

# PlayGuard<sup>®</sup>

PLAYGROUND SAFETY SURFACING



## Technical Manual

Installation – Maintenance - Warranty

Manufactured in the U.S.A. by:

**ecore**<sup>™</sup>  
— INTERNATIONAL —

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Supersedes all previous  
versions. Check website  
for updates.

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## BASE PREPARATION

### I. GENERAL INFORMATION

PlayGuard® playground surface tiles and accessories by ECORE International™ can be installed on concrete, asphalt or loose base surfaces with a protective fabric utilizing the Quad Blok system, except for limitations noted herein.

**NOTE:** Dimensional tolerance for tiles is +/- 1/8" for thickness and +/- 1/8" in width. It may be necessary to hand select some tiles to make sure the course lines remain straight during the installation. Additionally, color tone and shading may vary to the extent that some hand selection is required to maintain uniformity throughout the site.

o = Recommended	s = ACCEPTABLE		
	INTERIOR		
SURFACE	24" x 24" x 2-1/2"		24" x 24" x 3-3/4", 4-1/4"
	Quad Blok	Full Glue	Full Glue
Concrete Surface	o	o	o
Asphalt Surface	o	o	o
Plywood	o	o	o
Compact Gravel	o	N/A	N/A
Wood or Tile Surface	o	N/A	N/A
Resilient Flooring	o	N/A	N/A
Carpet	o	N/A	N/A

o = Recommended	s = ACCEPTABLE		
	EXTERIOR		
SURFACE	24" x 24" x 2-1/2"		24" x 24" x 3-3/4", 4-1/4"
	Quad Blok	Full Glue	Full Glue
Concrete Surface	o	o	o
Asphalt Surface	o	o	o
Compact Gravel	o	N/A	N/A
Wood or Tile Surface	o	s	s
Resilient Flooring	o	N/A	N/A
Indoor/Outdoor Carpet	o	N/A	N/A
Rooftops	o	N/A	N/A

N/A = Not an approved installation method

## BASE PREPARATION

### I. TOOLS/MATERIALS REQUIRED

1. Two tape measures - one 25', one 50'
2. Chalk line
3. Saber saw
4. Blades for saber saw (7-10 teeth per inch, wood type)
5. Utility knife with heavy-duty blades
6. Framing square
7. Silver or gold color paint pencils
8. Standard size caulk gun
9. 4" slot blade screwdriver
10. Silicone Spray Lubricant
11. Notched trowels (1/8" square notch - 2 minimum plus 1 for each additional 400 sq. ft.)
12. Linoleum Knife (Foam Installation)
13. Safety glasses
14. 1-1/2" flexible putty knife
15. Coveralls
16. Kneepads
17. Solvent safe rubber gloves, long cuff style
18. Rags
19. Trash bags
20. Push broom or high velocity blower
21. Mineral spirits
22. Installation instructions
23. String line
24. Cutting table (shipping pallet)
25. Dustpan

### II. SITE WORK

#### A. Site Elevation

1. On grade installation - The finished installed height of the PlayGuard surface will be equal to or slightly higher than the perimeter grade but not more than 1" higher unless approved by the project engineer.
2. Above grade installation - The installation of PlayGuard over existing decks or slabs is referred to as an "above grade installation" and will usually require the use of reducers around the perimeters of the area to transition smoothly back to the floor elevation, unless the site terminates at a wall or other vertical surface.

#### B. Site Slope / Drainage

1. When preparing a new hard base, a minimum slope equal to 1" per 10' of run shall be applied to the finished surface with slope toward the drain basin, drain trough or down grade side of the site, whichever applies to your project.
2. An acceptable drainage system needs to be put in place to eliminate standing water.

### III. BASE OPTIONS

#### A. Hard Base Construction

1. Concrete Base
  - a. The base will be constructed of cast-in-place, non-structure, Class A concrete that will develop a minimum compressive strength of 3,000 PSI after a 28 day cure (minimum thickness = 4"). Care should be taken to provide for the stated slope. The base should be free of depressions that would pond water. A light broom finish is best for maximum adhesion of the PlayGuard tile. New concrete slabs should cure for a minimum of 28 days before installing PlayGuard by the adhered method.

