

# PLAYGUARD<sup>®</sup>

SAFETY SURFACING



## PLAYGUARD SAFETY SURFACING

### TECHNICAL MANUAL

Installation • Maintenance • Warranty

Manufactured in the U.S.A. by:

**ecore<sup>™</sup>**

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Supersedes all previous versions.  
Check website for updates.

[www.playguardsurfacing.com](http://www.playguardsurfacing.com)

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I. GENERAL INFORMATION

PlayGuard® playground safety surface tiles and accessories by Ecore 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.

**NOTE:** PlayGuard Safety Surfacing is manufactured from recycled materials and slight variance in shade and color chip dispersion is normal. It is the installer’s responsibility to inspect all products to ensure the correct style, thickness, and color. Any moderate to severe discrepancies should be reported immediately before beginning installation.

	0 = Recommended		N/A= Not Approved	
	Interior		Exterior	
Surface	24" x 24" x 2-1/2"		24" x 24" x 2-1/2"	
	Quad Blok	Full Glue	Quad Blok	Full Glue
Concrete Surface	0	0	0	0
Asphalt Surface	0	0	0	0
Plywood	0	0	0	N/A
Compact Gravel	0	N/A	0	N/A
Wood or Tile	0	N/A	0	N/A
Resilient Flooring	0	N/A	0	N/A
Carpet	0	N/A	0	N/A

II. TOOLS/MATERIALS REQUIRED

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

### III. 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.

### IV. BASE OPTIONS

#### C. 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.

##### 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.

**D. 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 to end up with a symmetrical layout for tiles that require trimming along the perimeter.

**NOTE:** Trimmed / partial tiles may require additional underneath support; this will need to be site-engineered.

- C. Other installations are best started in the corner or along the edge that represents the length or width dimension of the site.
- D. 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.
- E. 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.
- F. Measure the length of the site along the chalk line. Mark a point at half the distance of the site.
- G. 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, we recommend the use of Quad Bloks; the tiles are adhered to the Quad Blok connector and not the roof.

### III. FULLY ADHERED INSTALLATION

- A. **NOTE:** Fully adhered installation method is NOT permitted over Poly Foam
- B. The tiles, accessories, and substrates must be dry before, during, and 24 hours after the application of adhesive. Application temperatures for E-GRIP III III adhesive are 40° F to 100° F. Higher temperatures and humidity levels will cause the adhesive to set faster and colder temperatures and low humidity will slow down the curing process. The installer should monitor on site conditions and adjust open times accordingly.
- C. Using a 1/8" square-notched trowel, apply the E-Grip III adhesive slightly wider than the tile being placed. Coverage rates for the E-Grip III using a 1/8" square-notched trowel are approx. 60 sq/ft gal on concrete and approx. 50 sq/ft gal on asphalt.

- D. Place tile into the fresh adhesive bed following pre-established lines. If applicable, place ramps into the fresh adhesive in a similar manner.
- E. Allow 24 hours for adhesive to cure before opening area for use.

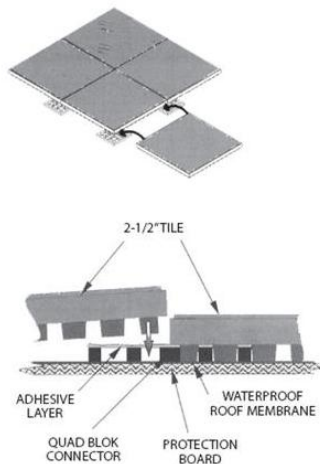
**IV. QUAD BLOK INSTALLATION**

- A. **NOTE:** Quad Bloks are required over Poly Foam
- B. Follow the Site Layout instructions to prepare the roof for the installation of the 2-1/2" tiles.
- C. 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.
- D. 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.
- E. 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.

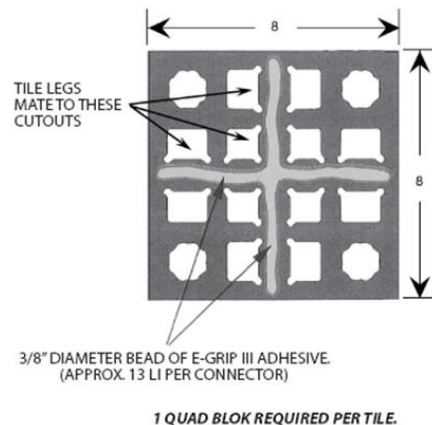
**NOTE:** Cut Quad Blok connectors in half to secure tile at the perimeter edge of surface area.

