paver, be sure the interlocking holes are facing in the right direction.

SECTION VII

ADHESIVE

A) General

Please read BASF Product Data Guide thoroughly before starting with the installation.

Moisture is the single greatest cause of bonding failure.

Higher temperatures and humidity cause the adhesive to cure faster.

Use safety glasses, rubber boots, and rubber gloves when applying adhesive.

For first aid and safety instructions refer to BASF Product Data Guide.

B) Applying Adhesive

WEAR GLOVES AT ALL TIMES WHEN APPLYING ADHESIVE. DO NOT ALLOW ADHESIVE TO CURE ON YOUR HANDS.

All substrates must be structurally sound, smooth, clean, dry, and free from dust, loose

material, grease, oil, wax, sealers, curing agents, and other foreign materials. Apply adhesive with appropriate trowel when spreading on sub-surface. Adhesive may also be applied directly to back of paver using a plastic spatula. (see Section II - Tools and Accessories).

C) 5-Point Spot Glue

In some installations, a five-point spot gluing method may be used as an alternative, especially if drainage is a consideration. Apply approx 2" dia x 3/16" spots of adhesive to the center and to each corner of the paver. This will be sufficient when adhering pavers to geotextile fabric, or concrete.

When applying adhesive, glue must be spread evenly on sub-surface or on back of each paver to avoid differences in paver height. Allow 48 hours setting time. Avoid heavy traffic during curing time.

DO NOT GET ADHESIVE ON THE SURFACE OF THE PAVERS AS IT IS VIRTUALLY IMPOSSIBLE TO REMOVE.

Using mineral spirits or similar products to remove adhesive residue may alter the surface appearance of the pavers. If you choose to use this type of product to remove adhesive, test product for color fastness first using a small amount of mineral spirits applied with a clean, dry cloth. Do not scrub! Any damage to the pavers as a result of adhesive removal is solely the responsibility of the installer.

D) Clean Up Adhesive

Excess adhesive should be cleaned immediately as per adhesive manufacturer's instructions. Cured adhesive bonds tightly and is difficult to remove. **Do not use solvents** as they cause deterioration of the bonding compound between the rubber granules.

SECTION VIII

FINISHING KITS – FILLING IN CUTS

After all pavers are in place and secured, spaces around vents, post holes, or structure mounts can be filled. A black, single component, polyurethane caulking can be used for small repairs (e.g. ¼” voids). For voids exceeding ¼” in diameter around, the **DINOFLEX Finishing Kit** should be used.

Contents of Finishing Kit:

- 1 can (800g) polyurethane binder 107
- 1 bag (4kg) rubber granules (color to match pavers)
- 1 MSDS for polyurethane binder

A) Mixing

DO NOT MIX THE INGREDIENTS UNTIL INSTALLATION OF PAVERS IS COMPLETED. READ MSDS BEFORE STARTING.

If only part of the kit is needed, use this guide:
5 parts by weight of granules to 1 part by weight of binder, e.g. 5 ounces granules to 1 ounce binder.

Take full amount of rubber granules and pour into clean plastic pail, gradually pour binder into mixture, stir while pouring. The curing time for this product is approximately 20 to 40 minutes depending on ambient temperature and humidity. Mix only what will be used in this time frame. Higher ambient temperatures and humidity will result in a faster curing rate. Do not start installation if weather forecast calls for rain or temperatures below 60°F (15°C)

B) Clean up

Use a solvent to clean tools. Clean up any polyurethane immediately using a clean, dry cloth, as it will leave visible traces on paver surface if allowed to cure. Do all mixing away from paver surface to protect pavers from damage.

SECTION IX

GENERAL CLEANING & MAINTENANCE

ROUTINE MAINTENANCE EXTENDS LIFE AND ENHANCES APPEARANCE.

A) Initial Cleaning:

The pavers are coated with water-based mold release residue, a natural result of the manufacturing process. This will initially cause slight discoloration and slipperiness. For fast removal, apply a solution of neutral cleaner (e.g. Simple Green) and agitate with brush or mop, then rinse with water. Otherwise, let mold release wear off with time, which could take up to four weeks.

KEEP MOVEABLE FURNISHINGS, PLANTERS, ETC OFF NEWLY INSTALLED SURFACE FOR A MINIMUM OF 48 HOURS. THIS WILL ALLOW ALL PAVERS TO BE EXPOSED TO UV LIGHT AND ENSURE EVEN INITIAL COLOR ADJUSTMENT.

B) Ongoing Maintenance:

Sweeping and hosing off the surface are the most common methods of keeping the pavers clean. If surface is excessively dirty, apply a solution of neutral cleaner and water and agitate with a brush. Then rinse with garden hose. **Do not use a pressure washer to clean pavers. Do not use solvents of any kind.**

DINOFLEX DOES NOT ASSUME ANY RESPONSIBILITY FOR DAMAGES CAUSED BY CHEMICAL ADDITIVES.

SECTION X

WEIGHTS & MEASURES

GENERAL PACKAGING INFORMATION

All DINO FLEX products are packaged on wooden pallets, covered with a plastic hood, and secured by steel strapping.

Product Information - Rubber Pavers:

Thickness tolerance of ± 3.0 mm

Non-Interlocking CushionWalk® Pavers:

$23 \frac{3}{4}'' \times 23 \frac{3}{4}'' = 3.92 \text{ ft}^2$ per paver ($60.3 \text{ cm} \times 60.3 \text{ cm} = 0.36 \text{ m}^2$)

Thickness:	Pavers per pallet:	Weight per Paver:	Weight of pallet
$\frac{3}{4}''$ (19 mm)	160 - 172	14 – 15.5 lbs (6 – 7 kg)	75 lbs (34 kg)

Interlocking CushionWalk® Pavers:

$24'' \times 24'' = 4 \text{ ft}^2$ per paver ($61 \text{ cm} \times 61 \text{ cm} = 0.37 \text{ m}^2$)

Thickness:	Pavers per pallet:	Weight per Paver:	Weight of pallet
$\frac{3}{4}''$ (19 mm)	140 - 160	16 – 17.5 lbs (7.25 – 8 kg)	75 lbs (34 kg)

Conversion Chart:

1 in	=	2.54 cm
1ft	=	30.5 cm
39.4 in	=	1.00 m
2.2 lbs	=	1.0 kg

Weights and measures may change without notice. All measurements are nominal and subject to variation.

DISCLAIMER

The installation guidelines in this manual represent typical installation work procedures. Every site is different and DINO FLEX does not claim to have covered all possible circumstances. DINO FLEX Group Limited Partnership does not warrant installation work and specifically disclaims liability for any direct or indirect personal injury, property damage, and other costs or losses resulting from installations or applications by third parties. Please see the DINO FLEX Limited Warranty for the particulars of warranty coverage relating to DINO FLEX's products.