## BASE PREPARATION

### 2. Paved Asphalt Base

- a. Course aggregate mixtures will provide a stable base. The aggregate size best suited for the adhered system is 3/8" to 1/2". Do not use asphalt mixtures that contain a high percentage of fines as they are not stable in hot weather and may become soft enough to allow the tiles to slide in high use areas.
- b. 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 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
1/2"	100
3/8"	80-100
#4	45-90
#8	30-65
#50	5-25
#200	2-8
Asphalt Cement	6-8

- c. New asphalt surfaces should be allowed to cure for 28 days before the adhered PlayGuard system is laid.

### **B. Preparation of Compacted Loose Base**

- 1. In outdoor areas or areas with no walls or confines, a perimeter footer will need to be constructed to contain the compacted loose base.
- 2. The area inside the footer should be excavated to receive 6" of loose aggregate fill. The amount of excavation and fill can be adjusted to allow the PlayGuard tile and footer finished surfaces to have the same elevation.
- 3. By adding fill material and compacting to the top of concrete footer, the PlayGuard tile can be laid over the top of the footer concealing it if so desired.
- 4. In all loose base areas, the base should be constructed of 6" of compacted limestone screenings mixture or equivalent aggregate common to your area. A screenings mixture is one having no aggregate larger than 3/8" and should conform to the following sieve analysis.

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

- 5. Once the loose base has been installed and has achieved 95% compaction to the desired elevation, cover the entire area with geo-textile fabric including the top of the footer where the PlayGuard tile extends over the footer. The minimum infield overlap of successive geo-textile sections is 4". The geo-textile should be adhered to the top of the footer on all sides to anchor the mat and keep it in place throughout the life of the installation.

## INSTALLATION

### I. SITE LAYOUT

- A. Sweep area clear of all dust and loose debris.
- B. Determine a starting point for the first course of tile to best suit the site area. For irregular site configurations, the best starting point is often in the center. This will ensure a symmetrical finish for tiles that require trimming along the perimeter. Other installations are best started in the corner or along the edge that represents the length or width dimension of the site.
- C. Mark two points on the base surface at an equal distance from the edge of the installation. These points should be located near the opposite ends of the site in the lengthwise direction.
- D. Snap a chalk line through the established points. When installing PlayGuard over a geo-textile fabric, string lines must be used in place of chalk lines.
- E. Measure the length of the site along the chalk line. Mark a point at half the distance of the site.
- F. Using the 3-4-5 right triangle method, snap a chalk line to form a 90° angle to the previously established length-wise chalk line. These perpendicular reference lines will serve as a guide for laying the first course of tile.

### II. GENERAL INFORMATION

PlayGuard tiles can be installed using a variety of installation methods. The most common and secure method is full adhesion of tiles and accessories to the substrates using E-Grip III, an easy-to-use one part polyurethane adhesive.

**NOTE:** For rooftop and specialty applications, ECORE recommends the use of PlayGuard's exclusive fastening system called Quad Blok™. Tiles are adhered to the Quad Blok connector, eliminating damage to the roof membrane.

### III. FULLY ADHERED INSTALLATION

- A. Follow the site layout instructions to prepare the site area for installation. The tiles, accessories and substrates must be dry before, during and 24 hours after the application of adhesive.

**NOTE:** Coverage rates for the E-Grip III adhesive are approximately 60 sq/ft on concrete, and 50 sq/ft on asphalt. E-Grip III is available in 2-gallon and 4-gallon pails.

- B. Using a 1/8" square-notched trowel, apply the E-Grip III adhesive slightly wider than the tile being placed.
- C. Place tile into the fresh adhesive bed following pre-established lines. If applicable, place ramps into the fresh adhesive in a similar manner.
- D. Allow 24 hours for adhesive to cure before opening area for use.