- F. Complete the other three quadrants of the roof deck in a similar fashion.
- G. Depending on manpower availability, one or more quadrants can be worked on simultaneously using the above method.
- H. Allow 24 hours for adhesive to cure before opening area for use.
- H. One 10.1 ounce tube of E-Grip III is required for approx. 10 of the 8" x 8" Quad Blocks.

**1. Typical Tile Field Placement**



**2. Connector Detail**



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

**CAUTION! Please note:**

1. Quad Bloks **must** be used when installing over Poly Foam
  2. The **top** of the PlayGuard Poly Foam Pad is covered with fabric.
  3. **Plan ahead!** Position the Poly Foam (cut if necessary) so the edges of the PlayGuard tile **do not line up with an edge of a Poly Foam pad** section.
  4. The Poly Foam Pads are **only** to be used with the **2-1/2"** PlayGuard tile and **Quad Bloks**
- A. Sweep area clear of all dust and loose debris.
- B. Determine a starting point for the first course of PlayGuard Poly Foam Pad, a 4' x 6' x 2-1/8" thick sheet, to best suit the site area.
1. 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.
  2. 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 Poly Foam Pad. Extra adhesive may be necessary over extremely rough surfaces. Insure that there are no gaps between the PlayGuard Poly Foam pad sheets. Under windy conditions, it may be necessary to weight down the Poly Foam until the adhesive develops a firm set.
- NOTE:** The top of the PlayGuard Poly 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.
- E. When installing pad around equipment posts, a minimum 6" perimeter area of adhesive should be utilized. Standard hole saws work well for making cutouts, 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 Poly 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. Silicone spray lubricant will aide in the cutting and minimize heat from friction.



- 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  $\frac{1}{4}$ " 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.

**Maintenance**

Steps	Cleaning Products	Dilute	Brush/ Pad
Initial Cleaning	Ecore's E-Cleaner	10 oz./gal. water	Soft Nylon Brush or 3M 5100 Red pad or equiv.
Regular/Daily Cleaning	Ecore's E-Cleaner	2-4 oz./gal. water	Soft Nylon Brush or 3M 5100 Red pad or equiv.
Heavy Soil & Restorative Cleaning	Ecore's E-Cleaner, Ecore's E-Strip	10 oz./gal. water 16 oz./gal. water	Brown or Black stripper pad

**I. INDOOR MAINTENANCE**

**A. Initial Cleaning**

1. Remove all surface soil and debris by sweeping, mopping or vacuuming.
2. Scrub floor with Ecore's E-Cleaner, diluted per table above, using a rotary scrubber or auto scrubber with soft nylon brush or 3M 5100 Red pad or equiv.
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 Ecore's E-Cleaner, diluted per table above, using a rotary scrubber or auto scrubber with soft nylon brush or 3M 5100 Red pad or equiv.
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 Ecore's E-Cleaner or E-Strip, diluted per table above, using a rotary scrubber or auto scrubber with soft nylon brush or 3M 5100 Red pad or equiv.
3. Vacuum soiled solution with a wet/dry vacuum and rinse thoroughly with clean cool water.
4. Allow floor to dry thoroughly.

## 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 Ecore's E-Cleaner or E-Strip and a cold water pressure washer. Do not damage tiles with pressure washer.
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 Ecore's E-Cleaner or E-Strip, a brown 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.

III. EQUIPMENT SPECIFICATIONS

<b>Power Scrubber</b>	17" rotary low speed (175 – 300 RPM) floor buffer with a circular brush / pad attachment
<b>Auto Scrubber</b>	Unit with clean water rinse feature and wet vacuum pickup. Wand extension with pickup nozzle
<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 far enough from tile surface so as to not damage surface.</li> <li>• Recommended 40° wash nozzle.</li> <li>• Extensions for trigger gun and quick disconnect fittings</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>	Ecore's E-Cleaner or E-Strip

## 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, 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, 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, slight shade variations or color change due to initial or extended exposure to direct sunlight, or differences in color between samples or photographs and actual flooring.

Any application other than children's playgrounds or rooftop & patio adult pedestrian traffic use will need to be approved by the Ecore PlayGuard Division.

Ecore reserves the right to make updates to this manual at any time. For the most updated version of manuals and warranties, please visit [www.playguardsurfacing.com](http://www.playguardsurfacing.com).



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