## INSTALLATION

### IV. QUAD BLOK INSTALLATION

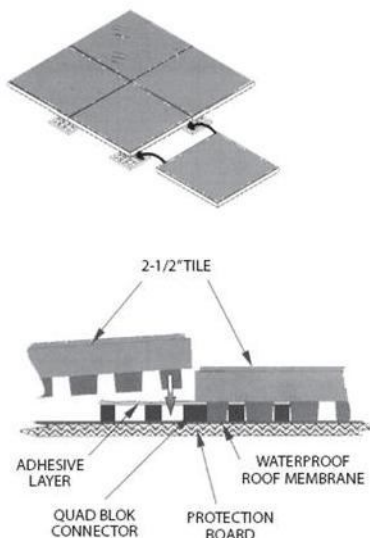
**NOTE:** Installation of PlayGuard by means of the Quad Blok system works only with 2-½” tiles.

- A. Follow the Site Layout instructions to prepare the roof for the installation of 2-½” PlayGuard tiles.
- B. Once chalk lines are established, place the first tile at the intersection of two chalk lines, aligning adjacent edges of the tile with the chalk lines.
- C. Apply a continuous 3/8” diameter bead of E-Grip III adhesive along the center axes of all Quad Blok connectors. Working adhesive time is dependent upon environmental conditions.
- D. Fit the first tile with four prepared Quad Blok connectors by lifting each tile corner slightly, sliding the connectors under each corner and engaging the four corner legs of each tile with the respective apertures in the Quad Blok. Continue to sequentially lay the tile and to set the Quad Blok connectors along one chalk line until the first course of tile is complete.

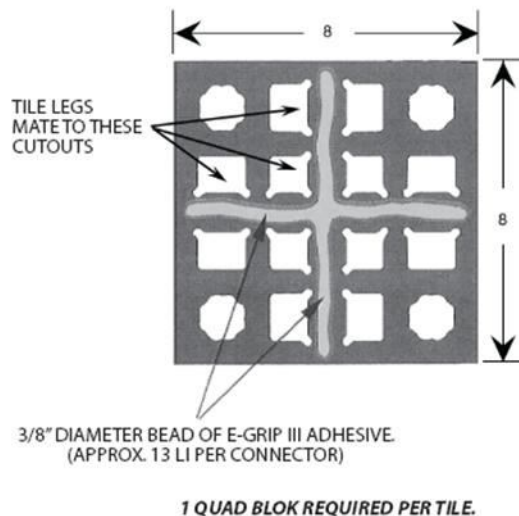
**NOTE:** In the field, cut the Quad Blok connectors in half to properly secure tile around the perimeter edge of surface area.

- E. Complete the other three quadrants of the roof deck in a similar fashion.
- F. Depending on manpower availability, one or more quadrants can be worked on simultaneously using the above method.
- G. Allow 24 hours for adhesive to cure before opening area for use.

#### 1. Typical Tile Field Placement



#### 2. Connector Detail



## INSTALLATION

### V. PLAYGUARD TILE AND QUAD BLOK OVER FOAM PAD INSTALLATION

**NOTE:** Installation of the “PlayGuard Foam Pad” system is to be used only with the 2-1/2” PlayGuard tile and Quad Blok.

- A. Sweep area clear of all dust and loose debris.
- B. Determine a starting point for the first course of PlayGuard Foam Pad, a 4' x 6' x 2-1/8” thick sheet, to best suit the site area.
  - a. For irregular site configurations, the best starting point is often in the center. This will ensure a symmetrical finish for tiles that require trimming along the perimeter.
  - b. Some installations are best started in the corner or along the edge that represents the length or width dimension of the site.
- C. Once the layout is determined, use a minimum 1/8” square notched trowel to apply E-Grip III adhesive to a 6” x 6” area at each bottom corner of the PlayGuard Foam Pad. Extra adhesive may be necessary over extremely rough surfaces. Insure that there are no gaps between the PlayGuard Foam pads sheets. Under windy conditions it may be necessary to weight down the foam until the adhesive develops a firm set.

**NOTE:** The top of the PlayGuard Foam Pad is covered with fabric.

- D. The most accurate cuts are made using a heavy-duty high carbon steel linoleum knife and a straight edge. A saber saw utilizing a 7-10 TPI wood cutting blade also does an acceptable job, especially for free-form cuts. Blade must be long enough to penetrate the 2-1/8” pad. A saw with a 3-3.5 amp rated motor having a 1” stroke with variable orbital setting will produce the best results.
- E. When installing pad around equipment posts a minimum 6” perimeter area of adhesive should be utilized. Standard hole saws work well for making cut outs but a lead in cut is required to place the pad in place around the posts.
- F. To install tile and quad Blok over the PlayGuard Foam Pad, begin by following the Site Layout Installation Instructions to prepare the site for the installation of 2-1/2” PlayGuard tile.
- G. Follow the quad Blok Installation Instructions to prepare the site to install tile and quad Blok connectors.

### VI. CUTTING TILES & ACCESSORIES

- A. Avoid leaving a cut edge of a tile exposed to eyesight. To ensure a finished appearance, any tile that has its factory molded edge removed or cut for any reason should be positioned against a transition ramp, masonry, or timber edging unless the edge is to be placed against a wall or other vertical member. Use either a silicone sealant or a permanently elastic urethane sealant/adhesive for filling gaps, if any, between cut edges and walls.
- B. The most accurate cuts are made using a heavy-duty utility knife and a straight edge. A saber saw utilizing a 7-10 TPI wood cutting blade also does an acceptable job, especially for free-form cuts. A saw with a 3-3.5 amp rated motor having a 1” stroke with variable orbital setting will produce the best results. Silicone spray lubricant will aide in the cutting and minimize heat from friction.



## INSTALLATION

- C. On larger jobs a band saw can be used to make accurate cuts. It is recommended to use a spray silicone to minimize friction and keep the blade from binding.
- D. When working beneath the play structure, it will be necessary to occasionally notch out portions of tiles so that the tiles will properly fit around the posts supporting the play equipment.
- E. Cut tile so that the cutout is approximately ¼" larger in all dimensions than the support it will surround. The extra distance is to prevent binding of the tile around the support. Voids between the equipment supports and tile cuts should be filled in with silicone sealant or a permanently elastic urethane sealant/adhesive.
- F. Tile cuts are normally laid out by referencing dimensions from the edges of tiles already in position. These dimensions are then transferred to and laid out on the tile to be cut.
- G. A lead-in cutting line is extended from the tile edge to the portion to be cut. The lead-in cutting line chosen usually represents the shortest distance from the cutout area to an edge of the tile or the one that is least noticeable.
- H. Reducers installed at the corners should be miter cut to allow reducers to fit together correctly, or use factory molded corner pieces available in 2-1/2" thickness.

## MAINTENANCE

Steps	TASKI® Products	Dilute	Diluted Coverage	TASKI® Brushes
Initial Cleaning	TASKI® Profi	10 oz./gal. water	180 to 360 sq. ft./gal.	Soft Nylon Brush
Regular/Daily Cleaning	TASKI® Profi	10 oz./gal. water	180 to 360 sq. ft./gal.	Soft Nylon Brush or Mint Pad
Heavy Soil & Restorative Cleaning	TASKI® Profi TASKI® RubberSafe	10 oz./gal. water	180 to 360 sq. ft./gal.	Brown Pad or Black Pad



Broom



Wet Mop



Wet/Dry Vacuum



Auto Scrubber



Buffer

### I. INDOOR MAINTENANCE

#### A. Initial Cleaning

1. Remove all surface soil and debris by sweeping, mopping or vacuuming.
2. Scrub floor with a neutral detergent using buffer or auto scrubber with a soft nylon brush.
3. Pick up solution with a wet vacuum, rinse thoroughly with clean water and allow to dry thoroughly (6-8 hours).

#### B. Daily/Regular Cleaning

1. Remove all surface soil and debris by sweeping, mopping or vacuuming.
2. Scrub floor with a neutral detergent using buffer or auto scrubber with a mint pad or soft nylon brush.
3. Pick up solution with a wet vacuum, rinse thoroughly with clean water and allow to dry thoroughly (6-8 hours).

#### C. Heavy Soil & Restoration

1. Sweep and dry vacuum floor thoroughly.
2. Aggressively scrub the floor with a recommended cleaner, a brown or black pad and an auto scrubber or rotary scrubber.
3. Vacuum soiled solution with a wet/ dry vacuum and rinse thoroughly with clean cool water.
4. Allow floor to dry thoroughly.

## MAINTENANCE

### II. OUTDOOR MAINTENANCE

#### A. Initial Cleaning

1. Tile should be swept thoroughly or dry vacuumed using a heavy-duty shop vacuum.
2. As an alternative, some outdoor sites may be blown clean with a powered leaf blower.

#### B. Interim/Restorative Maintenance

1. Sweep, dry vacuum or blow the site clean.
2. Aggressively scrub the floor with a neutral detergent and a cold water pressure washing unit.
3. Vacuum soiled solution with a wet/dry vacuum or use a squeegee to remove surface water.
4. Allow site to dry thoroughly.
5. Repeat if necessary.

#### C. Heavy Soil & Restoration

1. Sweep and dry vacuum floor thoroughly.
2. Aggressively scrub the floor with a neutral detergent, a purple or black pad and an autoscrubber or rotary scrubber.
3. Vacuum soiled solution with a wet/ dry vacuum and rinse thoroughly with clean cool water.
4. Allow floor to dry thoroughly.

## MAINTENANCE

### III. EQUIPMENT SPECIFICATIONS

<b>Power Scrubber</b>	17" rotary floor buffer with mounted detergent tank and feed line to the brush. A circular brush attachment should be used.
<b>Auto Scrubber</b>	Unit with clear hot water rinse feature and wet vacuum pickup. Wand extension and 10 to 14 inch pickup nozzle is recommended.
<b>Cold Water Pressure Washing Unit</b>	<ul style="list-style-type: none"> <li>• Power Unit: 10-13 hp gasoline engine</li> <li>• Capacity: 3-4 gallons per min.</li> <li>• Pressure: 1300 psi</li> <li>• Keep tip 18" from tile surface. Recommended 40° wash nozzle.</li> <li>• Extensions for trigger gun and quick disconnect fittings are recommended</li> </ul>
<b>Wet/Dry Shop Vacuum Unit</b>	<ul style="list-style-type: none"> <li>• Power Unit: Minimum 1.7 hp commercial unit, 7.0 amp, 120 vlt A.C., 50/60 Hz two-stage bypass motor.</li> <li>• Tank Capacity: 10-25 gallon, lined stainless steel or polypropylene.</li> <li>• Accessories: Extension wand with a 6 to 12 inch pickup nozzle, crevice tool, heavy-duty extension cord.</li> </ul>
<b>Detergent</b>	Commercial/Industrial non-petroleum based neutral detergent such as Taski Profi, Taski Ice It or their equivalent.

## WARRANTY

PlayGuard Safety Surfacing is guaranteed by ECORE to be free of manufacturing defects in both material and workmanship. If such a defect is discovered, the customer must notify ECORE directly or through the contracting installer or distributor. If found to be defective within 15 years, the sole remedy against the seller will be either replacement or repair of the defective goods, as outlined in the warranty coverage schedule or at the seller's option, credit may be issued not exceeding the selling price of the defective goods. If product type or color purchased is no longer available at time of warranty claim, ECORE at its discretion may substitute a product determined by ECORE to be of comparable quality and price.

The PlayGuard warranty shall not cover dissatisfaction due to improper maintenance, installation, or usage, or general misuse, including and without limitation: burns, cuts, tears, scratches, scuffs, normal abrasion from pedestrian traffic, damage, or discoloration from cleaning products not recommended by ECORE, or color change due to initial or extended exposure to direct sunlight or differences in color between samples or photographs and actual flooring.

ECORE International reserves the right to make updates to this manual at any time. For the most updated version please visit [www.playguardsurfacing.com](http://www.playguardsurfacing.com).



For more information on PlayGuard Playground Safety Surfacing contact ECORE at 1-800-851-4746 or visit [www.playguardsurfacing.com](http://www.playguardsurfacing.com)

Manufactured in the U.S.A. by:

